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Mobile Device Use While Driving — United States and Seven European Countries, 2011

Road traffic crashes are a global public health problem, contributing to an estimated 1.3 million deaths annually (*1*). Known risk factors for road traffic crashes and related injuries and deaths include speed, alcohol, nonuse of restraints, and nonuse of helmets. More recently, driver distraction has become an emerging concern (*2*). To assess the prevalence of mobile device use while driving in Belgium, France, Germany, the Netherlands, Portugal, Spain, the United Kingdom (UK), and the United States, CDC analyzed data from the 2011 EuroPNStyles and HealthStyles surveys. Prevalence estimates for self-reported talking on a cell phone while driving and reading or sending text or e-mail messages while driving were calculated. This report describes the results of that analysis, which indicated that, among drivers ages 18–64 years, the prevalence of talking on a cell phone while driving at least once in the past 30 days ranged from 21% in the UK to 69% in the United States, and the prevalence of drivers who had read or sent text or e-mail messages while driving at least once in the past 30 days ranged from 15% in Spain to 31% in Portugal and the United States. Lessons learned from successful road safety efforts aimed at reducing other risky driving behaviors, such as seat belt nonuse and alcohol-impaired driving, could be helpful to the United States and other countries in addressing this issue (*2,3*). Strategies such as legislation combined with high-visibility enforcement and public education campaigns deserve further research to determine their effectiveness in reducing mobile device use while driving. Additionally, the role of emerging vehicle and mobile communication technologies in reducing distracted driving–related crashes should be explored.

HealthStyles and EuroPNStyles are online surveys designed by Porter Novelli (Washington, DC), a worldwide social marketing and public relations firm, and conducted among persons aged ≥18 years to examine health-related attitudes and behaviors. The HealthStyles data analyzed in this study were collected in the 2011 fall HealthStyles survey, conducted in the United States during September 30–October 5, 2011. The fall HealthStyles survey was sent to a random sample of panelists who had completed the 2011 spring HealthStyles survey. The spring HealthStyles survey was drawn from a panel containing 50,000 persons randomly selected through probability-based sampling to be representative of the noninstitutionalized U.S. civilian population; 14,598 panelists were selected to participate in the spring HealthStyles survey, and 8,110 panelists completed the survey (response rate: 56%). The fall HealthStyles survey was sent to 5,315 of the persons who had completed the spring HealthStyles survey; 3,696 (70%) completed the fall HealthStyles survey. Respondents who completed the survey received reward points (worth approximately $10) and were eligible to win a prize through a monthly sweepstakes (prizes generally were worth less than $500). HealthStyles survey data were weighted to match U.S. Current Population Survey proportions for the following nine characteristics: sex, age, annual household income, race/ethnicity, household size, education, U.S. Census region, metro status (i.e., residence in a metropolitan statistical area [MSA] versus a non-MSA), and prior Internet access.

The EuroPNStyles survey was conducted in July 2011 in Belgium, France, Germany, the Netherlands, Portugal, Spain,

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and the UK. The sample was randomly drawn from Synovate's Global Opinion Panel, recruited via Synovate partnerships with select websites, portals, and Internet service providers in Belgium, France, Germany, the Netherlands, Spain, and the UK. In Portugal, the sample was randomly drawn from the Global Market Insite's Panel. Panelists were selected to match each country's census proportions for age and sex, and quotas were set to reach 1,700 adults in all countries except for Spain and Portugal, where quotas were set to 850 adults. The survey's response rate in 2011 was 34%, with 10,338 persons completing the survey. Respondents received reward points for completing the survey, and the final data were weighted by age and sex to match each country's census proportions.

In both surveys, respondents were asked if they had driven in the past 30 days. If they had, respondents were then asked, "In the past 30 days, how often have you talked on your cell phone while you were driving?" and "In the past 30 days, how often have you read or sent a text message or e-mail while you were driving?" Response choices were "never," "just once," "rarely," "fairly often," and "regularly." Weighted percentages and corresponding 95% confidence intervals (CIs) for those who had talked on their cell phone while driving at least once (defined as those who responded "regularly," "fairly often," "rarely," or "just once") and for those who "never" talked on their cell phone while driving were calculated by country, age group, and sex. Similar percentages were calculated for reading or sending text or e-mail messages while driving. Additionally, weighted percentages of those who engaged in these behaviors "regularly" or "fairly often" were calculated and were included as a subset of those who engaged in these behaviors at least once in the past 30 days (Figures 1 and 2).

What is already known on this topic?

Road traffic crashes are a global public health problem, contributing to an estimated 1.3 million deaths annually, and mobile device use while driving has become an emerging concern.

What is added by this report?

In 2011, online surveys of drivers aged 18–64 years revealed that the percentage of those who reported that they had talked on their cell phone while driving ranged from 21% in the United Kingdom to 69% in the United States, and the percentage of those who reported that they had read or sent text or e-mail messages while driving ranged from 15% in Spain to 31% in Portugal and the United States.

What are the implications for public health practice?

To address the problem of mobile device use while driving, countries could consider examining the use of road traffic injury prevention strategies (e.g., legislation combined with high-visibility enforcement by police officers) that have been successful in reducing the prevalence of other road safety risk factors (e.g., alcohol-impaired driving and seat belt nonuse). Additionally, the effectiveness of emerging vehicle and mobile communication technologies should be studied to assess their role in reducing crashes related to distracted driving.

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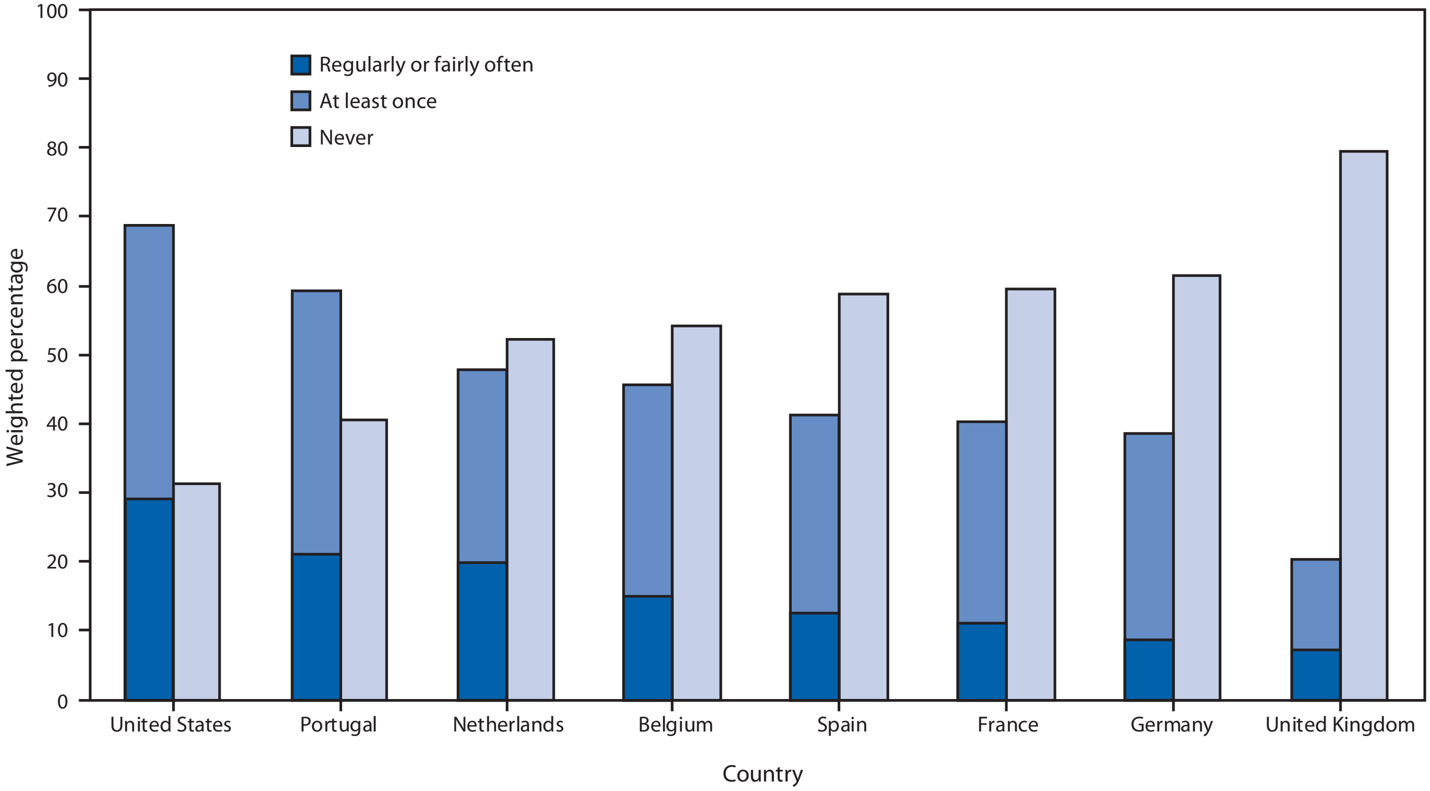
FIGURE 1. Weighted percentage of adults aged 18–64 years who reported that they had talked on their cell phone while driving regularly or fairly often, at least once, or never in the past 30 days,* by country — HealthStyles and EuroPNStyles, 2011



* Respondents were asked, "In the past 30 days, how often have you talked on your cell phone while you were driving?" Response choices were "never," "just once," "rarely," "fairly often," and "regularly." Percentages of those who engaged "at least once" were defined as those who responded "just once," "rarely," "fairly often," or "regularly." Percentages of those who responded "regularly" or "fairly often" are shown as a subset of "at least once."

In 2011, more than two thirds (68.7% [CI = 66.4%–71.0%]) of U.S. adult drivers aged 18–64 years reported they had talked on their cell phone while driving at least once in the past 30 days (Figure 1). In Europe, percentages ranged from 20.5% in the UK (CI = 17.7%–23.3%) to 59.4% in Portugal (CI = 54.6%–64.2%). Additionally, 31.2% (CI = 29.0%–33.5%) of U.S. drivers aged 18–64 years reported that they had read or sent text or e-mail messages while driving at least once in the past 30 days (Figure 2). In Europe, percentages ranged from 15.1% (CI = 12.3%–17.9%) in Spain to 31.3% (CI = 27.0%–35.5%) in Portugal.

In the United States, few differences by sex were observed (Figure 3). A significantly larger percentage of both men and women aged 25–44 years reported talking on a cell phone while driving compared with those aged 55–64 years, and a significantly larger percentage of men and women aged 18–34 years reported that they had read or sent text or e-mail messages while driving compared with those aged 45–64 years.

