

National Gay Men's HIV/AIDS Awareness Day — September 27, 2012

National Gay Men's HIV/AIDS Awareness Day is observed each year on September 27 to focus on the continuing effects of human immunodeficiency virus (HIV) infection and acquired immune deficiency syndrome (AIDS) on gay, bisexual, and other men who have sex with men (MSM) in the United States. By the end of 2009, an estimated 652,300 MSM, including 60,200 who were also injection drug users, were living with HIV infection, comprising 57% of persons living with HIV infection in the United States (1). MSM represent approximately 2% of the U.S. population (2); however, in 2010, MSM and MSM who were injection drug users accounted for 66% of all new HIV infections (3).

CDC supports a range of efforts to reduce HIV infection among MSM. These include HIV prevention services that reduce the risk for acquiring and transmitting HIV, increase diagnosis of HIV infection, and support the linkage of HIV-infected MSM to treatment and care. Additional information about CDC efforts to promote the health of MSM is available at <http://www.cdc.gov/hiv/risk/gender/msm>. Additional information about National Gay Men's HIV/AIDS Awareness Day is available at <http://www.cdc.gov/features/ngmhaad>.

References

1. CDC. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 U.S. dependent areas—2010. HIV surveillance supplemental report 2012;17(No. 3, part A).
2. Purcell DW, Johnson CH, Lansky A, et al. Estimating the population size of men who have sex with men in the United States to obtain HIV and syphilis rates. *Open AIDS J* 2012;6(Suppl 1:M6):98–107.
3. CDC. Estimated HIV incidence in the United States, 2007–2010. HIV surveillance supplemental report 2012;17(No. 4).

Estimated Percentages and Characteristics of Men Who Have Sex with Men and Use Injection Drugs — United States, 1999–2011

Male-to-male sex and illicit injection drug use are important transmission routes for human immunodeficiency virus (HIV) infection. Of all new HIV infections in 2010, 80% were among men, of which 78% were among men who have sex with men (MSM), 6% among male injection drug users (IDU), and 4% among men who have sex with men and inject drugs (MSM/IDU) (1). MSM/IDU might have different prevention needs from men who are either MSM or IDU, but not both. A combination of effective, scalable, and evidence-based approaches that address male-to-male sex and injection drug use behaviors might reduce HIV infections among MSM/IDU. To refine calculations of disease rates attributed to MSM and IDU (2,3) by accounting for MSM/IDU, CDC used data from 1999–2008 National Health and Nutrition Examination Survey (NHANES) to estimate the percentage and number of MSM/IDU in the general population. To further describe demographic similarities and differences of MSM/IDU identified by different surveillance systems, CDC also compared data from four HIV surveillance systems: the 2008 and 2009

INSIDE

- 763 Impact of a National Tobacco Education Campaign on Weekly Numbers of Quitline Calls and Website Visitors — United States, March 4–June 23, 2013
- 768 Assessing the Risks for Poliovirus Outbreaks in Polio-Free Countries — Africa, 2012–2013
- 773 Announcements
- 775 QuickStats

Continuing Education examination available at http://www.cdc.gov/mmwr/cme/conted_info.html#weekly.



National HIV Behavioral Surveillance System (NHBS), the 2011 National HIV Surveillance System (NHSS), and the 2007–2009 Medical Monitoring Project (MMP). Of males aged ≥ 18 years, MSM/IDU comprised an estimated 0.35% in NHANES, 7%–20% in NHBS, an estimated 4%–8% in NHSS, and 9% in MMP. Across surveillance systems, MSM/IDU accounted for 4%–12% of MSM and 11%–39% of male IDU. Risk reduction programs and interventions targeted toward male IDU populations might be more effective if they also incorporate messages about male-to-male sex.

Four national surveillance systems collect data on both male-to-male sex and injecting drug behaviors, though in differing ways (Table 1). NHANES collects data from the civilian general household population. NHBS collects data on persons at risk for HIV infection, using separate cycles for MSM and IDU. NHSS collects data on persons diagnosed with HIV infection and persons living with a diagnosis of HIV infection. MMP collects data on persons receiving medical care for HIV infection. With the exception of one data source, MSM/IDU were defined as adult males who ever had sex with a man and ever injected drugs; for the NHBS IDU cycle, MSM/IDU were defined as adult males who ever had sex with a man and injected drugs in the past 12 months (the latter being part of the NHBS IDU cycle eligibility criteria). For NHANES, data from 1999–2008 were aggregated and analyzed to obtain a robust MSM/IDU population percentage estimate, with response rates for males ranging from 69% to 72%. For other data sources, the most

recent data available were analyzed. For NHSS, data were adjusted for reporting delays and missing transmission category but not for incomplete reporting. The analysis was limited to males aged ≥ 18 years for comparability across data sources. Differences between groups should be interpreted with caution because statistical tests were not performed.

Of the 7,011 men, representing an estimated 71,111,352 men in the adult male population (NHANES), a weighted estimate of 0.35% ever had sex with a man and ever injected drugs, and thus were classified as MSM/IDU, corresponding to 248,890 MSM/IDU. MSM comprised 5% of all men, corresponding to approximately 3,555,568 MSM. MSM/IDU comprised 7% of MSM. Similarly, IDU comprised 3% of all men, corresponding to approximately 2,133,341 IDU. MSM/IDU comprised 11% of male IDU (Table 2). Data were too few to support stratification by age or race/ethnicity.

In 2008, of 9,903 MSM interviewed for the NHBS MSM cycle, 681 (7%) were MSM/IDU (Table 2). Overall, 38% of MSM/IDU were aged 18–34 years; 65% were white, 11% black/African American, and 16% Hispanic/Latino (Table 3). In 2009, of 7,374 IDU interviewed from the NHBS IDU cycle, 1,467 (20%) were also MSM and thus classified as MSM/IDU (Table 2). Overall, 20% of MSM/IDU were aged 18–34 years; 33% were white, 36% black/African American, and 26% Hispanic/Latino (Table 3).

For 2011, NHSS data indicate there were an estimated 1,416 men diagnosed with HIV whose infections were attributed to

The *MMWR* series of publications is published by the Center for Surveillance, Epidemiology, and Laboratory Services (proposed), Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services, Atlanta, GA 30333.

Suggested citation: Centers for Disease Control and Prevention. [Article title]. *MMWR* 2013;62:[inclusive page numbers].

Centers for Disease Control and Prevention

Thomas R. Frieden, MD, MPH, *Director*
 Harold W. Jaffe, MD, MA, *Associate Director for Science*
 Joanne Cono, MD, ScM, *Acting Director, Office of Science Quality*
 Chesley L. Richards, MD, MPH, *Deputy Director, Office of Public Health Scientific Services (proposed)*
 Pamela S. Diaz, MD, *Acting Director, Center for Surveillance, Epidemiology, and Laboratory Services (proposed)*

MMWR Editorial and Production Staff

Ronald L. Moolenaar, MD, MPH, *Editor, MMWR Series*

John S. Moran, MD, MPH, <i>Deputy Editor, MMWR Series</i>	Maureen A. Leahy, Julia C. Martinroe,
Teresa F. Rutledge, <i>Managing Editor, MMWR Series</i>	Stephen R. Spriggs, Terraye M. Starr
Douglas W. Weatherwax, <i>Lead Technical Writer-Editor</i>	<i>Visual Information Specialists</i>
Donald G. Meadows, MA, Jude C. Rutledge, <i>Writer-Editors</i>	Quang M. Doan, MBA, Phyllis H. King
Martha F. Boyd, <i>Lead Visual Information Specialist</i>	<i>Information Technology Specialists</i>

MMWR Editorial Board

William L. Roper, MD, MPH, Chapel Hill, NC, <i>Chairman</i>	Timothy F. Jones, MD, Nashville, TN
Matthew L. Boulton, MD, MPH, Ann Arbor, MI	Rima F. Khabbaz, MD, Atlanta, GA
Virginia A. Caine, MD, Indianapolis, IN	Dennis G. Maki, MD, Madison, WI
Barbara A. Ellis, PhD, MS, Atlanta, GA	Patricia Quinlisk, MD, MPH, Des Moines, IA
Jonathan E. Fielding, MD, MPH, MBA, Los Angeles, CA	Patrick L. Remington, MD, MPH, Madison, WI
David W. Fleming, MD, Seattle, WA	William Schaffner, MD, Nashville, TN
William E. Halperin, MD, DrPH, MPH, Newark, NJ	
King K. Holmes, MD, PhD, Seattle, WA	