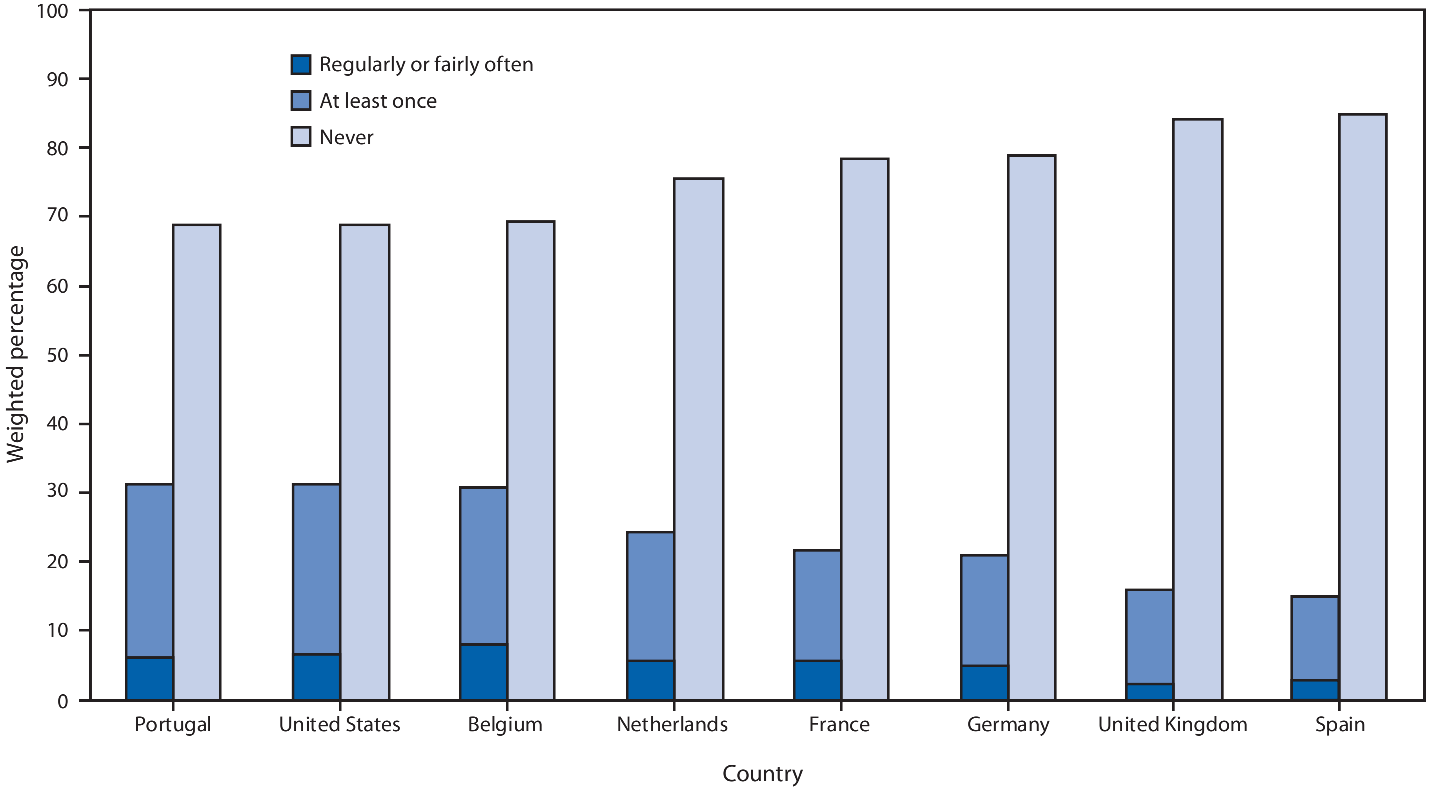
Reported by

Rebecca B. Naumann, MSPH, Ann M. Dellinger, PhD, Div of Unintentional Injury Prevention, National Center for Injury Prevention and Control, CDC. ***Corresponding contributor:*** *Rebecca B. Naumann, rnaumann@cdc.gov, 770-488-3922.*

Editorial Note

This report provides new information on the prevalence of self-reported mobile device use while driving in the United States and seven European countries. Although studies have estimated the prevalence of these behaviors in individual countries, question wording and methods vary, making comparisons difficult. This study used identical questions (with the exception of minor differences resulting from translation into multiple languages) and similar survey methods to examine differences in the prevalence of mobile device use while driving in the eight countries.

FIGURE 2. Weighted percentage of adults aged 18–64 years who reported that they had read or sent text or e-mail messages while driving regularly or fairly often, at least once, or never in the past 30 days,* by country, HealthStyles and EuroPNStyles, 2011



* Respondents were asked, "In the past 30 days, how often have you read or sent a text message or e-mail while you were driving?" Response choices were "never," "just once," "rarely," "fairly often," and "regularly." Percentages of those who engaged "at least once" were defined as those who responded "just once," "rarely," "fairly often," or "regularly." Percentages of those who responded "regularly" or "fairly often" are shown as a subset of "at least once."

The estimates of talking on a cell phone while driving in the United States are consistent with previous research (*4*–*6*). In 2010, the AAA Foundation for Traffic Safety conducted a nationally representative telephone survey and similarly found that 69% of drivers aged ≥16 years had used a cell phone while driving, and 24% had texted while driving in the past 30 days (*4*). Similar estimates also have been reported from surveys carried out by the National Highway Traffic Safety Administration and the Insurance Institute for Highway Safety (*5*,*6*). In Europe, recent national estimates of these behaviors are less common. However, a 2003 nationally representative survey in France found that 33% of adults aged ≥18 years reported using a cell phone while driving, whereas the study described in this report indicated that approximately 40% of persons aged 18–64 years in France talk on their cell phones while driving (*7*). The small difference might be explained by the increased use of cell phones over time and differences in the age groups surveyed.

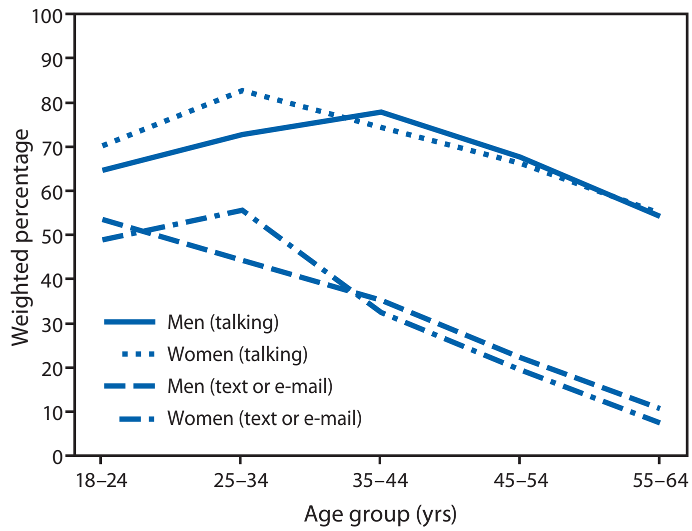
Several studies support the finding that a greater proportion of younger drivers talk and text while driving compared with older drivers (*5*–*7*). Strategies have been aimed specifically at teens and new drivers to try to reduce mobile device use while driving. As of February 2013, a total of 33 U.S. states and the District of Columbia had laws restricting at least some teens or new drivers from using electronic devices while driving. However, these laws alone have not yet proven effective at decreasing these behaviors among young drivers (*8*).

Additional strategies that have been applied to reduce mobile device use while driving in the United States and other countries include law enforcement efforts, communications campaigns, vehicle and cell phone technological advances, legislation, and education (*2*). Evaluation data for many of these strategies is both lacking and needed. A few studies have examined the effects of cell phone use laws on the general population and have indicated that laws might be effective in decreasing certain types of cell phone use (e.g., hand-held use), particularly when combined with high-visibility enforcement by police officers (*9*). However, these laws have not yet been shown to result in decreased crash rates.

The findings in this report are subject to several limitations. First, HealthStyles and EuroPNStyles survey respondents might not be representative of each of the eight country populations because the sampling approaches used were not completely random. However, comparisons of HealthStyles survey responses to those of the Behavioral Risk Factor Surveillance System, a survey which randomly selects persons through probability-based sampling, have shown similar results for various health behavior and disease–related questions in the United States (*10*). Second, although the HealthStyles sample was not dependent on computer and Internet access (because households that were selected to participate were provided with a laptop computer and access to the Internet if needed), this was not the case for the EuroPNStyles sample, which might affect the representativeness of the estimates in these countries. Third, the findings might be subject to nonresponse bias. If nonresponders were significantly different than responders in their mobile device use while driving behaviors or likelihood of reporting such behaviors, results would be biased. Fourth, the findings might be subject to social-desirability bias; because mobile device use while driving is illegal in many of these countries and often viewed unfavorably, respondents might underreport this behavior, potentially resulting in low estimates. Fifth, because the survey did not ask participants about cell phone ownership and cell phone capabilities (e.g., texting capabilities), some of those responding "never" to these questions might include those that do not have a cell phone or do not have texting capabilities. However, because this study covered persons aged 18–64 years in the United States and Europe, the percentage of those who do not own a cell phone would be expected to be small. Sixth, because prevalence estimates are based on self-reported estimates of mobile device use while driving in the past 30 days, estimates might be affected by recall bias. Finally, this study population was restricted to drivers aged 18–64 years; therefore, prevalence estimates are not representative of the entire driving population in these countries.

Mobile device use while driving is a prevalent behavior in the United States and several countries in Europe. This study revealed a large range in the prevalence of these behaviors, particularly for estimates of talking on a cell phone while driving. It is unlikely that differences in the prevalence of mobile device use while driving between countries are attributable to differing proportions of persons owning mobile devices in these countries, given that mobile markets in developed countries are similarly saturated. It is also unlikely that differences in cell phone use laws fully explain prevalence differences. While U.S. states differ in their cell phone use laws, nearly all European countries have hand-held bans in place, yet there is still a large variation in European estimates. Further research is needed to explore other factors that might help explain these differences, such as differences in strategies (e.g., enforcement and public education campaigns) applied to try to reduce these behaviors and cultural differences regarding the acceptability of these behaviors.

FIGURE 3. Weighted percentage of adults aged 18–64 years who reported that they had talked on their cell phone while driving at least once and read or sent text or e-mail messages while driving at least once in the past 30 days,* by sex and age group — United States, HealthStyles, 2011



* Respondents were asked, "In the past 30 days, how often have you talked on your cell phone while you were driving?" and "In the past 30 days, how often have you read or sent a text message or e-mail while you were driving?" Response choices were "never," "just once," "rarely," "fairly often," and "regularly." Percentages of those who engaged "at least once" were defined as those who responded "just once," "rarely," "fairly often," or "regularly."