TABLE 1. Methods used by four surveillance systems to define survey participants as men who have sex with men (MSM) and injection drug users (IDU)

System and website	Sampling method and analysis	Data collection method	Data years	MSM/IDU	
				Definition	Defining question(s)
National Health and Nutrition Examination Survey (NHANES) (http://www.cdc.gov/nchs/nhanes)	Cluster-stratified, multistage probability sample of persons aged 12–59 years in U.S. households. Analysis limited to males aged 20–59 years and who gave affirmative or negative responses to questions regarding sex with a man during his lifetime and injection drug use during his lifetime. Data weighted to adjust for sampling strategy. N = 7,011 male respondents weighted to represent 71,111,352 adult men in the population.	ACASI	1999–2008	Participants who ever had sex with a man in his lifetime (>0 same sex partners) and who ever used a needle to take street drugs or used a needle to inject drugs not prescribed by a doctor.	Ever MSM (1999–2004): “In your lifetime, with how many men have you had sex?” Ever MSM (2005–2008): “In your lifetime, with how many males have you had anal or oral sex?” Ever IDU (1999–2004): “Have you ever used a needle to take street drugs?” Ever IDU (2005–2008): “Have you ever, even once, used a needle to inject a drug not prescribed by a doctor?”
National HIV Behavioral Surveillance System (NHBS) (http://www.cdc.gov/hiv/bcsb/nhbs)					
MSM cycle*	Time-location sampling of MSM aged ≥18 years who live in the participating MSA. Analysis sample includes male participants (n = 9,903) who gave affirmative or negative responses to questions regarding sex with a man during his lifetime and injection drug use during his lifetime. Data are unweighted.	CAPI	2008	Men who have ever had oral or anal sex with a man and who ever injected drugs.	Ever MSM: “Have you ever had oral or anal sex with a man?” Ever IDU: “Have you ever in your life shot up or injected any drugs other than those prescribed for you? By shooting up, I mean anytime you might have used drugs with a needle, either by mainlining, skin popping, or muscling.”
IDU cycle*	Respondent-driven sampling of IDUs aged ≥18 years who live in the participating MSA. Analysis sample includes male participants (n = 7,374) who gave affirmative or negative responses to questions regarding sex with a man during his lifetime and injection drug use during his lifetime. Data are unweighted.	CAPI	2009	IDU participants who reported ever having oral or anal sex with a man.	Ever MSM: “Have you ever had oral or anal sex with a man?” IDU: All eligible participants are IDU (injected in past 12 months)
National HIV Surveillance System (NHSS) (http://www.cdc.gov/hiv/topics/surveillance)					
HIV diagnoses	Ascertained through HIV case reporting. Analysis includes cases in persons aged ≥18 years and diagnosed in 2011 (n = 39,134). Data adjusted for reporting delays and missing transmission category but not for incomplete reporting.	Medical record review	2011	Males whose transmission category is classified as male-to-male sexual contact and injection drug use since 1977. These include men whose case report noted injecting drugs and sexual contact with other men or sexual contact with both men and women.	
Living with diagnosis of HIV	Ascertained through HIV case reporting. Analysis includes persons aged ≥18 years at time of diagnosis and living through the end of 2010 (n = 663,866). Data adjusted for reporting delays and missing transmission category but not for incomplete reporting.	Medical record review	2010	Males whose transmission category is classified as male-to-male sexual contact and injection drug use since 1977. These include men whose case report noted injecting drugs and sexual contact with other men or sexual contact with both men and women.	
Medical Monitoring Project (MMP) (http://www.cdc.gov/hiv/topics/treatment/mmp)	Three-stage probability sample (states, health-care facilities that provide HIV medical care, and patients in medical care for HIV). Analysis sample includes HIV-positive patients aged ≥18 years receiving care from HIV medical care facilities (n = 6,635). MMP data were linked to NHSS data and NHSS transmission risk was used to define MSM/IDU. Data are unweighted.	CAPI	2007–2009	Males whose transmission category is classified as male-to-male sexual contact and injection drug use since 1977. These include men whose case report noted injecting drugs and sexual contact with other men or sexual contact with both men and women.	

Abbreviations: ACASI = audio, computer-assisted self interview; CAPI = computer-assisted personal interview; HIV = human immunodeficiency virus; MSA = metropolitan statistical area.

* Cycle defined as data collection with a specific population.

TABLE 2. Percentage of males aged ≥18 years who are men who have sex with men (MSM), injection drug users (IDU), or both (MSM/IDU) — National Health and Nutrition Examination Survey (NHANES), National HIV Behavioral Surveillance System (NHBS), National HIV Surveillance System (NHSS), and Medical Monitoring Project (MMP), 1999–2011

Data source	% MSM not IDU	% IDU not MSM	% MSM/IDU	% MSM/IDU among MSM	% MSM/IDU among IDU
NHANES 1999–2008 (95% confidence intervals)	4.7 (4.0–5.5)	3.0 (2.4–3.5)	0.35 (0.18–0.52)	6.9 (3.6–10.1)	10.5 (6.0–15.0)
NHBS					
MSM cycle, 2008	93.1	—*	6.9	6.9	—*
IDU cycle, 2009	—*	80.1	19.9	—*	19.9
NHSS					
Diagnoses, 2011	78.1	6.0	3.6	4.4	37.5
Living with a diagnosis of HIV infection, 2010	66.8	13.8	7.5	10.1	35.1
MMP	66.4	14.2	8.9	11.8	38.6

Abbreviation: HIV = human immunodeficiency virus.

* Not applicable. The NHBS MSM cycle uses time location sampling of MSM, so there would not be men in the NHBS MSM cycle who were solely IDU. The NHBS IDU cycle uses respondent-driven sampling and only includes persons who injected drugs within the past 12 months; therefore, the NHBS IDU cycle would not include men who were solely MSM.

TABLE 3. Percentage of men who are both men who have sex with men (MSM) and injection drug users (IDU) (MSM/IDU), and other males, by age group and race/ethnicity — National HIV Behavioral Surveillance (NHBS), National HIV Surveillance System (NHSS), and Medical Monitoring Project (MMP), 2007–2011

Characteristic	NHBS				NHSS				MMP	
	MSM cycle, 2008		IDU cycle, 2009		Diagnoses, 2011		Living with, 2010		In care, 2007–2009	
	% MSM/IDU (n = 681)	% non-IDU (n = 9,222)	% MSM/IDU (n = 1,467)	% non-MSM (n = 5,907)	% MSM/IDU (n = 1,416)	% non-MSM/IDU (n = 37,718)	% MSM/IDU (n = 49,656)	% non-MSM/IDU (n = 614,210)	% MSM/IDU (n = 596)	% non-MSM/IDU (n = 6,089)
Age group (yrs)										
18–24	8.5	22.7	2.6	2.9	18.5	21.7	1.8	4.0	1.0	2.1
25–34	29.8	31.7	17.1	14.2	32.9	28.7	11.3	13.4	4.4	9.5
35–44	33.3	26.2	26.6	21.0	24.6	22.1	27.5	25.6	35.2	28.1
45–54	20.9	13.9	36.5	36.8	17.4	19.0	42.4	36.2	41.8	40.2
≥55	7.5	5.5	17.3	25.2	6.6	8.6	17.1	20.7	17.6	20.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Race/Ethnicity										
White	65.3	42.1	32.9	24.1	43.8	30.2	43.7	37.9	46.1	40.0
Black	11.3	24.8	35.5	49.5	30.3	41.9	33.8	37.3	32.9	35.1
Hispanic	16.0	24.2	25.7	22.8	20.9	23.5	18.6	21.5	14.3	18.9
American Indian/Alaska Native	1.2	0.5	1.0	0.8	0.9	0.4	0.8	0.3	1.5	0.6
Asian	0.4	2.3	0.3	0.3	1.7	2.1	0.7	1.2	0.0	0.8
Native Hawaiian or other Pacific Islander	0.2	0.7	0.3	0.2	0.0	0.2	0.1	0.1	0.7	0.3
Multirace	4.3	3.6	4.4	2.5	2.4	1.7	2.2	1.5	3.2	3.0
Other/Unknown	1.3	1.7	0.0	0.0	0.0	0.0	0.1	0.1	1.3	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

male-to-male sex and injection drug use; these men comprised 4% of all men diagnosed with HIV infection in 2011. MSM comprised 78% of all men aged ≥18 years diagnosed with HIV infection and MSM/IDU were 4% of all MSM. IDU comprised 6% of all men diagnosed with HIV infection aged ≥18 years in 2011, and MSM/IDU comprised 38% of male IDU (Table 2). Among MSM/IDU, 51% were aged 18–34 years; 44% were white, 30% black/African American, and 21% Hispanic/Latino (Table 3). At the end of 2010, NHSS

data indicated there were 49,656 adult MSM/IDU living with a diagnosis of HIV infection; these men comprised 8% of all men living with a diagnosis of HIV infection. MSM comprised 67% of all males living with a diagnosis of HIV infection, and MSM/IDU were 10% of all MSM. IDU comprised 14% of all males living with a diagnosis of HIV infection, and MSM/IDU were 35% of male IDU (Table 2). Among these MSM/IDU, 13% were aged 18–34 years; 44% were white, 34% black/African American, and 19% Hispanic/Latino (Table 3).