Many countries have made substantial improvements in reducing other risky driving behaviors, such as seat belt nonuse and alcohol-impaired driving, through a combination of legislation, sustained and highly visible enforcement, and ongoing public education campaigns to increase awareness of the risks and penalties associated with disobeying traffic laws (*2,3*). Countries could consider exploring the effectiveness of applying similar approaches to the problem of mobile device use while driving. Additionally, the effectiveness of emerging vehicle and mobile communication technologies (e.g., advanced crash warning and driver-monitoring technologies or applications that temporarily disable mobile devices while a vehicle is in motion) should be studied to assess their role in reducing crashes related to distracted driving.

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HIV Infection Among Heterosexuals at Increased Risk — United States, 2010

In 2009, an estimated 27% of human immunodeficiency virus (HIV) infections in the United States were attributed to heterosexual contact (*1*). During 2006–2007, as part of the data collection for the National HIV Behavioral Surveillance System (NHBS), CDC surveyed heterosexuals who lived in urban areas with a high prevalence of acquired immunodeficiency syndrome (AIDS) and found an overall HIV prevalence of 2.0% and a prevalence of 2.3% among persons with annual household incomes at or below the poverty level and 2.8% among persons with less than a high school education (*2*). This report summarizes HIV testing results from the second cycle of NHBS, conducted in 2010, which focused on heterosexual persons with low socioeconomic status (SES) living in areas with high AIDS case rates. The results indicated that HIV prevalence was 2.3% overall and 1.1% among participants who did not report a previous positive HIV test result. Overall, 25.8% of participants had never been tested for HIV until the NHBS survey. Given the high HIV prevalence in this sample, additional research should be conducted to identify culturally appropriate interventions that overcome barriers to HIV testing and increase linkage to care for heterosexuals with low SES in urban areas with high prevalence of AIDS.

NHBS monitors HIV prevalence and HIV-associated behaviors among populations at high risk for acquiring HIV in 21 metropolitan statistical areas (MSAs) with high prevalence of AIDS. During 2010, NHBS collected data and conducted HIV testing among heterosexuals using respondent-driven sampling, a peer-referral sampling method. Because results from the pilot study in 2006–2007 demonstrated that persons with low SES* were more likely than persons with high SES to be infected, the 2010 cycle of NHBS focused on low SES populations (*2,3*).

Initial respondents selected from poverty areas† completed the survey and were asked to recruit up to five persons from their social networks. Their peers then completed the survey, and those who reported low SES and no injection drug use (IDU) in the preceding 12 months also were asked to recruit persons from their social networks. Men and women aged 18–60 years who resided in the MSA, had at least one sex partner of the opposite sex in the past 12 months, and were able to complete the survey in English or Spanish were eligible to participate. Using a standardized, anonymous questionnaire, participants were interviewed about sexual behaviors, drug use, HIV testing behaviors, and use of HIV prevention services.

All respondents were offered anonymous HIV testing, regardless of self-reported HIV infection status. HIV testing was performed by collecting blood or oral specimens for either conventional laboratory testing or point-of-contact rapid testing. A nonreactive rapid test was considered a negative test result. For persons with reactive rapid test results, final positive test results were determined based on supplemental Western blot or immunofluorescence assay. Participants received compensation for completing the survey and taking an HIV test and received incentives for recruiting their peers. Participants were included in this analysis if they reported low SES, completed the survey, consented to an HIV test, had a final positive or negative test result, and reported never engaging in male-male sex (for men) or IDU. The percentage of respondents who were HIV infected and did not report a previous positive HIV test result§ also was calculated, as a measure of undiagnosed HIV infection. Unweighted HIV prevalence estimates were calculated; although respondent-driven sampling can produce weighted estimates, the number of HIV infections in this analysis was too small to properly weight the estimates (*4*).

In 2010, a total of 12,478 persons were screened for participation in NHBS, of whom 11,114 (89.1%) were eligible. Of these, 8,473 (76.2%) met criteria for inclusion in this analysis.¶ Median age for participants was 33 years; 61.9% were aged 18–39 years. The majority (71.9%) of participants were black, 36.2% had less than a high school education, and 62.5% reported an annual household income of less than $10,000.

Among the 8,473 participants, 197 (2.3%) tested positive for HIV infection, and prevalence was similar for men (2.2%) and women (2.5%) (Table 1). HIV prevalence was 2.8% among blacks and 1.2% among Hispanics or Latinos. Prevalence was higher for participants who reported less than a high school education (3.1%), compared with those with a high school education (1.8%). Prevalence also was higher for those with an annual household income less than $10,000 (2.8%), compared

* Low SES was defined as having a household income (adjusted for household size) at or below the poverty level guidelines or no more than a high school education. Additional information available at http://aspe.hhs.gov/poverty.

† Poverty areas are defined by the U.S. Census Bureau as census tracts in which 20% or more of the residents live below the poverty threshold. Additional information available at http://www.census.gov/hhes/www/poverty/methods/definitions.html.

§ Persons not reporting a previous positive HIV test result included those who reported that their most recent HIV test result was negative, indeterminate, or unknown, or that they had never been tested.

¶ Persons were excluded from the analysis for the following reasons (categories are not mutually exclusive): 715 did not report a low SES, 1,339 reported IDU in the past 12 months, 753 men reported male-male sex, and 262 persons had no record of consent for the NHBS HIV testing, indeterminate or discordant NHBS HIV test results (i.e., they reported being HIV-positive but had a negative or indeterminate test result), or invalid NHBS HIV test results.

TABLE 1. Prevalence of HIV infection among heterosexuals at increased risk (N = 8,473),* by selected characteristics — National HIV Behavioral Surveillance System, United States, 2010

	No. tested		HIV prevalence		
Characteristic	**No.**	**(%)†**	**No.**	**(%)**	**(95% CI)**
Sex					
Female	4,722	(55.7)	116	(2.5)	(2.0–2.9)
Male	3,751	(44.3)	81	(2.2)	(1.7–2.7)
Age group (yrs)					
18–24	2,445	(28.9)	—§	—	—
25–29	1,161	(13.7)	16	(1.4)	(0.8–2.2)
30–39	1,635	(19.3)	33	(2.0)	(1.4–2.8)
40–49	2,029	(23.9)	95	(4.7)	(3.8–5.6)
50–60	1,203	(14.2)	49	(4.1)	(3.0–5.4)
Race/Ethnicity					
Black, non-Hispanic	6,090	(71.9)	170	(2.8)	(2.4–3.2)
Hispanic or Latino	1,782	(21.0)	22	(1.2)	(0.8–1.9)
White, non-Hispanic	187	(2.2)	—	—	—
Other	406	(4.8)	—	—	—
Highest level of education completed					
Less than high school education	3,065	(36.2)	94	(3.1)	(2.5–3.7)
High school education or equivalent	4,129	(48.7)	76	(1.8)	(1.5–2.3)
Some college or more	1,278	(15.1)	27	(2.1)	(1.4–3.1)
Annual household income					
$0–$9,999	5,296	(62.5)	148	(2.8)	(2.4–3.3)
$10,000–$19,999	2,032	(24.0)	37	(1.8)	(1.3–2.5)
≥$20,000	1,040	(12.3)	12	(1.2)	(0.6–2.0)
Poverty status					
Above poverty guidelines	942	(11.1)	16	(1.7)	(1.0–2.7)
At or below poverty guidelines	7,426	(87.6)	181	(2.4)	(2.1–2.8)
Employment status					
Employed full time or part time	2,424	(28.6)	19	(0.8)	(0.5–1.2)
Unemployed	3,718	(43.9)	85	(2.3)	(1.8–2.8)
Disabled	881	(10.4)	67	(7.6)	(6.0–9.6)
Student	633	(7.5)	—	—	—
Other¶	816	(9.6)	23	(2.8)	(1.7–4.1)
Region**					
Northeast	1,629	(19.2)	67	(4.1)	(3.2–5.1)
South	2,714	(32.0)	105	(3.9)	(3.2–4.7)
Midwest	1,453	(17.1)	7	(0.5)	(0.2–1.0)
West	2,234	(26.4)	9	(0.4)	(0.2–0.8)
Territories	443	(5.2)	9	(2.0)	(1.0–3.8)
Health coverage					
No coverage	3,856	(45.5)	55	(1.4)	(1.1–1.9)
Private health insurance or HMO	615	(7.3)	—	—	—
Government program	3,814	(45.0)	135	(3.5)	(3.0–4.1)
Other coverage (includes multiple coverage)	163	(1.9)	—	—	—
Exchange sex partner in past 12 months††					
Yes	1,410	(16.6)	52	(3.7)	(2.8–4.8)
No	7,063	(83.4)	145	(2.1)	(1.7–2.4)
Crack cocaine use in past 12 months					
Yes	1,007	(11.9)	63	(6.3)	(4.8–7.9)
No	7,466	(88.1)	134	(1.8)	(1.5–2.1)
Total	8,473	(100.0)	197	(2.3)	(2.0–2.7)

Abbreviations: HIV= human immunodeficiency virus; CI = confidence interval; HMO = health maintenance organization.

* Increased risk for HIV was defined as having low socioeconomic status (a household income below U.S. Department of Health and Human Services poverty guidelines [adjusted for household size] or a high school education or less). The analysis excluded persons who ever injected drugs and men who ever had sex with men.

† Totals might not add to 100% because of missing data.

§ Data suppressed because the number or numerator was five or fewer.

¶ Includes homemaker and retired.

** The U.S. Census regions in which the 21 metropolitan statistical areas of the National HIV Behavioral Surveillance System are located. The Northeast region consists of Boston, Massachusetts; Nassau-Suffolk Counties, New York; New York, New York; Newark, New Jersey; and Philadelphia, Pennsylvania. The South region consists of Atlanta, Georgia; Baltimore, Maryland; Dallas, Texas; Houston, Texas; Miami, Florida; New Orleans, Louisiana; and Washington, District of Columbia. The Midwest region consists of Chicago, Illinois; Detroit, Michigan; and St. Louis, Missouri. The West region consists of Denver, Colorado; Los Angeles, California; San Diego, California; San Francisco, California; and Seattle, Washington. The Territories consists of San Juan, Puerto Rico.

†† An exchange sex partner was defined as someone the participant gave things such as money or drugs to in exchange for sex or someone who gave the participant things such as money or drugs in exchange for sex.

What is already known on this topic?

An estimated 27% of prevalent human immunodeficiency virus (HIV) infections in the United States are attributed to heterosexual contact. Heterosexuals with a low socioeconomic status (SES) are disproportionately more likely to be infected with HIV.

What is added by this report?

Low-SES heterosexuals in metropolitan statistical areas (MSAs) with a high acquired immunodeficiency syndrome (AIDS) prevalence were recruited by the National HIV Behavioral Surveillance System (NHBS) for interviews and HIV testing. Of 8,473 persons tested, 197 (2.3%) were infected with HIV, with the highest prevalence of infection occurring among blacks, persons reporting crack cocaine use or exchange sex, those with low levels of education or income, and persons living in participating MSAs in the Northeast or South. Overall, 25.8% of participants had never been tested previously for HIV. Among participants who tested positive during the survey but did not report a previous positive HIV test, 36 (43.9%) said they had never had an HIV test before NHBS.

What are the implications for public health practice?

Efforts to prevent HIV among heterosexuals that include encouraging HIV testing among persons living in low SES communities in urban areas with high prevalence of AIDS are likely to have the greatest potential impact. It is particularly important to increase HIV testing and linkage to care among the heterosexual populations with the highest prevalence of HIV: blacks, persons who use crack cocaine or engage in exchange sex, and persons with low levels of income and education. Participating MSAs, particularly in the Northeast and South, are most likely to benefit from focused interventions among low-SES heterosexuals.

with those with an income of $20,000 or more (1.2%) and for those reporting having an exchange sex partner** in the past 12 months (3.7%) versus those not reporting an exchange sex partner (2.1%). Prevalence also was higher for those reporting using crack cocaine in the past 12 months (6.3%) compared with those not reporting crack cocaine use (1.8%). Prevalence was highest among those living in participating MSAs in the Northeast (4.1%) and South (3.9%) regions of the United States.

A total of 108 of the 8,473 participants reported a previous positive HIV test result. Among the 8,365 participants who did not report a previous positive HIV test result, 89 (1.1%) were HIV infected (Table 2). Among blacks, 1.3% were HIV infected, and among Hispanics or Latinos, 0.7% were HIV infected. The percentage of HIV infected was higher for participants who reported being unemployed (1.1%) or disabled (and unemployed) (2.7%), compared with employed (0.4%). Although the proportion who were HIV infected was similar among persons who had visited a health-care provider in the past year (1.1%) and those who had not (0.9%), it was higher among those who reported never being tested for HIV (1.6%) compared with being tested within the past 12 months (0.5%). The percentage who were HIV infected was higher for those who reported having an exchange sex partner in the past 12 months (2.0%) compared with not (0.9%) and using crack cocaine use in the past 12 months (2.6%) compared with not (0.9%) (Table 2). Among the 8,365, a total of 2,187 (26.1%) had never been tested for HIV; 3,417 (40.8%) reported that their last HIV test was >12 months ago, and 2,736 (32.7%) had been tested for HIV in the past 12 months (Table 2).

Among 82 participants†† who tested positive during NHBS, knew the date of their most recent HIV test, but did not report a previous positive HIV test result, 36 (43.9%) reported never having had an HIV test until NHBS. An additional 14 (17.1%) had been tested >5 years before the interview (Figure).

Reported by

Isa J. Miles, ScD, Binh C. Le, MD, Cyprian Wejnert, PhD, Alexandra Oster, MD, Elizabeth DiNenno, PhD, Gabriela Paz-Bailey, MD, PhD, Div of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention, CDC. ***Corresponding contributor:*** *Isa Miles, imiles@cdc.gov, 404-639-6304.*

Editorial Note

The findings from this analysis indicate that HIV prevalence among a sample of low-SES heterosexuals residing in MSAs with high AIDS prevalence was 2.3% overall and 1.1% among those who did not report a previous positive HIV test result. The overall 2.3% HIV prevalence among survey participants is approximately five times the 0.45% estimated for all persons aged ≥13 years in the United States (*1*). HIV prevalence was high among participants reporting exchange sex and crack cocaine use, those with less than a high school education, and those unemployed or disabled. These findings suggest the need for both behavioral and structural (*5*) HIV prevention interventions for these populations. Additional efforts should address reducing health inequities, particularly among African Americans and Hispanics or Latinos, two populations that comprised 91.7% of the NHBS participants.

Among the 1.1% who were infected with HIV but did not report a previous positive HIV test, 43.9% reported that they had never been tested for HIV infection until participating in NHBS. A key step to reducing the number of new HIV infections in the United States, as indicated in the National

** An exchange sex partner was defined as someone the participant gave things such as money or drugs to in exchange for sex or someone who gave the participant things such as money or drugs in exchange for sex.

†† Excludes seven participants who reported that their most recent HIV test was >12 months before the interview but did not report the year of that test.

TABLE 2. Prevalence of HIV infection among heterosexuals at increased risk* who did not report a previous positive HIV test result (n = 8,365), by selected characteristics — National HIV Behavioral Surveillance System, United States, 2010

		HIV prevalence		
Characteristic	**No. tested**	**No.**	**(%)**	**(95% CI)**
Sex				
Female	4,655	49	(1.1)	(0.8–1.4)
Male	3,710	40	(1.1)	(0.8–1.5)
Age group (yrs)				
18–24	2,443	—†	—	—
25–29	1,155	10	(0.9)	(0.4–1.6)
30–39	1,618	16	(1.0)	(0.6–1.6)
40–49	1,972	38	(1.9)	(1.4–2.6)
50–60	1,177	23	(2.0)	(1.2–2.9)
Race/Ethnicity				
Black, non-Hispanic	5,995	75	(1.3)	(1.0–1.6)
Hispanic or Latino	1,772	12	(0.7)	(0.4–1.2)
White, non-Hispanic	187	—	—	—
Other	403	—	—	—
Highest level of education				
Less than high school education	3,012	41	(1.4)	(1.0–1.8)
High school education or equivalent	4,087	34	(0.8)	(0.6–1.2)
Some college or more	1,265	14	(1.1)	(0.6–1.8)
Annual household income				
$0–$9,999	5,213	65	(1.2)	(1.0–1.6)
$10,000–$19,999	2,015	20	(1.0)	(0.6–1.5)
≥$20,000	1,032	—	—	—
Employment status				
Employed full time or part time	2,414	9	(0.4)	(0.2–0.7)
Unemployed	3,672	39	(1.1)	(0.8–1.4)
Disabled	837	23	(2.7)	(1.8–4.1)
Student	630	—	—	—
Other§	811	18	(2.2)	(1.3–3.5)
Region¶				
Northeast	1,591	29	(1.8)	(1.2–2.6)
South	2,649	40	(1.5)	(1.1–2.1)
Midwest	1,453	7	(0.5)	(0.2–1.0)
West	2,229	—	—	—
Territories	443	9	(2.0)	(1.0–3.8)
Health coverage				
No coverage	3,827	26	(0.7)	(0.4–1.0)
Private health insurance or HMO	615	—	(0.8)	(0.3–1.9)
Government program	3,736	57	(1.5)	(1.2–2.0)
Other coverage (includes multiple coverage)	162	—	—	—
Visited health-care provider**				
Yes	5,692	64	(1.1)	(0.9–1.4)
No	2,669	25	(0.9)	(0.6–1.4)
Had an STD diagnosis††				
Yes	839	9	(1.1)	(0.5–2.0)
No	7,526	80	(1.1)	(0.8–1.3)
Previous HIV test				
Never tested	2,187	36	(1.6)	(1.2–2.3)
>12 months ago	3,417	37	(1.1)	(0.8–1.5)
≤12 months ago	2,736	15	(0.5)	(0.3–0.9)
Exchange sex partner in past 12 months§§				
Yes	1,386	28	(2.0)	(1.4–2.9)
No	6,979	61	(0.9)	(0.7–1.1)
Crack cocaine use in past 12 months				
Yes	969	25	(2.6)	(1.7–3.8)
No	7,396	64	(0.9)	(0.7–1.1)
Total	**8365**	**89**	**(1.1)**	**(0.9–1.3)**

Abbreviations: HIV = human immunodeficiency virus; CI = confidence interval; HMO = health maintenance organization; STD = sexually transmitted disease.

* Increased risk for HIV was defined as having low socioeconomic status (a household income below U.S. Department of Health and Human Services poverty guidelines [adjusted for household size] or a high school education or less). The analysis excluded persons who ever injected drugs and men who ever had sex with men.

† Data suppressed because the number or numerator was five or fewer.

§ Includes homemaker and retired.

¶ The U.S. Census regions in which the 21 metropolitan statistical areas of the National HIV Behavioral Surveillance System are located. The Northeast region consists of Boston, Massachusetts; Nassau-Suffolk Counties, New York; New York, New York; Newark, New Jersey; and Philadelphia, Pennsylvania. The South region consists of Atlanta, Georgia; Baltimore, Maryland; Dallas, Texas; Houston, Texas; Miami, Florida; New Orleans, Louisiana; and Washington, District of Columbia. The Midwest region consists of Chicago, Illinois; Detroit, Michigan; and St. Louis, Missouri. The West region consists of Denver, Colorado; Los Angeles, California; San Diego, California; San Francisco, California; and Seattle, Washington. The Territories consists of San Juan, Puerto Rico.

** Visited a doctor, nurse, or other health-care provider in the past 12 months.

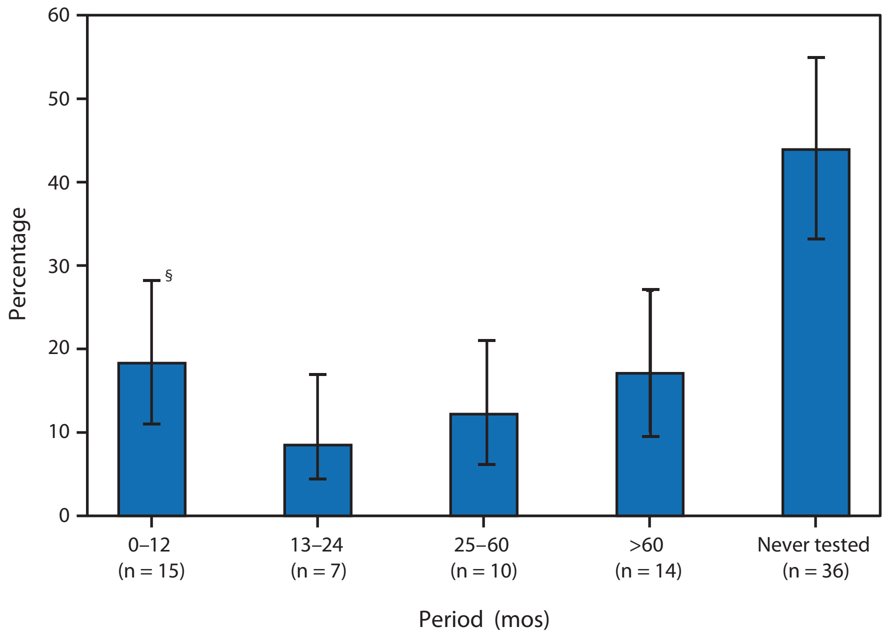
†† Participant self-reported diagnosis by a health-care provider of any STD in 12 months preceding interview.