Among 6,635 HIV-infected men in medical care for HIV infection who participated in MMP during 2007–2009, 596 (9%) were MSM/IDU. MSM comprised 66% of all men, and MSM/IDU comprised 12% of MSM; similarly, IDU comprised 14% of all men, and MSM/IDU comprised 39% of male IDU (Table 2). Among MSM/IDU, 5% were aged 18–34 years; 46% were white, 33% black/African American, and 14% Hispanic/Latino (Table 3).

For each data source, compared with men who were not MSM/IDU, a higher proportion of MSM/IDU were white and a lower proportion were black/African American (Table 3). MSM/IDU in the NHBS MSM cycle were predominately white (65%), whereas the racial distribution among those in NHSS and MMP was more diverse: approximately 40% white, 30% black/African American, and 20% Hispanic/Latino. These data also show a large proportion (38%) of MSM/IDU in the MSM cycle of NHBS and diagnosed with HIV infection in 2011 (51%) (NHSS) were aged 18–34 years.

Reported by

Norma Harris, PhD, Christopher Johnson, MS, Catlainn Sioanean, PhD, Wade Ivy, PhD, Sonia Singh, PhD, Stanley Wei, MD, Yuko Mizuno, PhD, Amy Lansky, PhD, Div of HIV/AIDS Prevention, National Center for HIV, Viral Hepatitis, STD, and TB Prevention, CDC. Corresponding contributor: Norma Harris, nharris@cdc.gov, 404-718-8559.

Editorial Note

MSM/IDU constitute an estimated 0.35% of the general male population (248,890 men), based on data from NHANES, a general population survey of a probability sample of U.S. households. Other methods for estimating the size of HIV risk behavior populations include meta-analysis of multiple national surveys (2,3). NHANES was used because it is the largest national data source available to obtain data on both male-to-male sexual behavior and injection drug use among persons aged ≥ 18 years.

The findings in this report will be used in CDC's future efforts to refine disease rates by transmission category. The findings demonstrate that, although MSM/IDU constitute only 0.35% of the general male population, they comprise 4%–12% of MSM and 11%–39% of male IDU. One study estimated the prevalence of injection drug use among MSM to be 42% (4), another estimated the prevalence of male-to-male sex among IDU to be 31% (5). In 2010, men who have sex with men, inject drugs, or do both represented 71% of persons with new HIV infections in the United States (1).

The findings in this report are subject to at least five limitations. First, using NHANES to estimate the population proportion of MSM/IDU might provide an underestimate

What is already known on this topic?

Men who have sex with men (MSM) and are injecting drug users (IDU) (MSM/IDU) comprise a small proportion of persons with human immunodeficiency virus (HIV) infections, but they are at increased risk for acquiring and transmitting HIV.

What is added by this report?

Using data from four national surveillance systems, the proportion of MSM/IDU was estimated to better describe the prevalence of persons engaging in both behaviors. MSM/IDU comprised an estimated 0.35% of adult males in the general household population of the United States, 7%–20% of males at high risk for HIV infection because of behaviors such as male-to-male sex or injecting drugs, 4% of males diagnosed with HIV, 8% of males living with a diagnosis of HIV infection, and 9% of males diagnosed with and in medical care for HIV infection. Across surveillance systems, MSM/IDU accounted for 4%–12% of MSM and 11%–39% of male IDU.

What are the implications for public health practice?

Risk reduction programs and interventions targeted toward male IDU populations might be more effective if they incorporate messages about male-to-male sex because 11%–39% of male IDU were also MSM in this analysis. A combination of effective, scalable, and evidence-based approaches that address male-to-male sex and injection drug use behaviors might help reduce HIV infections among MSM/IDU.

or overestimate because institutionalized and nonhousehold-based populations are not included in the sampling strategy. Second, during 1999–2008, the response rate for sampled male participants with both an interview and a medical examination ranged from 69% in the 2001–2002 data to 72% in the 2007–2008 data, and it is unknown whether an underestimate or overestimate of the proportion of MSM/IDU would result from nonresponse. Third, MSM/IDU from the HIV surveillance systems might not be representative of all MSM/IDU in the United States (e.g., those not infected with HIV). Fourth, some participants might not have accurately reported their behaviors, which might result in underestimates of proportions of MSM/IDU. Finally, the NHSS data were adjusted statistically to account for diagnosed cases with a missing transmission category. The degree of uncertainty introduced by this imputation is unknown.

Because MSM/IDU engage in both of the HIV risk behaviors considered in this analysis, they are particularly vulnerable to infection and can transmit HIV through sexual behavior or by sharing syringes. This analysis demonstrates that the population proportion of MSM/IDU is small, but it comprises a considerable proportion of both MSM and IDU populations at risk for or infected with HIV. For persons at increased risk, such as MSM or IDU, HIV testing at least once a year is recommended (6). An integrated prevention services approach

for IDU should include 1) substance abuse and mental health treatment; 2) risk reduction programs and messages, including interventions to reduce risky sexual behaviors; and 3) access to condoms and sterile injection and drug preparation equipment (7). Risk reduction programs and interventions targeted toward male IDU populations might be more effective if they incorporate messages about male-to-male sex because approximately 11%–39% of IDU also engage in male-to-male sex according to this analysis. Preexposure prophylaxis (e.g., daily doses of tenofovir disoproxil fumarate and emtricitabine) is also an appropriate prevention strategy for some high-risk IDU and MSM (8,9). The National HIV/AIDS Strategy calls for intensified HIV prevention efforts in the communities where HIV is most heavily concentrated, including blacks/African Americans, Hispanics/Latinos, gay and bisexual men, and substance abusers (10). CDC's High Impact Prevention strategy expands efforts to prevent HIV infection using a combination of effective, scalable, and evidence-based approaches that address male-to-male sex and injection drug use behaviors that might reduce HIV infections among MSM/IDU.

References

1. CDC. Estimated HIV incidence among adults and adolescents in the United States, 2007–2010. HIV surveillance supplemental report 2012;17(No.4).
2. Purcell D, Johnson C, Lansky A, et al. Estimating the population size of men who have sex with men in the United States to obtain HIV and syphilis rates. *Open AIDS J* 2012;6(Suppl 1:M6):98–107.
3. Lansky A, Finlayson T, Johnson C, et al. Estimating the number of injection drug users in the United States to calculate national rates of HIV infection. Presented at 2012 National Summit on HIV and Viral Hepatitis Diagnosis, Prevention, and Access to Care (November 26–28, 2012, Washington, DC) [abstract #115].
4. Semple SJ, Patterson TL, Grant I. A comparison of injection and non-injection methamphetamine-using HIV positive men who have sex with men. *Drug Alcohol Depend* 2004;76:203–12.
5. Deiss RG, Brouwer KC, Loza O, et al. High-risk sexual and drug using behaviors among male injection drug users who have sex with men in 2 Mexico-US border cities. *Sex Transm Dis* 2008;35:243–9.
6. US Preventive Services Task Force, 2013. Screening for HIV: US Preventive Services Task Force Recommendation Statement. *Ann Intern Med* 159:51–60.
7. CDC. Integrated prevention services for HIV infection, viral hepatitis, sexually transmitted diseases, and tuberculosis for persons who use drugs illicitly: summary guidance from CDC and the US Department of Health and Human Services. *MMWR* 2012;61(No. RR-5).
8. CDC. Update to interim guidance for preexposure prophylaxis (PrEP) for the prevention of HIV infection: PrEP for injecting drug users. *MMWR* 2013;62:463–5.
9. CDC. Interim guidance: preexposure prophylaxis for the prevention of HIV Infection in men who have sex with men. *MMWR* 2011;60:65–8.
10. Office of National AIDS Policy. The National HIV/AIDS Strategy. Washington, DC: Office of National AIDS Policy; 2010. Available at <http://aids.gov/federal-resources/national-hiv-aids-strategy/nhas.pdf>.