§§ An exchange sex partner was defined as someone the participant gave things like money or drugs to in exchange for sex or someone who gave the participant things like money or drugs in exchange for sex.

HIV/AIDS Strategy (*6*), is to increase the percentage of persons living with HIV who know their serostatus through HIV testing. Persons aware of their HIV infection often take steps to reduce their risk behaviors substantially and can be referred for treatment and care, which can reduce HIV transmission (*7*). Overall, among participants in this study, 25.8% had never been tested for HIV, underscoring the need for increased HIV testing and linkage to care for low-SES heterosexuals living in urban areas with a high prevalence of AIDS. CDC currently supports an expanded testing program to increase HIV testing among populations disproportionately affected by HIV in 30 health jurisdictions, including the 21 NHBS MSAs. In the first 3 years of this program, 2.8 million tests were conducted, and approximately 18,000 persons were newly diagnosed with HIV infection (*8*).

The findings in this report are subject to at least three limitations. First, some participants might not have accurately reported their HIV risk behaviors or previous HIV test results

FIGURE. Period since most recent HIV test among HIV-infected heterosexuals at increased risk* who did not report a previous positive HIV test result (n = 82†) — National HIV Behavioral Surveillance System, United States, 2010



Abbreviation: HIV = human immunodeficiency virus.
* Increased risk for HIV was defined as having low socioeconomic status (a household income below U.S. Department of Health and Human Services poverty guidelines [adjusted for household size] or a high school education or less). The analysis excluded persons who ever injected drugs and men who ever had sex with men.
† Among those reporting the date since their most recent HIV test. Excluded were seven participants who reported that their most recent HIV test was >12 months before the interview but did not report the year of that test.
§ 95% confidence interval.

to interviewers, and results might be affected by social desirability bias. Second, sampling was limited to men and women who live in urban areas with a high prevalence of AIDS, and analyses were limited to those with low SES; findings might not be generalizable to other heterosexual groups. Finally, because of high levels of HIV stigma, poverty, and homelessness in this population, standard sampling methods were not considered practical; the data were not weighted to account for the complexities or potential biases of network-based sampling, and statistical tests were not conducted. Therefore, differences between groups should be interpreted with caution.

CDC and its partners are pursuing a high-impact prevention approach§§ to advance the goals of the National HIV/AIDS Strategy and maximize the effectiveness of current HIV prevention methods. This approach focuses on implementing prevention strategies that have shown the greatest potential to reduce new infections on a scale large enough to yield the greatest impact in populations and geographic areas with the greatest burden of disease. The high level of HIV infection observed in NHBS among low-SES heterosexuals living in MSAs with high AIDS prevalence is a serious public health concern. Efforts to 1) reduce stigma and make HIV testing accessible, affordable, and culturally acceptable (*9*); 2) improve linkage to HIV care and treatment; and 3) implement interventions that address behavioral and structural factors that place low-SES heterosexuals at higher risk for contracting HIV infection (*6,9*) could lead to reductions in HIV incidence and health inequities to achieve the goals of the National HIV/AIDS Strategy.

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§§ Additional information available at http://www.cdc.gov/nchhstp/newsroom/hivfactsheets/future/high-impact-prevention.htm.

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Eligibility and Enrollment in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) — 27 States and New York City, 2007–2008

The national Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides nutrition education, growth monitoring, breastfeeding promotion and support, and food to low-income pregnant or postpartum women, infants, and children aged <5 years. Several studies have linked WIC services with improved maternal and infant health outcomes (*1–3*). Most population-based studies have lacked information needed to identify eligible women who are not receiving WIC services and might be at risk for poor health outcomes. This report uses multistate, population-based 2007–2008 survey data from CDC's Pregnancy Risk Assessment Monitoring System (PRAMS) and California's Maternal and Infant Health Assessment (MIHA) to estimate how many women were eligible but not enrolled in WIC during pregnancy and to describe their characteristics and their prevalence of markers of risk for poor maternal or infant health outcomes (*4–6*). Approximately 17% of all women surveyed were eligible but not enrolled in WIC during pregnancy. The proportion of women eligible for WIC and WIC participation rates varied by state. WIC participants had higher prevalences of markers of risk for poor maternal or infant health outcomes than eligible nonparticipants, but both groups had higher prevalences of risk markers than ineligible women, suggesting that many eligible women and their children might benefit from WIC services. The results of this analysis can help identify the scope of WIC outreach needed to include more eligible nonparticipants in WIC and whom to target.

This study's sample included 71,267 women who participated in CDC's PRAMS survey in 26 states and New York City, and 6,435 women who participated in California's MIHA during 2007 or 2008 (Table 1). The two separate surveillance systems, PRAMS and MIHA, conduct annual, population-based mail surveys of women with recent live births sampled from birth certificates, with telephone follow-up of nonrespondents. The surveys used in this study include many similar questions, use similar methods (*7*), and have response rates of at least 65%.

Women reporting WIC participation at any time during their most recent pregnancies were classified as WIC participants. WIC eligibility requires a household income ≤185% of the federal poverty level (FPL)* or participation in another program (e.g., Medicaid) with similar income criteria. WIC nonparticipants were considered eligible if they reported incomes ≤185% FPL in the survey or if the birth certificate indicated Medicaid payment for prenatal care or delivery. Nonparticipants in WIC or Medicaid with incomes >185% FPL were considered ineligible. Women with missing information on WIC enrollment, insurance, or income (n = 1,653) were excluded, yielding a final sample of 76,049 women, which is representative of a total of 4,023,136 live births to resident women in these states, approximately half of all births in the United States during 2007–2008.

WIC participants and eligible nonparticipants as a proportion of all women delivering a live infant and as a percentage of all eligible women delivering a live birth were examined overall, then in each state. In the overall sample, WIC participants, eligible nonparticipants, and ineligible women were then compared on social characteristics important for targeting programs (e.g., race/ethnicity and language) or for assessing potential need for WIC services, as indicated by well-documented markers of risk for adverse maternal or infant health outcomes (*4–6*) (Table 2). Markers of risk included 1) having less than a high school education or being aged <18 years, 2) having delivered four or more live infants, 3) being unmarried at time of delivery, 4) being poor (income ≤100% FPL), 5) having Medicaid or no health-care coverage before pregnancy, 6) having no prenatal care in the first or second trimester, 7) having an unintended pregnancy, 8) being either underweight or obese before pregnancy, 9) smoking before pregnancy, and 10) having a history of delivering an infant preterm (before 37 weeks completed gestation) or of low birth weight (<2,500 g) (*4,5*). Finally, the percentage of women in each group with one, two, three, or four or more of the risk markers was examined. Prenatal health-care coverage was not included in the sum of the risk markers because it was used to define the WIC groups (Table 2). All estimated counts, percentages, and 95% confidence intervals were weighted to represent all live births in the participating states using statistical survey procedures that account for complex sample design.

Among all women surveyed, 46% were WIC participants, approximately 17% were classified as eligible nonparticipants (Table 1), and 37% were classified as ineligible (Table 2). Variation by state was evident in the percentage of all women delivering a live infant who were enrolled in WIC during pregnancy, from a low of 28% in Utah to a high of 57% in Oklahoma, and in the percentage of all women classified as

* FPL for a family of four was $20,650 in 2007 and $21,200 in 2008, and 185% of FPL was $38,203 in 2007 and $39,220 in 2008. Additional information on WIC eligibility requirements is available at http://www.fns.usda.gov/wic. Additional information on the FPL is available at http://aspe.hhs.gov/poverty/figures-fed-reg.cfm.

TABLE 1. Eligibility and enrollment in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) in 27 states and New York City — Pregnancy Risk Assessment Monitoring System (PRAMS) and California Maternal and Infant Health Assessment (MIHA), 2007–2008