Impact of a National Tobacco Education Campaign on Weekly Numbers of Quitline Calls and Website Visitors — United States, March 4–June 23, 2013

During March 4–June 23, 2013, CDC conducted its second annual national paid-media tobacco education campaign encouraging adult smokers to quit. These campaigns, called Tips from Former Smokers (Tips), feature true stories of former smokers living with serious smoking-related diseases. To assess the immediate impact of the 2013 Tips campaign, CDC analyzed the weekly numbers of calls to the national telephone quitline portal (1-800-QUIT-NOW) and the weekly numbers of unique visitors to the Tips website (<http://www.cdc.gov/tips>)* during the 16-week campaign and during the 4 weeks before and after the campaign. During the campaign, the average weekly numbers of calls and website visitors increased by 75% and almost 38-fold, respectively, compared with the 4 weeks before the campaign, and quickly decreased almost to pre-campaign levels once the campaign ended. This suggests that the campaign led to 151,536 additional quitline calls and nearly 2.8 million additional unique Tips website visitors above pre-campaign levels. During the first 12 weeks of the campaign,† when the national television ads were on and off air on alternate weeks, average weekly call volume fell by 38% during the 6 weeks when the national television ads were off air compared with the 6 weeks when these ads were running. These results suggest that emotionally evocative tobacco education media campaigns featuring graphic images of the health effects of smoking can increase quitline calls and website visits and that these campaigns' effects decrease rapidly once they are discontinued.

The 2013 campaign included advertising on television, online (Internet and mobile), radio, print, billboards, buses and bus stop shelters, and social media. The campaign's television component included national ads in all 210 U.S. designated market areas (DMAs) and additional local ads in 67 of these DMAs, which were selected randomly.§ To extend the campaign's length, the national television ads were placed using a "pulsing" strategy, which involved airing them on a 1-week-on, 1-week-off basis through the first 12 weeks of the campaign, while the local television ads ran continuously throughout the campaign. The

campaign's online component consisted of national ads only and ran continuously throughout the campaign.

The campaign's television ads included one of three calls to action: an invitation to call 1-800-QUIT-NOW (66%), an invitation to visit the Tips website (28%), and the message "Talk with your doctor (6%)."[¶] During the campaign's first 12 weeks, all online ads included the Tips website; during its last 4 weeks, these ads included a mix of the Tips website, 1-800-QUIT-NOW, and "Talk with your doctor." In addition to featuring Tips ads, which provide motivation to quit smoking, the Tips website syndicated extensive information on how to quit from the National Cancer Institute's (NCI's) cessation website (<http://www.smokefree.gov>).

This analysis used 1-800-QUIT-NOW call volume data collected by NCI from the national portal and data on unique visitors to the Tips campaign website collected by CDC using Adobe SiteCatalyst and Google Analytics. For the purposes of this report, unique visitors are defined as persons who visited the Tips website one or more times in a given week.

A total of 352,848 calls to 1-800-QUIT-NOW occurred during the 2013 campaign, for a weekly average of 22,053 calls (Figure 1).** This represents 151,536 additional calls (a 75% increase) above what would have been expected had call volume continued at the level observed during the 4 weeks before the campaign (February 4–March 3), when the weekly average was 12,582 calls. The average weekly call volume of 13,044 calls during the 4 weeks after the campaign (June 24–July 21) was 41% lower than the weekly average observed during the campaign.†† Both the increase in call volume from the pre-campaign weeks to the campaign weeks and the decrease in call volume from the campaign weeks to the post-campaign weeks were statistically significant ($p < 0.05$), whereas no significant difference in call volume was found between the pre-campaign and post-campaign weeks ($p = 0.60$).§§

[¶] During the 9th week of the campaign (May 27–June 2), most television ads included this message. The full message was "You can quit – talk with your doctor for help."

** The campaign call totals reported in this analysis do not include almost 150,000 calls that were generated by mobile "click-to-call" promotions beginning April 1. These calls were excluded from the analysis because reports from several state quitlines suggested that few, if any, of these callers remained on the line to receive services.

†† Some television stations continued to run ads for a short period after the campaign ended.

§§ The statistical test applied was a t-test comparison of the difference in means.

* In addition to unique visitors to <http://www.cdc.gov/tips> (English), the numbers reported include unique visitors to the associated resources <http://www.cdc.gov/consejos> (Spanish), <http://m.cdc.gov/tips> (English, mobile platform), and <http://m.cdc.gov/consejos> (Spanish, mobile platform).

† This part of the analysis focuses on the first 12 weeks of the campaign because the calls to action featured on the television and online ads and the pulsing schedule changed substantially during the last 4 weeks of the campaign.

§ Because of resource constraints, the 20 largest DMAs in the United States were excluded from the randomization process and received the national television ads only.

During the campaign's first 12 weeks, average weekly call volume was 38% lower during the 6 weeks when the national television ads were off-air compared with the 6 weeks when these ads were running (16,500 versus 26,571). A separate analysis found that during off-air weeks, call volume in DMAs without local ads fell nearly to the level of the 4 pre-campaign weeks.

Nearly 2.9 million (2,868,059) unique visitors accessed the Tips campaign website during the 2013 Tips campaign, for a weekly average of 179,254 unique visitors (Figure 2). This represents almost 2.8 million (2,792,475) additional unique visitors (a nearly 38-fold increase) above what would have been expected had website traffic continued at the level observed during the 4 weeks before the campaign, when the weekly average was 4,724 visitors. The weekly average of 7,575 website visitors during the 4 post-campaign weeks was 96% lower than the weekly average observed during the campaign. The cessation sections of the English and Spanish Tips websites received almost half a million page views during the campaign, suggesting that many visitors to the Tips website were actively seeking information on how to quit smoking. Although the weekly number of website visitors varied during the course of the campaign, this variation did not clearly follow the pattern of the national television ad pulsing.

Reported by

Mary Anne Bright, MN, National Cancer Institute, Bethesda, Maryland. Kevin Davis, MA, RTI International, Research Triangle Park, North Carolina. Stephen Babb, MPH, Rebecca Bunnell, ScD, Robert Rodes, MS, Robert Alexander, PhD, Caryn Coln, MS, Lei Zhang, PhD, Diane Beistle, Jane Mitchko, MEd, Timothy McAfee, MD, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, CDC. **Corresponding contributor:** Stephen Babb, sbabb@cdc.gov, 770-488-1172.

Editorial Note

Emotionally evocative tobacco education media campaigns featuring graphic images of smoking-related diseases are effective in motivating smokers to quit (1–5). Telephone quitlines increase quit rates (6). The 1-800-QUIT-NOW portal, operated by NCI, seamlessly routes callers to their state quitlines based on area code. CDC funds state quitlines as part of its support for comprehensive state tobacco control programs. Web-based cessation interventions are promising (6), but the available evidence is insufficient to fully assess their effectiveness (7).

This analysis shows that the number of weekly calls to 1-800-QUIT-NOW increased as soon as the Tips campaign began, decreased when the national television ads were off-air, increased each time these ads returned to the air, and decreased when the campaign ended. Each of these increases and decreases was rapid and substantial. These findings reinforce

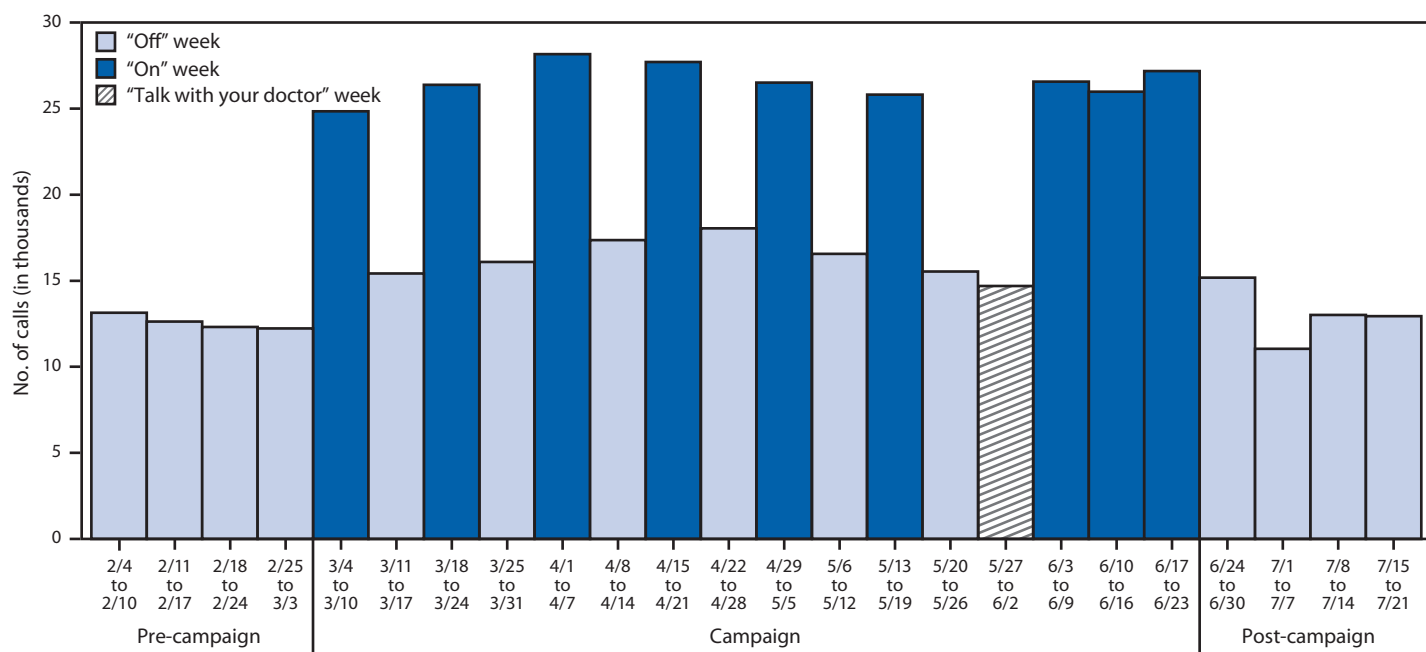
previous evidence that media campaigns can motivate smokers to try to quit and to seek information on quitting (1–5), while also offering additional evidence that these campaigns' effects fade quickly once they end (2,3,8). These findings underscore the public health importance of sustaining campaigns over time, and suggest that the Tips campaign might have generated even more quitline calls if the national television ads had run continuously and had appeared over a longer period. If the national television ads had been aired continuously without pulsing over the entire 16 weeks of the campaign, assuming the average weekly call volume observed during the first 6 "on" weeks was sustained, about 425,000 calls would have occurred during the campaign (i.e., about 72,000 more calls than actually occurred).

As with 1-800-QUIT-NOW calls, the weekly number of unique visitors to the Tips campaign website increased sharply immediately after the campaign began and decreased sharply once it ended. However, although the number of weekly website visitors varied during the campaign, the pulsing pattern was far less evident than it was for quitline calls. This suggests that the national online ads, which ran continuously throughout the campaign, were a greater driver of website traffic than the pulsed national television ads. This is plausible, because online ads have a built-in advantage in directing traffic to a website; online ad viewers need only click on an ad to visit the website. In addition, only about 28% of the television ads included the website. During the weeks of April 22–28 and June 17–23, the amount of online advertising increased sharply, corresponding with substantial increases in unique website visitors, indicating that website traffic is responsive to changes in the online ad exposure dose. The fact that there were almost 3 million visitors to the Tips website during the 2013 campaign suggests that online ads hold promise for motivating smokers to engage in cessation information-seeking activity.

Although substantial increases occurred in the numbers of 1-800-QUIT-NOW calls and Tips website visitors during the 2013 Tips campaign, total numbers of calls and website visitors during the 2013 campaign are somewhat smaller than during the 2012 Tips campaign (9).⁴⁵ This likely reflects at least two factors. First, the national television and online ad purchases

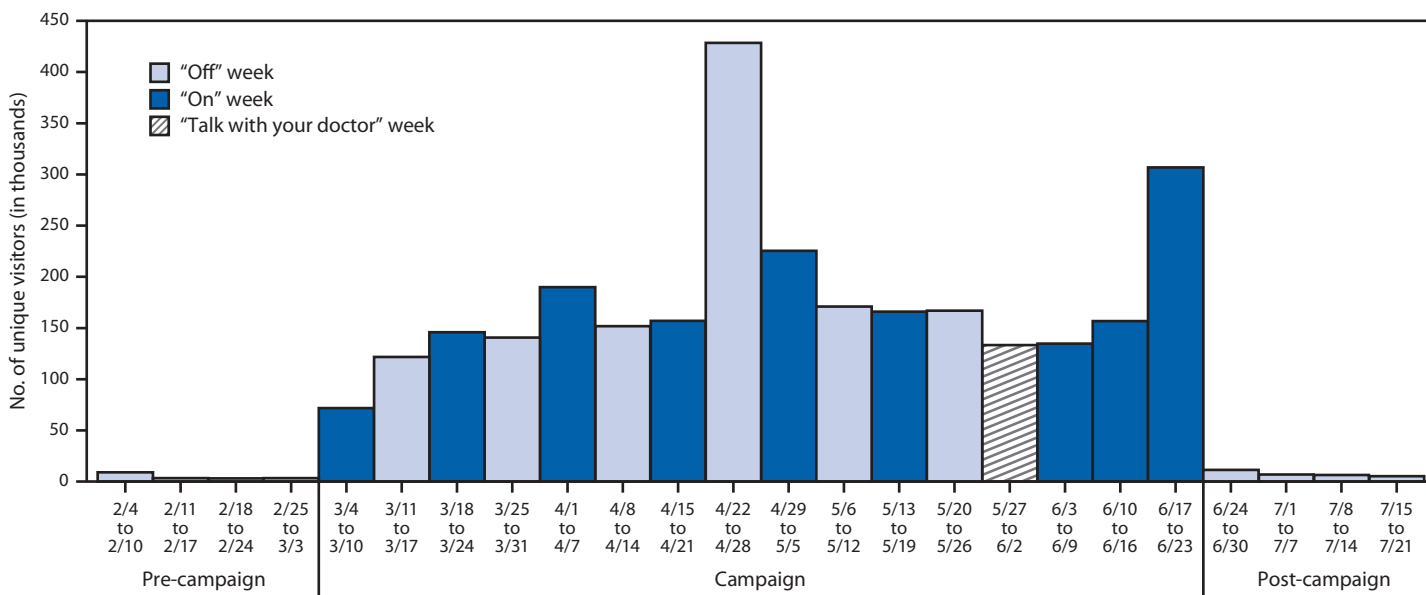
⁴⁵ This comparison of website traffic in the 2012 and 2013 Tips campaigns takes into account that the 2012 ads featured one of two websites (CDC's Tips website and NCI's smokefree.gov website), whereas the 2013 ads included a single website (the Tips website). Accordingly, 2,868,059 visitors to the Tips website during the 2013 campaign are being compared with the combination of 629,898 unique visitors to the smokefree.gov website and the most comparable available indicator of 2,750,420 visits to the Tips website during the 2012 campaign. (The latter figure is for unique visits, not unique visitors. CDC was unable to track unique visitors to the Tips campaign website in 2012 because of agency regulations in effect at that time. The number of unique visitors to a website typically is somewhat smaller than the number of unique visits.)

FIGURE 1. Number of weekly telephone calls made to 1-800-QUIT-NOW before, during, and after CDC's 2013 Tips from Former Smokers campaign — United States, February 4–July 21, 2013*



* For the week of May 27–June 2, the national television ads were running, but most of these ads featured the message “You can quit – talk with your doctor for help.” For the weeks of June 3–9, June 10–16, and June 17–23, a substantial proportion of online ads were tagged with 1-800-QUIT-NOW. For the week of June 24–30, some television stations continued to run ads for a short period after the campaign ended.

FIGURE 2. Number of weekly unique visitors to campaign websites before, during, and after CDC's 2013 Tips from Former Smokers campaign — February 4–July 21, 2013*



* For the week of April 22–28, YouTube mistakenly ran substantially more online ads than were purchased. For the week of May 27–June 2, the national television ads were running, but most of these ads featured the message “You can quit – talk with your doctor for help.” For the weeks of June 3–9, June 10–16, and June 17–23, a substantial proportion of online ads were tagged with 1-800-QUIT-NOW rather than the website address. For the week of June 17–23, online ad impressions were run at an especially high level. For the week of June 24–30, some ad servers continued to run online ads for a short period after the campaign ended.

What is already known on this topic?

The number of weekly calls to a national quitline portal and the number of weekly unique visitors to a cessation website increased substantially during the 2012 Tips from Former Smokers national tobacco education media campaign (Tips campaign) compared with the same period in 2011.

What is added by this report?