				WIC participants§					Eligible nonparticipants§				
					All women		Eligible women			All women		Eligible women	
State	Sample size*	Live births population†	WIC-eligible population†	No.	%	(95% CI)¶	%	(95% CI)¶	No.	%	(95% CI)¶	%	(95% CI)¶
Overall	**76,049**	**4,023,136**	**2,526,026**	**1,863,195**	**46.3**	**(45.8–46.9)**	**73.8**	**(73.1–74.4)**	**662,831**	**16.5**	**(16.1–16.9)**	**26.2**	**(25.6–26.9)**
Alaska	2,764	21,528	14,998	10,386	48.2	(45.9–50.6)	69.3	(66.6–71.9)	4,612	21.4	(19.4–23.4)	30.7	(28.1–33.4)
Arkansas	3,491	75,415	56,914	42,762	56.7	(54.5–58.9)	75.1	(72.8–77.4)	14,152	18.8	(16.9–20.6)	24.9	(22.6–27.2)
California**	6,272	934,463	604,330	503,376	53.9	(52.7–55.0)	83.3	(82.1–84.5)	100,954	10.8	(10.0 –11.6)	16.7	(15.5–17.9)
Colorado	4,036	135,344	76,100	48,300	35.7	(33.5–37.8)	63.5	(60.6–66.4)	27,800	20.5	(18.8–22.3)	36.5	(33.6–39.4)
Delaware	1,893	18,611	12,074	8,607	46.2	(43.9–48.5)	71.3	(68.6–73.9)	3,467	18.6	(16.8–20.5)	28.7	(26.1–31.4)
Georgia	1,750	278,292	205,092	147,067	52.8	(49.2–56.5)	71.7	(67.8–75.6)	58,024	20.9	(17.8–23.9)	28.3	(24.4–32.2)
Hawaii	3,386	36,763	24,746	15,926	43.3	(41.7–45.0)	64.4	(62.4–66.3)	8,820	24.0	(22.5–25.4)	35.6	(33.7–37.6)
Illinois	1,706	169,046	108,018	76,584	45.3	(42.7–47.9)	70.9	(68.0–73.8)	31,435	18.6	(16.6–20.6)	29.1	(26.2–32.0)
Maryland	3,271	135,195	74,503	55,041	40.7	(38.1–43.4)	73.9	(70.6–77.1)	19,462	14.4	(12.5–16.3)	26.1	(22.9–29.4)
Maine	2,238	26,127	16,290	10,578	40.5	(38.1–42.9)	64.9	(62.0–67.9)	5,712	21.9	(19.9–23.8)	35.1	(32.1–38.0)
Michigan	1,497	119,636	69,976	52,060	43.5	(40.7–46.3)	74.4	(71.0–77.8)	17,916	15.0	(12.9–17.1)	25.6	(22.2–29.0)
Minnesota	3,068	137,628	72,107	55,689	40.5	(38.5–42.4)	77.2	(74.9–79.5)	16,418	11.9	(10.6–13.2)	22.8	(20.5–25.1)
Missouri	1,371	76,871	51,144	36,080	46.9	(43.7–50.1)	70.5	(66.8–74.3)	15,063	19.6	(16.9–22.3)	29.5	(25.7–33.2)
North Carolina	3,005	249,912	163,375	117,399	47.0	(44.8–49.1)	71.9	(69.4–74.3)	45,976	18.4	(16.7–20.1)	28.1	(25.7–30.6)
Nebraska	3,140	49,990	29,220	19,007	38.0	(36.1–40.0)	65.0	(62.4–67.7)	10,214	20.4	(18.7–22.2)	35.0	(32.3–37.6)
New Jersey	3,003	204,664	103,236	72,368	35.4	(33.8–37.0)	70.1	(67.7–72.5)	30,868	15.1	(13.7–16.5)	29.9	(27.5–32.3)
New York	2,196	229,011	125,921	92,420	40.4	(37.7–43.0)	73.4	(70.1–76.6)	33,501	14.6	(12.7–16.5)	26.6	(23.4–29.9)
Ohio	2,938	281,565	176,193	119,690	42.5	(40.1–44.9)	67.9	(65.0–70.9)	56,502	20.1	(18.1–22.1)	32.1	(29.1–35.0)
Oklahoma	4,012	103,957	77,481	59,617	57.3	(54.8–59.9)	76.9	(74.4–79.5)	17,864	17.2	(15.2–19.2)	23.1	(20.5–25.6)
Oregon	3,434	93,597	60,053	43,829	46.8	(44.2–49.4)	73.0	(70.0–76.0)	16,224	17.3	(15.3–19.4)	27.0	(24.0–30.0)
Rhode Island	2,583	22,579	13,230	10,812	47.9	(45.8–50.0)	81.7	(79.4–84.0)	2,418	10.7	(9.3–12.1)	18.3	(16.0–20.6)
South Carolina	1,450	57,711	39,916	28,770	49.9	(45.7–54.0)	72.1	(67.4–76.7)	11,146	19.3	(15.9–22.7)	27.9	(23.3–32.6)
Utah	3,520	106,320	62,764	29,842	28.1	(26.6–29.6)	47.5	(45.3–49.8)	32,922	31.0	(29.3–32.7)	52.5	(50.2–54.7)
Washington	2,958	170,591	101,467	73,829	43.3	(41.1–45.4)	72.8	(70.1–75.4)	27,638	16.2	(14.4–18.0)	27.2	(24.6–29.9)
Wisconsin	2,028	135,494	77,409	52,349	38.6	(36.4–40.9)	67.6	(64.6–70.7)	25,060	18.5	(16.5–20.5)	32.4	(29.3–35.4)
West Virginia	1,744	18,926	14,025	10,832	57.2	(53.9–60.6)	77.2	(73.9–80.6)	3,193	16.9	(14.3–19.4)	22.8	(19.4–26.1)
Wyoming	1,849	15,436	9,426	5,549	35.9	(33.5–38.4)	58.9	(55.7–62.1)	3,878	25.1	(22.9–27.3)	41.1	(37.9–44.3)
New York City	1,446	118,462	86,020	64,429	54.4	(51.1–57.7)	74.9	(71.5–78.3)	21,592	18.2	(15.6–20.8)	25.1	(21.7–28.5)

* Unweighted number of women who participated in the PRAMS and MIHA surveys.
† Population counts weighted to population of live births represented by the survey, adjusting for the sample design and nonresponse.
§ WIC participants reported that they were on WIC during pregnancy in the survey; eligible nonparticipants did not report that they were on WIC during pregnancy, but reported household incomes ≤185% of the federal poverty level in the survey or the birth certificate indicated Medicaid paid for prenatal care or delivery.
¶ Percentages and 95% confidence intervals (CIs) weighted to adjust for the sample design and nonresponse.
** California data are from MIHA; data for the other states are from PRAMS.

WIC-eligible but who were not enrolled, from a low of 11% in Rhode Island to a high of 31% in Utah (Table 1). The proportion of all eligible women enrolled in WIC was approximately 74% overall, varying from a low of 48% in Utah to a high of 83% in California (Table 1).

Nearly one fifth (19%) of WIC participants were non-Hispanic blacks and 39% were Hispanics, compared with 14% and 21% of eligible nonparticipants and 5% and 7% of ineligible women, respectively (Table 2). Conversely, WIC participants included a lower proportion of non-Hispanic white women (35%) than was found among eligible nonparticipants (57%), or among ineligible women (76%). Approximately 25% of WIC participants completed the survey in Spanish, compared with 12% of eligible nonparticipants and <2% of ineligible women.

Overall, the risk characteristics of WIC participants and eligible nonparticipants differed from those of ineligible women (Table 2). WIC participants generally appeared to be at greater social and economic disadvantage, as measured by indicators of risk for delivering a preterm or low birth weight infant, than were eligible nonparticipants. WIC participants and eligible nonparticipants were more disadvantaged than ineligible women, as reflected by their low incomes and the proportion of women who had <12 years of education, were aged <18 years, had four or more live births, were unmarried, had Medicaid or no health-care coverage before pregnancy, or initiated prenatal care in the third trimester or not at all (Table 2). WIC participants and eligible nonparticipants also had higher prevalences of other health risks than ineligible women, as reflected, for example, by prepregnancy obesity,

TABLE 2. Characteristics of women in 27 states and New York City delivering live-born infants — Pregnancy Risk Assessment Monitoring System (PRAMS) and California Maternal and Infant Health Assessment (MIHA), 2007–2008

	Total			WIC participant§			Eligible nonparticipant§			Ineligible for WIC§		
Characteristic	**No.***	**%†**	**(95% CI)†**	**No.***	**%†**	**(95% CI)†**	**No.***	**%†**	**(95% CI)†**	**No.***	**%†**	**(95% CI)†**
Total	**76,049**	**100**	**(100–100)**	**35,953**	**46.3**	**(45.8–46.9)**	**13,680**	**16.5**	**(16.1–16.9)**	**26,416**	**37.2**	**(36.7–37.7)**
Race/Ethnicity												
All non-Hispanic	61,244	75.6	(75.2–76.0)	25,566	60.8	(60.0–61.5)	11,208	79.1	(77.9–80.2)	24,470	92.6	(92.1–93.1)
White	38,464	54.2	(53.7–54.7)	12,812	35.4	(34.6–36.1)	6,962	56.9	(55.5–58.2)	18,690	76.4	(75.6–77.1)
Black	11,596	12.7	(12.3–13.0)	7,844	18.8	(18.2–19.5)	2,136	13.8	(12.8–14.8)	1,616	4.6	(4.2–4.9)
Asian/Pacific Islander	6,420	6.4	(6.1–6.6)	1,982	3.7	(3.4–4.0)	1,211	5.8	(5.2–6.4)	3,227	9.9	(9.4–10.5)
American Indian/ Alaska Native	3,041	1.0	(0.9–1.0)	2,070	1.4	(1.3–1.6)	562	1.0	(0.8–1.2)	409	0.4	(0.3–0.5)
Other/Mixed	1,723	1.7	(1.5–1.9)	858	1.8	(1.5–2.0)	337	2.0	(1.5–2.4)	528	1.5	(1.2–1.7)
Hispanic	13,819	24.4	(24.0–24.8)	9,958	39.2	(38.5–40.0)	2,314	20.9	(19.8–22.1)	1,547	7.4	(6.9–7.9)
White	10,425	20.3	(19.9–20.7)	7,537	32.7	(32.0–33.4)	1,677	16.9	(15.8–18.0)	1,211	6.4	(5.9–6.8)
Black	329	0.5	(0.4–0.6)	246	0.9	(0.7–1.0)	43	0.4	(0.2–0.5)	40	0.2	(0.1–0.2)
Other	3,065	3.6	(3.4–3.8)	2,175	5.8	(5.4–6.2)	594	3.7	(3.2–4.3)	296	0.9	(0.7–1.0)
Survey language												
English	68,387	85.9	(85.5–86.3)	29,802	75.1	(74.4–75.8)	12,436	88.0	(87.1–88.9)	24,149	98.4	(98.2–98.6)
Spanish	7,659	14.1	(13.7–14.5)	6,151	24.9	(24.2–25.6)	1,241	12.0	(11.1–12.9)	267	1.6	(1.4–1.8)
Education (yrs)												
0–11	14,541	20.4	(20.0–20.8)	11,458	35.3	(34.6–36.0)	2,664	20.8	(19.6–22.0)	419	1.7	(1.5–2.0)
12	21,628	28.0	(27.5–28.5)	13,732	38.3	(37.5–39.1)	4,626	34.8	(33.5–36.2)	3,270	12.2	(11.6–12.8)
≥13	38,718	51.7	(51.1–52.2)	10,133	26.4	(25.7–27.1)	6,164	44.3	(42.9–45.7)	22,421	86.1	(85.5–86.7)
Age group (yrs)												
<18	2,537	3.1	(2.8–3.3)	2,077	5.5	(5.1–5.9)	415	2.7	(2.3–3.2)	45	0.1	(0.1–0.1)
18–24	23,697	29.8	(29.2–30.3)	16,655	45.5	(44.6–46.3)	4,900	35.6	(34.3–37.0)	2,142	7.6	(7.1–8.1)
25–39	47,510	64.4	(63.9–65.0)	16,578	47.5	(46.6–48.3)	7,965	58.9	(57.5–60.3)	22,967	87.9	(87.3–88.5)
≥40	2,302	2.8	(2.6–2.9)	642	1.5	(1.3–1.7)	398	2.7	(2.3–3.1)	1,262	4.3	(4.0–4.7)
Total live births												
1st live birth	31,888	41.2	(40.6–41.7)	14,852	40.2	(39.4–41.1)	5,132	37.2	(35.8–38.6)	11,904	44.1	(43.2–45.0)
2nd–3rd birth	35,209	48.3	(47.7–48.8)	15,912	46.3	(45.4–47.1)	6,346	47.7	(46.3–49.1)	12,951	50.9	(50.0–51.8)
4th birth or greater	8,615	10.6	(10.2–10.9)	5,025	13.5	(12.9–14.1)	2,121	15.1	(14.1–16.1)	1,469	5.0	(4.6–5.3)
Not married at delivery	29,988	38.7	(38.1–39.2)	22,225	62.3	(61.5–63.1)	5,911	43.8	(42.4–45.2)	1,852	7.1	(6.6–7.6)
Income as % of FPL¶												
0–100% FPL	26,473	32.2	(31.6–32.7)	20,852	55.5	(54.7–56.4)	5,621	39.1	(37.7–40.5)	0	0.0	—
101%–185% FPL	14,584	18.6	(18.1–19.0)	8,313	23.6	(22.9–24.4)	6,271	46.2	(44.8–47.6)	0	0.0	—
≥185% FPL	29,780	41.8	(41.3–42.4)	2,563	7.6	(7.2–8.1)	801	6.7	(6.0–7.4)	26,416	100.0	—
Missing	5,212	7.4	(7.1–7.8)	4,225	13.2	(12.6–13.8)	987	8.0	(7.1–8.9)	0	0.0	—
Preconception health coverage												
Medicaid	12,957	17.7	(17.3–18.1)	10,423	31.0	(30.2–31.8)	2,302	17.4	(16.4–18.5)	232	1.4	(1.1–1.6)
Private/Other	40,098	53.0	(52.5–53.6)	8,930	23.2	(22.5–23.9)	6,051	42.5	(41.1–43.9)	25,117	94.6	(94.2–95.0)
Uninsured	22,630	29.3	(28.7–29.8)	16,340	45.8	(44.9–46.6)	5,267	40.1	(38.7–41.5)	1,023	4.0	(3.6–4.4)

See table footnotes on page 192.

smoking before pregnancy, and a previous low birth weight or preterm birth.