The number of weekly calls to the national quitline portal and the number of weekly unique visitors to the Tips campaign website increased substantially during the 2013 Tips campaign, compared with the 4 weeks preceding the campaign. These numbers decreased rapidly once the campaign ended. Calls also decreased sharply during campaign weeks when the national television ads were off the air. Increases in quitline call volume appeared to be driven primarily by television ads, whereas increases in traffic to the Tips website appeared to be driven primarily by online ads.

What are the implications for public health practice?

Tobacco education media campaigns featuring true personal stories from former smokers with serious smoking-related diseases and graphic images can substantially increase calls to quitlines and visitors to campaign websites, which would be expected to result in increases in quit attempts and successful quit attempts. Quitline calls and website visitors fall sharply when campaigns are discontinued. Media campaigns such as the Tips campaign might have an even greater impact if they were sustained at a high intensity for a longer time.

were lower in 2013 than in 2012. Second, national television ads including 1-800-QUIT-NOW ran for only 9 weeks in 2013, compared with 12 weeks in 2012.

The findings in this report are subject to at least five limitations. First, this analysis was a natural time series analysis and did not control for other factors that could have contributed to the increases in weekly call volume and website visitors observed during the 2013 Tips campaign. However, the observed impact of the campaign's pulsing strategy on call volume, as well as the sharp increase and decrease in calls and website visitors observed immediately after the campaign began and ended, point to a causal relationship. Secondly, NCI data on calls to 1-800-QUIT-NOW reflect the number of call attempts, not the number of unique callers, completed calls, or callers receiving services. The NCI data also do not capture calls to other state quitline numbers besides 1-800-QUIT-NOW. Third, adding the weekly numbers of Tips website unique visitors to calculate total unique visitors during the campaign likely somewhat overestimates this total because the same person could be counted several times if they visited the Tips website repeatedly over several different weeks. Fourth, the number of Tips website visitors included both web and mobile

visitors, so some persons who visited the website through both these channels could have been counted twice, resulting in an overestimate. Finally, 1-800-QUIT-NOW calls and visitors to the Tips website are preliminary indicators of quit attempts and successful cessation, outcomes which future evaluations of the 2013 Tips campaign will examine. However, the 2012 Tips campaign was associated with increases in call volume, website visitors, quit attempts, and successful cessation, suggesting that the first two indicators predict the latter two outcomes (9,10).

Calls to quitlines and traffic to the campaign website increased sharply when the Tips campaign was on the air, suggesting that this campaign likely motivated many smokers to try to quit. Quitline call volume appeared to be driven primarily by television ads, whereas traffic to the Tips website appeared to be driven primarily by online ads. Both quitline calls and website traffic fell rapidly when the campaign was discontinued. These findings speak to the effectiveness of emotionally evocative media campaigns featuring graphic images in increasing interest in quitting smoking, and highlight the even greater impact these campaigns might have if they were sustained at a high intensity for a longer time. If the national television ads that aired during "on" weeks of the 2013 Tips campaign were run throughout the year at this level and produced the same response, this would translate into almost 1.4 million calls to 1-800-QUIT-NOW in 2013, which is 500,000 more calls than the portal received in 2012 and by far the most calls that it has received in any year since its inception.

Acknowledgments

The 19 persons who shared their stories through their participation in the 2013 Tips campaign. Erik Augustson, Yvonne Hunt, Candace Deaton Maynard, Diane Ruesch, Bob Zablocki, National Cancer Institute, Bethesda, Maryland. Deanne Weber, McKing Consulting Corporation, Atlanta, Georgia. Shani Taylor, Matthews Media Group, Rockville, Maryland. Kelsey Campbell, LeTonya Chapman, Nathan Mann, RTI International, Research Triangle Park, North Carolina. Gillian Schauer, Carter Consulting Inc., Atlanta, Georgia. Linda Bailey, Natalia Gromov, Jessie Saul, Tamatha Thomas-Haase, North American Quitline Consortium, Oakland, California. Crystal Bruce, Karen Debrot, Jami Frazee, Asha Hill, Michelle Johns, Joel London, Ann Malarcher, Bill Marx, Amy Rowland, Karena Sapsis, Robin Scala, Karla Sneeegas, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

References

1. Community Preventive Services Task Force. Reducing tobacco use and secondhand smoke exposure: mass-reach health communication interventions. Atlanta, GA: Task Force on Community Preventive Services; 2013. Available at <http://www.thecommunityguide.org/tobacco/massreach.html>.

2. National Cancer Institute. The role of the media in promoting and reducing tobacco use. Tobacco control monograph no. 19. Bethesda, MD: US Department of Health and Human Services, National Cancer Institute; 2008. Available at <http://www.cancercontrol.cancer.gov/tcrb/monographs/19/index.html>.
3. Durkin S, Brennan E, Wakefield M. Mass media campaigns to promote smoking cessation among adults: an integrative review. *Tob Control* 2012; 21:127–38.
4. CDC. Best practices for comprehensive tobacco control programs—2007. Atlanta, GA: US Department of Health and Human Services, CDC; 2007. Available at http://www.cdc.gov/tobacco/stateandcommunity/best_practices/index.htm.
5. Farrelly, M, Mann N, Watson K, Pechacek T. The influence of television advertisements on promoting calls to telephone quitlines. *Health Educ Res* 2013;28:15–22.
6. Fiore MC, Jaen CR, Baker TB, et al. Treating tobacco use and dependence: 2008 update. Clinical practice guideline. Rockville, MD: US Department of Health and Human Services, Public Health Service; 2008. Available at <http://www.ahrq.gov/professionals/clinicians-providers/guidelines-recommendations/tobacco/index.html>.
7. Community Preventive Services Task Force. Reducing tobacco use and secondhand smoke exposure: Internet-based cessation interventions. Atlanta, GA: Community Preventive Services Task Force; 2013. Available at <http://www.thecommunityguide.org/tobacco/internet.html>.
8. CDC. Effect of ending an anti-tobacco youth campaign on adolescent susceptibility to cigarette smoking—Minnesota, 2002–2003. *MMWR* 2004;53:301–4.
9. CDC. Increases in quitline calls and smoking cessation website visitors during a national tobacco education campaign—March 19–June 10, 2012. *MMWR* 2012;61:667–70.
10. McAfee T, Davis KC, Alexander Jr RL, Pechacek TE, Bunnell R. Effect of the first federally funded US antismoking national media campaign. *Lancet* 2013; September 9 [Epub ahead of print].

Assessing the Risks for Poliovirus Outbreaks in Polio-Free Countries — Africa, 2012–2013

In 2012, the World Health Assembly of the World Health Organization (WHO) declared the completion of polio eradication a programmatic emergency (1). Indigenous wild poliovirus (WPV) transmission remains uninterrupted in Nigeria (in the WHO African Region [AFR]) and in Afghanistan and Pakistan (in the WHO Eastern Mediterranean Region [EMR]). In the WHO AFR, multiple WPV outbreaks have occurred since 2003 after importation of indigenous West African WPV into 21 previously polio-free countries in a “WPV importation belt”^{*} that extends across the continent (2–3). The Global Polio Eradication Initiative (GPEI) and WHO regional offices have used indicators of population immunity, surveillance quality, and other factors (e.g., high-risk subpopulations and proximity to WPV-affected countries) to assess the risk for outbreaks in polio-free countries and guide the implementation of risk mitigation measures to limit poliovirus transmission after WPV importation and prevent the emergence of circulating vaccine-derived poliovirus (cVDPV) (4). Despite risk mitigation efforts, a polio outbreak, first confirmed in May 2013, is ongoing; as of September 10, a total of 178 WPV type 1 (WPV1) cases have been reported in Somalia[†] (163 cases), Kenya (14 cases) and Ethiopia (1 case), after importation of WPV1 of West African origin (5). This report summarizes steps taken by the GPEI to assess and mitigate the risks for outbreaks after WPV importation or the emergence of cVDPV in polio-free countries within the WHO AFR’s “WPV importation belt.” All countries will continue to have some level of risk for WPV outbreaks as long as endemic circulation continues in Afghanistan, Nigeria, and Pakistan.

Risk Assessment

GPEI partners, including WHO regional office teams, have assessed the risks for WPV outbreaks and cVDPV emergence in polio-free countries to support planning and prioritization of risk mitigation activities; a harmonized risk assessment approach has been used across WHO regions since 2011 (2). Risk assessments are based on three broad criteria:

^{*}The 21 “WPV importation belt” countries in the WHO AFR with either WPV outbreaks of West African origin since 2003 or with two or more contiguous borders with countries with WPV outbreaks are Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte d’Ivoire, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Mali, Mauritania, Niger, Senegal, Sierra Leone, Togo, and Uganda. Gambia and Guinea-Bissau have not reported WPV cases since before 2000.

[†]Somalia is in the WHO EMR. Other EMR countries on the African continent that have had outbreaks attributable to WPV importations of West African origin since 2003 are South Sudan, which will join the WHO AFR in 2014, and Sudan.

1) population immunity, 2) quality of acute flaccid paralysis (AFP) surveillance, and 3) other population-specific factors, such as the proximity to areas with active WPV transmission, history of previous outbreaks, capacity to respond to outbreaks, presence of nomadic or other high-risk subpopulations or areas, and insecurity or civil unrest. Population immunity is assessed by estimates of vaccination coverage by age 12 months with 3 doses of trivalent oral poliovirus vaccine (tOPV) and the reported number of OPV doses administered among children aged 6–59 months with nonpolio AFP (Figure). The quality of AFP surveillance is assessed by the proportion of provinces/states that achieve an annual nonpolio AFP reporting rate of ≥ 2 cases per 100,000 population aged < 15 years and the proportion of provinces/states that achieve adequate stool specimen collection[§] from $\geq 80\%$ of AFP cases.

Countries in the WHO AFR collect and review district-level data to make a qualitative determination of a country’s risk for an outbreak after a WPV importation or emergence of cVDPV and determine subnational areas at highest risk. A similar process is conducted by countries in the WHO EMR. The analysis described in this report is restricted to the 21 countries in the “WPV importation belt” in the WHO AFR based on 2012 data (Table 1). Countries were assessed to be at high risk for outbreaks during 2012–2013 based on proximity to countries where WPV was endemic or transmission was reestablished in 2012, current or recent civil unrest/insecurity, and any population immunity indicator in a high-risk tier. Countries were assessed to be at moderate risk based on any of the population immunity risk criteria suggesting vulnerability.

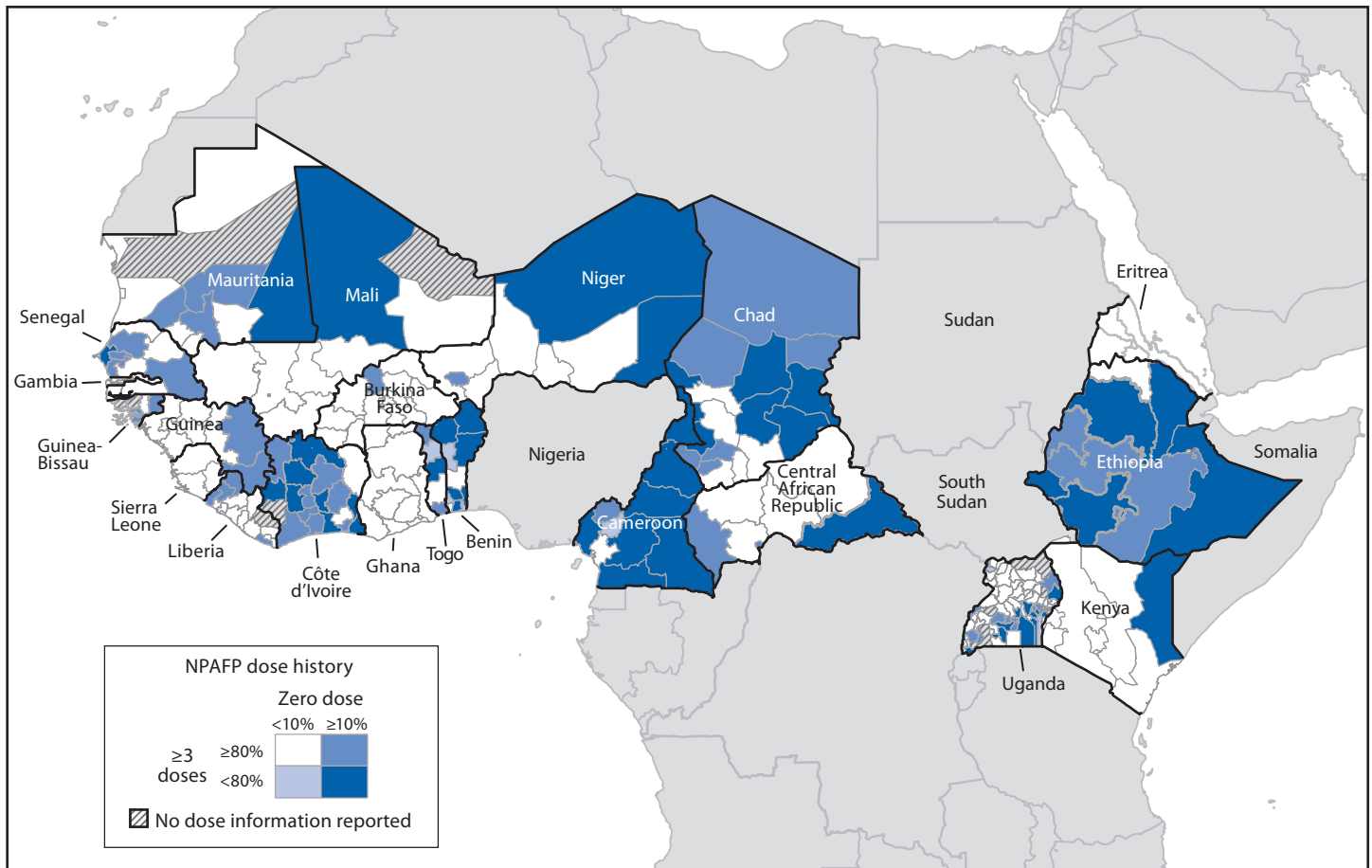
Risk Mitigation Activities

Risk assessments have informed annual planning of activities to address the vulnerabilities of countries to improve population immunity through supplemental immunization activities (SIAs) and routine immunization, strengthen surveillance to promptly detect and investigate AFP cases, and enhance public health capacity to promptly respond after WPV importation.

Immunization activities. To prevent transmission after WPV importation or cVDPV emergence, periodic preventive SIAs are undertaken nationally (national immunization days [NIDs]) and in portions of a country (subnational immunization days [SNIDs]) in polio-free countries. In 2012, NIDs were

[§]Two specimens collected ≥ 24 hours apart within 14 days of paralysis onset, and arriving in good condition (received using reverse cold chain and without leakage or desiccation) in a WHO-accredited laboratory.

FIGURE. Oral poliovirus dose history among children aged 6–59 months with nonpolio acute flaccid paralysis (NPAFP) in countries of the “wild poliovirus importation belt” — World Health Organization African Region, 2012



conducted in seven of 10 high-risk countries and five of seven moderate-risk countries; SNIDs were conducted in eight of 10 high-risk countries and four of seven moderate-risk countries (Table 2). In 2013, NIDs have been conducted or are planned in eight of 10 high-risk countries and all seven moderate-risk countries; SNIDs have been conducted or are planned in seven of 10 high-risk countries and three of six moderate-risk countries (Table 2). The number of SIAs planned was influenced by proximity to Nigeria and Chad and assessed risk. The timing and scope of activities has been influenced by the availability of OPV preparations[§] and by the availability of funds in time to support them.

[§] All OPV is obtained from manufacturers that have been “prequalified” by WHO for purchase by the United Nations Children’s Fund. Because of the exit of one manufacturer before another could begin larger-scale production, a shortage of OPV preparations occurred in 2012. *t*OPV is the preparation of choice in routine childhood vaccination in countries that have not introduced inactivated poliovirus vaccine. Monovalent vaccines (types 1 or 3) were predominantly used in SIAs during 2005–2011 to selectively increase population immunity against a given type. With the introduction of bivalent OPV (bOPV) types 1 and 3 in 2012 after the demonstration of noninferiority to monovalent vaccines, bOPV is now predominantly used in SIAs, and manufacturers give its production priority.

Strengthening surveillance. Strengthening AFP surveillance to detect possible cases promptly after importation will lead to quicker programmatic response and limit the spread of WPV and cVDPVs. Periodic activities undertaken to strengthen AFP surveillance include national AFP surveillance reviews, program assessments, and surveillance training. During 2012–2013, national AFP surveillance reviews with technical staff from GPEI partners were conducted in eight of 10 high-risk countries and four of seven moderate-risk countries (Table 2). Training activities were undertaken or are planned in three high-risk or moderate-risk countries. In addition, external reviews in countries with prior outbreaks have been conducted at 3 and 6 months after outbreak confirmation and 6 months after the latest WPV or cVDPV case to assess the adequacy of the response and the ability of a program to detect continued transmission in a community. Country plans are developed as a result of the reviews, and follow-up visits are conducted to monitor the implementation of the recommendations.