WIC participants and eligible nonparticipants appeared to be at risk for poor maternal or infant outcomes, based on markers of risk (Table 2). Approximately 91% of eligible nonparticipants had at least one risk marker, and 75% reported at least two markers, compared with 97% and 90% of WIC participants, respectively. Among eligible nonparticipants, 36% reported four or more risk markers, compared with 54% of WIC participants. WIC-ineligible women reported markedly fewer risk characteristics than women in the other two groups.

Reported by

Kristen S. Marchi, MPH, Paula A. Braveman, MD, Dept of Family and Community Medicine, Univ of California, San Francisco; Katie Martin, PhD, Michael Curtis, PhD, Maternal, Child and Adolescent Health Program, California Dept of Public Health. Tonya Stancil, PhD, Leslie Harrison, MPH, Div of Reproductive Health, CDC. ***Corresponding contributor:*** *Kristen S. Marchi, marchik@fcm.ucsf.edu, 415-476-8188.*

TABLE 2. (*Continued*) Characteristics of women in 27 states and New York City delivering live-born infants — Pregnancy Risk Assessment Monitoring System (PRAMS) and California Maternal and Infant Health Assessment (MIHA), 2007–2008

Characteristic	Total			WIC participant§			Eligible nonparticipant§			Ineligible for WIC§		
	No.*	%†	(95% CI)†	No.*	%†	(95% CI)†	No.*	%†	(95% CI)†	No.*	%†	(95% CI)†
Prenatal health-care coverage												
Medicaid/Medi-Cal	32,244	43.3	(42.7–43.8)	25,804	75.9	(75.1–76.6)	6,440	51.6	(50.2–53.1)	0	0.0	
Private/Other	36,545	53.0	(52.5–53.6)	6,357	20.1	(19.5–20.8)	5,161	40.8	(39.4–42.2)	25,027	98.2	(98.0–98.4)
Uninsured	2,906	3.7	(3.5–4.0)	1,429	4.0	(3.6–4.4)	907	7.6	(6.7–8.4)	570	1.8	(1.6–2.0)
Prenatal care initiation												
No prenatal care	1,016	1.8	(1.7–2.0)	524	2.3	(2.0–2.6)	358	2.7	(2.2–3.1)	134	0.9	(0.7–1.0)
1st trimester	58,684	82.3	(81.9–82.8)	25,519	76.0	(75.3–76.7)	9,639	75.2	(73.9–76.4)	23,526	93.1	(92.6–93.6)
2nd trimester	10,658	13.6	(13.3–14.0)	6,764	18.7	(18.0–19.4)	2,346	18.4	(17.3–19.5)	1,548	5.4	(5.0–5.8)
3rd trimester	1,812	2.2	(2.1–2.4)	1,111	3.0	(2.7–3.3)	524	3.8	(3.3–4.3)	177	0.6	(0.5–0.8)
Unintended pregnancy	31,752	42.4	(41.9–43.0)	19,300	55.8	(55.0–56.7)	6,738	51.1	(49.6–52.5)	5,714	22.1	(21.3 -22.9)
Prepregnancy BMI**												
Underweight (<18.5)	3,568	4.1	(3.8–4.3)	1,872	4.4	(4.0–4.7)	792	5.1	(4.5–5.7)	904	3.2	(2.9 -3.6)
Normal (18.5–24.9)	36,141	48.1	(47.6–48.7)	14,695	40.6	(39.7–41.4)	6,507	47.4	(45.9–48.8)	14,939	57.9	(57.0–58.8)
Overweight (25.0–29.9)	17,094	23.2	(22.7–23.7)	8,027	23.5	(22.8–24.2)	3,075	23.0	(21.8–24.2)	5,992	23.0	(22.2–23.7)
Obese (≥30)	14,662	18.0	(17.6–18.5)	8,009	21.0	(20.3–21.7)	2,499	17.8	(16.8–18.9)	4,154	14.4	(13.7–15.0)
Missing	4,584	6.6	(6.3–6.8)	3,350	10.6	(10.0–11.1)	807	6.7	(5.9–7.4)	427	1.5	(1.3–1.7)
Preconception smoker	17,207	21.2	(20.7–21.7)	10,612	27.5	(26.7–28.3)	3,614	25.1	(23.9–26.4)	2,981	11.8	(11.2–12.4)
Prior LBW or preterm birth††												
No previous live birth	31,888	42.7	(42.1–43.3)	14,852	41.7	(40.8–42.6)	5,132	38.7	(37.3–40.1)	11,904	45.7	(44.8–46.6)
No LBW or preterm birth	31,534	48.1	(47.5–48.6)	14,409	47.3	(46.4–48.1)	6,035	50.7	(49.3–52.1)	11,090	47.9	(47.0–48.8)
LBW and/or preterm birth	8,651	9.2	(8.9–9.5)	4,844	11.1	(10.5–11.6)	1,814	10.6	(9.7–11.4)	1,993	6.4	(5.9–6.8)
Markers of risk§§												
One or more	61,344	79.1	(78.7–79.5)	34,970	97.1	(96.8–97.4)	12,420	90.7	(90.0–91.5)	13,954	51.5	(50.6–52.4)
Two or more	48,016	61.2	(60.7–61.7)	32,470	90.3	(89.8–90.8)	10,277	75.1	(73.9–76.3)	5,269	18.9	(18.2–19.6)
Three or more	36,917	46.7	(46.1–47.2)	27,653	76.2	(75.5–76.9)	7,779	56.9	(55.5–58.3)	1,485	5.4	(5.0–5.8)
Four or more	25,404	31.2	(30.7–31.8)	20,044	54.0	(53.2–54.9)	5,073	36.0	(34.6–37.4)	287	0.8	(0.6–1.0)

Abbreviations: CI = confidence interval; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children; BMI = body mass index; LBW = low birth weight; FPL = federal poverty level.
* Unweighted number of women who participated in the PRAMS and MIHA surveys.
† Percentages and 95% CIs weighted to adjust for sample design and nonresponse.
§ WIC participants reported that they were on WIC during pregnancy in the survey; eligible nonparticipants did not report that they were on WIC during pregnancy, but reported household incomes ≤185% of the FPL in the survey or the birth certificate indicated Medicaid paid for prenatal care or delivery; nonparticipants in WIC or Medicaid with incomes >185% FPL were considered ineligible for WIC.
¶ Incomes ≤185% FPL are WIC-eligible.
** BMI calculated as (weight [kg] / height [m]^2) where values 0–18.49 = underweight, 18.5–24.9 = healthy weight, 25–29.9 = overweight, and ≥30 = obese.
†† Low birth weight = less than 5 pounds, 8 ounces (<2,500 g); preterm birth is before 37 weeks gestation.
§§ Markers of risk include either age <18 years or <12 years of education (composite variable); 4th live birth or greater; not married; poor; Medicaid or uninsured before pregnancy; unintended pregnancy; underweight or obese before pregnancy; prenatal smoking; and any history of prior poor birth outcome.

Editorial Note

The results of this analysis indicate that, although WIC covered most eligible women overall and in many states during 2007–2008, an estimated 662,800 eligible women were not enrolled in WIC in the 27 states examined. The proportion of eligible women who were enrolled in WIC varied widely by state. Overall, the findings indicate that WIC is enrolling high-risk women and reveal that most eligible nonparticipants also have social and economic characteristics that repeatedly have been linked to adverse maternal or infant health outcomes. In addition, WIC participants and eligible nonparticipants have higher rates of other health risks, such as prepregnancy obesity and previous poor birth outcomes, than ineligible women. Three quarters of eligible nonparticipants had two or more markers of risk; more than one third had four or more. Although WIC's services cannot address all relevant risks, promoting and supporting more adequate nutrition might improve some health outcomes among vulnerable women and their children during the critical periods of pregnancy and infancy, with potentially lifelong benefits (*8–10*). Referrals by WIC to outside services, such as prenatal care and smoking cessation programs, also could benefit women, infants and children in the long run.

The findings in this report are subject to at least four limitations. First, the study relied on unverified self-reports of income and WIC participation. Second, PRAMS and MIHA measure average income over 1 year, which might underestimate WIC eligibility. Third, health-care coverage can change during pregnancy, affecting the ability to determine eligibility for WIC. Finally, although survey response rates were at least 65%, differences might exist between the respondents and nonrespondents. This concern was mitigated through nonresponse

What is already known on this topic?

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides nutrition education, growth monitoring, breastfeeding promotion and support, and food to low-income pregnant or postpartum women, infants, and children aged <5 years. Several studies have linked WIC services with improved maternal and infant health.

What is added by this report?

Among women from 27 states and New York City who participated in a survey of mothers who had recently delivered a live infant during 2007–2008, 46% were WIC participants and approximately 17% were classified as eligible nonparticipants. WIC participants generally were at greater social and economic disadvantage than were eligible nonparticipants, as measured by indicators of risk for delivering a preterm or low birth weight infant, but both groups were more disadvantaged than ineligible women.

What are the implications for public health practice?

Efforts to expand outreach to eligible non-WIC participants could improve maternal and infant health outcomes among low-income pregnant or postpartum women, infants, and children aged <5 years. The results of this analysis can help identify the scope of WIC outreach needed and whom to target.

weighting of the survey data, by which differing weights were assigned to demographic groups with significantly different response rates.

The large size of the WIC-eligible population reflects levels of poverty (<100% FPL) and near-poverty (101%–185% FPL) around the time of pregnancy, confirming previous findings that many women giving birth in the United States are poor or near-poor (*7*). Given current economic conditions, it is possible that many women and infants continue to be socioeconomically vulnerable and hence in need of WIC services. These multistate findings suggest that expanded outreach to eligible nonparticipants should be considered. The information in this study can help identify the scope of WIC outreach needed and whom to target.

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Susan Egerter, PhD, Univ of California, San Francisco; Carina Saraiva, MPH, Maternal, Child and Adolescent Health Program, California Dept of Public Health. Brian Morrow, MA, Div of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

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Update: Severe Respiratory Illness Associated with a Novel Coronavirus — Worldwide, 2012–2013

On March 7, 2013, this report was posted as an MMWR *Early Release on the* MMWR *website (http://www.cdc.gov/mmwr).*

CDC continues to work closely with the World Health Organization (WHO) and other partners to better understand the public health risk posed by a novel coronavirus that was first reported to cause human infection in September 2012 (*1–3*). Genetic sequence analyses have shown that this new virus is different from any other known human coronaviruses, including the one that caused severe acute respiratory syndrome (SARS) (*2*). As of March 7, 2013, a total of 14 confirmed cases of novel coronavirus infection have been reported to WHO, with eight deaths (*4*). Illness onsets have occurred from April 2012 through February 2013 (*4,5*). To date, no cases have been reported in the United States.

Three of the confirmed cases of novel coronavirus infection were identified in the United Kingdom (UK) as part of a cluster within one family (*6*). The index patient in the cluster, a man aged 60 years with a history of recent travel to Pakistan and Saudi Arabia, developed respiratory illness on January 24, 2013, before returning to the UK on January 28 (*5,7,8*). He was hospitalized on January 31 with severe lower respiratory tract disease and has been receiving intensive care (*5,7,8*). Respiratory specimens from this patient taken on February 1 tested positive for influenza A (H1N1) virus and for novel coronavirus infection (*8*). The second patient was an adult male household member with an underlying medical condition who became ill on February 6, after contact with the index patient, and received intensive treatment but died with severe respiratory disease (*5,9*). This patient's underlying illness might have made him more susceptible to severe respiratory infection. The third patient is an adult female who developed a respiratory illness on February 5, following contact with the index patient after he was hospitalized (*5,10*). She did not require hospitalization and had recovered by February 19 (*5,6*). Only the index patient had traveled recently outside the UK. Based on their ongoing investigation of this cluster of illnesses, the UK Health Protection Agency has concluded that person-to-person transmission likely occurred in the UK within this family (*6*).

This recent cluster provides the first clear evidence of human-to-human transmission of this novel coronavirus, coinfection of this novel coronavirus with another pathogen (influenza A), and a case of mild illness associated with this novel coronavirus infection. In light of these developments, updated guidance has been posted on the CDC coronavirus website (http://www.cdc.gov/coronavirus/ncv). Persons who develop severe acute lower respiratory illness within 10 days after traveling from the Arabian Peninsula or neighboring countries* should continue to be evaluated according to current guidelines. Persons whose respiratory illness remains unexplained and who meet criteria for "patient under investigation" should be reported immediately to CDC through state and local health departments. Persons who develop severe acute lower respiratory illness of known etiology within 10 days after traveling from the Arabian Peninsula or neighboring countries but who do not respond to appropriate therapy may be considered for evaluation for novel coronavirus infection. In addition, persons who develop severe acute lower respiratory illness who are close contacts† of a symptomatic traveler who developed fever and acute respiratory illness within 10 days of traveling from the Arabian Peninsula or neighboring countries may be considered for evaluation for novel coronavirus infection. Testing of specimens for the novel coronavirus will be conducted at CDC.

Recommendations and guidance on case definitions, infection control (including use of personal protective equipment), case investigation, and specimen collection and shipment for testing, are available at the CDC coronavirus website. Additional information and potentially frequent updates will be posted on the CDC coronavirus website. State and local health departments with questions should contact the CDC Emergency Operations Center (770-488-7100).

Reported by

Div of Viral Diseases, National Center for Immunization and Respiratory Diseases; Brian Rha, MD, EIS Officer, CDC. ***Corresponding contributor:*** *Brian Rha, wif8@cdc.gov, 404-639-3972.*

* Countries considered to be on or neighboring the Arabian Peninsula include Bahrain, Iraq, Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Palestinian Territories, Qatar, Saudi Arabia, Syria, the United Arab Emirates, and Yemen.

† Defined as 1) any person who provided care for the patient, including a health-care worker or family member, or who had other similarly close physical contact, or 2) any person who stayed at the same place (e.g., lived with or visited) as the patient while the patient was ill.

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Announcement

Brain Injury Awareness Month — March 2013

March is Brain Injury Awareness Month. Through scientific research, programs, and education, CDC works to prevent traumatic brain injury (TBI) from all causes and ensure that TBI survivors receive optimal care.

A TBI, whether caused by a fall in the home or on a playground, a car crash, or by being struck by an object or another person, can disrupt the normal functions of the brain. TBIs, which range from mild concussions to severe, life-threatening injuries, can be prevented.

Research indicates that in the United States, 1) males have the highest rates of TBI; 2) the youngest children and older adults are at highest risk for sustaining fall-related TBIs; 3) adolescents and young adults (i.e., persons aged 15–24 years) have the highest rates of motor vehicle–related TBIs; and 4) adults aged ≥75 years have the highest rates of TBI-related hospitalization and are more likely to die from TBI (either TBI alone or along with other injuries or illnesses) than any other age group (*1*).

The burden of TBI can be reduced through primary prevention strategies and improvements in the health and quality of life for TBI survivors. CDC recommends integrating public health prevention and health-care delivery systems, including efficient, effective care and rehabilitation services to address the issue of TBI among at-risk populations. Additional information about TBI management is available at http://www.cdc.gov/traumaticbraininjury, information about preventing motor vehicle–related TBIs is available at http://www.cdc.gov/motorvehiclesafety, and information about preventing fall-related TBIs is available at http://www.cdc.gov/homeandrecreationalsafety/falls.

Reference

1. CDC. Traumatic brain injury in the United States: emergency department visits, hospitalizations, and deaths, 2002–2006. Atlanta, GA: US Department of Health and Human Services; CDC; 2010. Available at http://www.cdc.gov/traumaticbraininjury/pdf/blue_book.pdf.

Erratum

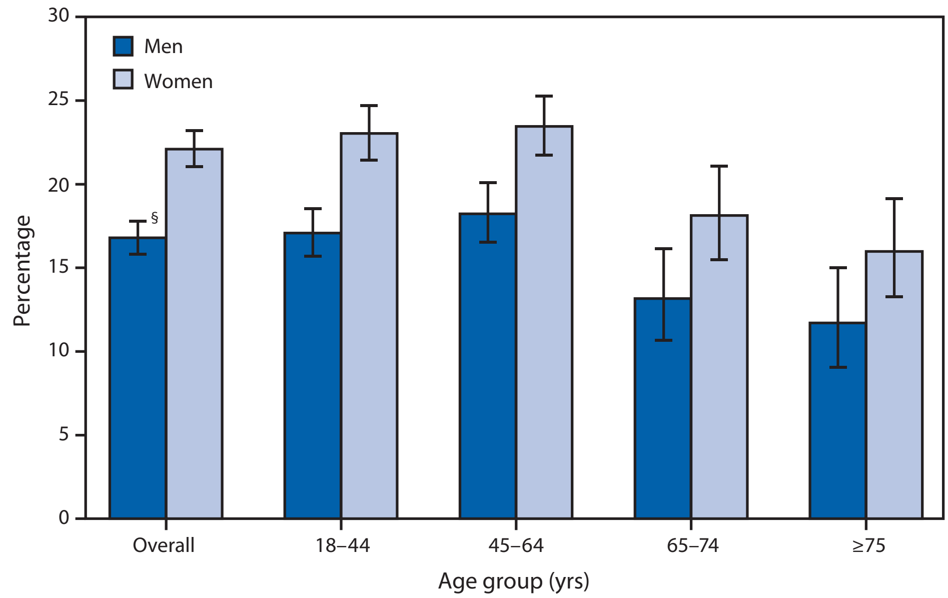
Vol. 62, No. 7

In "Notes from the Field: Zinc Deficiency Dermatitis in Cholestatic Extremely Premature Infant After a Nationwide Shortage of Injectable Zinc — Washington, DC, December 2012," an error occurred. On page 136, in the fifth paragraph, the third sentence should read, "Extremely premature infants require 400 ***µ*g/kg** per day because of negligible tissue stores of zinc, low albumin binding, increased catabolic state, and increased urinary zinc losses (*1*)."

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Percentage of Adults Aged ≥18 Years Who Often Felt Worried, Nervous, or Anxious,* by Sex and Age Group — National Health Interview Survey, United States, 2010–2011†



* Based on a survey question that asked respondents, "How often do you feel worried, nervous, or anxious? Would you say daily, weekly, monthly, a few times a year, or never?" Persons reporting daily or weekly feelings of worry, nervousness, or anxiety were categorized as often worried, nervous, or anxious. Unknowns were not included in the denominators when calculating percentages.

† Estimates are based on household interviews of a sample of the U.S. civilian, noninstitutionalized population.

§ 95% confidence interval.

During 2010–2011, women (22.1%) were more likely than men (16.8%) to often feel worried, nervous, or anxious. Among men, those aged 45–64 years were about as likely (18.2%) as men aged 18–44 years (17.1%) but more likely than men aged 65–74 years (13.2%) and ≥75 years (11.7%) to often have feelings of worry, nervousness, or anxiety. Women aged 18–44 years were about as likely (23.0%) as women aged 45–64 years (23.5%) but more likely than women aged 65–74 years (18.1%) and women aged ≥75 years (16.0%) to often feel worried, nervous, or anxious.

Source: National Health Interview Survey, 2010 Quality of Life and 2011 Functioning and Disability supplements. Data were colleccted from a subset of the adults randomly selected for the sample adult component of the NHIS questionnaire. Available at http://www.cdc.gov/nchs/nhis.htm.

Reported by: Debra Blackwell, PhD, debra.blackwell@cdc.hhs.gov, 301-458-4103; Tainya C. Clarke MS, MPH.

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Data presented by the Notifiable Disease Data Team and 122 Cities Mortality Data Team in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. Address all inquiries about the *MMWR* Series, including material to be considered for publication, to Editor, *MMWR* Series, Mailstop E-90, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333 or to *mmwrq@cdc.gov.*

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