TABLE 1. Key risk indicators for countries of the “wild poliovirus (WPV) importation belt,” by risk for transmission after an importation of WPV — World Health Organization (WHO) African Region, 2012–2013

Country	Population immunity indicators			Surveillance quality indicators		Other risk factors			
	National coverage with OPV3 (goal 90%)*	% districts that have ≥80% OPV3 coverage (goal 100%)†	Risk tier vaccine history ≥3 doses in children with NPAFP (Low, ≥90%; Moderate, 80%–90%; High, <80%)	Risk tier vaccine history zero doses in children with NPAFP (Low, <5%; Moderate, 5%–10%; High, >10%)	Risk tier for % provinces with NPAFP cases ≥2 per 100,000 (Low, >80%; Moderate, 51%–80%; High, ≤50%)§	Risk tier for % provinces with ≥80% of AFP cases with adequate specimens¶	Border a country with endemic or reestablished WPV transmission in 2012 (Nigeria, Chad)	No. of years with at least one importation event (2003–2012)	Areas of insecurity
High-risk countries**									
Benin	85%	95%	High	High	High	Low	Yes	4	No
Cameroon	85%	75%	High	High	High	Moderate	Yes	5	Yes
CAR	47%	13%	Moderate	Low	High	Low	Yes	5	Yes
Chad	56%	52%	High	High	High	Moderate	Yes	10	Yes
Côte d'Ivoire	94%	NA	High	Moderate	High	Low	No	5	No
Ethiopia	70%	54%	High	Moderate	High	Moderate	No	4	Yes
Guinea-Bissau	78%	91%	High	Low	High	High	No	0	No
Mali	74%	73%	Low	Moderate	Low	Low	No	6	Yes
Niger	78%	98%	Low	Moderate	Moderate	Moderate	Yes	10	Yes
Uganda	82%	42%	High	Moderate	Moderate	Low	No	2	No
Moderate-risk countries									
Burkina Faso	90%	100%	Moderate	Moderate	High	Low	No	4	No
Guinea	57%	97%	Moderate	Low	Moderate	Low	No	3	No
Kenya	82%	NA	Low	Moderate	Moderate	Low	No	3	No
Liberia	77%	93%	Moderate	Low	Low	Low	No	2	No
Mauritania	80%	40%	Moderate	Moderate	Moderate	Low	No	2	Yes
Senegal	89%	NA	Moderate	Moderate	Moderate	Low	No	1	No
Togo	84%	89%	Moderate	Low	High	Low	No	3	No
Low-risk countries									
Eritrea	99%	48%	Low	Low	Low	Low	No	1	No
Gambia	98%	100%	Low	Low	Low	Low	No	0	No
Ghana	91%	80%	Low	Low	Low	Low	No	2	No
Sierra Leone	81%	100%	Low	Low	Low	Low	No	2	No

Abbreviations: OPV3 = ≥3 doses of oral poliovirus vaccine; NPAFP = nonpolio acute flaccid paralysis; AFP = acute flaccid paralysis; CAR = Central African Republic; NA = not available.

* WHO–United Nations Children’s Fund estimate (2012).

† Administrative data reported using a WHO–UNICEF Joint Reporting Form (2012).

§ The data for this indicator contain a substantial number of NPAFP cases with missing vaccination history. For 10 (46%) of 21 countries, ≥10% of the children with NPAFP had unknown vaccination histories.

¶ Standard WHO target is adequate stool specimen collection from ≥80% of AFP cases, in which two specimens are collected ≥24 hours apart, and within 14 days of paralysis onset, and arriving in good condition (received by reverse cold chain and without leakage or desiccation) in a WHO-accredited laboratory.

** Countries were assessed to be at high risk for outbreaks during 2012–2013 based on proximity to countries with WPV-endemic or reestablished transmission in 2012, current or recent civil unrest, or with any population immunity indicator in a high-risk tier. Countries were assessed to be at moderate risk based on any of the population immunity risk criteria suggesting vulnerability.

Reported by

World Health Organization, Regional Office for Africa. Global Immunization Div, Center for Global Health, CDC.

Corresponding contributor: McKenzie Andre, aandre@cdc.gov, 404-553-7615.

Editorial Note

Countries of the African “WPV importation belt” continue to be at risk for WPV outbreaks, as evident by the outbreak in the Horn of Africa that began April 2013. Assessment of the polio-free countries and subnational areas at higher risk

for WPV transmission guides efforts to mitigate the impact of poliovirus transmission after WPV importations or emergence of VDPVs. The qualitative risk assessments allow the WHO Regional Office for Africa and other GPEI partners to prioritize SIA implementation. Risk assessments at the subnational level highlight underperforming areas to prioritize for targeted subnational SIAs. The value of preventive SIAs in risk mitigation in countries in the “WPV importation belt” is recently evident: the only importation-related outbreak identified globally in 2012 was in Niger, in which only a single WPV case was detected. Although risk assessments of countries of

TABLE 2. Risk mitigation activities in countries of the “wild poliovirus (WPV) importation belt” — World Health Organization African Region, 2012–2013

Importation countries	Supplementary immunization activities: national and subnational immunization days (NID / SNID)			Surveillance strengthening activities: national surveillance reviews (SR) program assessments (PA)* or surveillance training activities (ST)	
	Jan 2012–Dec 2012 (NID / SNID)	Jan 2013–June 2013 (NID / SNID)	July 2013–Dec 2013 (NID / SNID) (planned)	Jan 2012–June 2013	July 2013–Dec 2013 (planned)
High-risk countries†					
Benin	3 / 0	2 / 0	2 / 0	SR	
Cameroon	0 / 3	0 / 2	1 / 2	SR	PA, ST
Central African Republic	5 / 2	0 / 0	1 / 2	SR	PA, ST
Chad	3 / 11	3 / 2	2 / 4	SR, ST	PA
Côte d'Ivoire	4 / 0	2 / 0	1 / 0	SR	
Ethiopia	0 / 3	0 / 2	2 / 3		
Guinea-Bissau	1 / 0	1 / 0	1 / 0	SR	
Mali	1 / 6	2 / 1	2 / 1	SR	
Niger	4 / 5	2 / 2	2 / 2	SR, PA	ST
Uganda	0 / 1	0 / 0	0 / 2		
Moderate-risk countries					
Burkina Faso	4 / 1	2 / 1	2 / 0	SR	
Guinea	4 / 1	2 / 0	1 / 0	SR	
Kenya	0 / 6	0 / 2	2 / 6		PA, ST
Liberia	3 / 0	2 / 0	1 / 0	PA	
Mauritania	3 / 0	1 / 0	1 / 0	SR	
Senegal	1 / 0	1 / 0	1 / 0	SR	
Togo	1 / 0	1 / 0	1 / 0		
Subtotal (risk countries)	37 / 39	21 / 12	23 / 22		
Low-risk countries					
Eritrea	1 / 0	0 / 0	2 / 0		
Gambia	1 / 0	1 / 0	1 / 0		
Ghana	1 / 0	1 / 0	1 / 0	SR	
Sierra Leone	3 / 0	0 / 0	1 / 0		
Total	6 / 0	2 / 0	5 / 0		

* Program assessments include assessments done after the occurrence of a case of WPV or circulating vaccine-derived poliovirus and planned comprehensive immunization program reviews.

† Countries were assessed to be at high risk for outbreaks during 2012–2013 based on proximity to countries with WPV-endemic or reestablished transmission in 2012, current or recent civil unrest, or with any population immunity indicator in a high-risk tier. Countries were assessed to be at moderate risk based on any of the population immunity risk criteria suggesting vulnerability.

the WHO EMR had shown Somalia to be at high risk, security limitations prevented access to a large proportion of the population during the SIAs conducted before the outbreak was detected in May 2013. Additionally, in the 4 months since the outbreak was confirmed, preventive SIAs conducted in Kenya and Ethiopia, along with response SIAs conducted after the outbreak was detected, appear to have limited the WPV cases to certain high-risk border areas.

There are limitations associated with how risks are assessed, because many of the population immunity indicators are imprecise in indicating susceptibility overall and in particular, identifying pockets of underimmunized children; for this latter reason, many of the SIAs are not finely geographically targeted. Also, experience has indicated that SIA quality, assessed through the extent of planning, supervision, and delivery of poliovirus vaccine to a high proportion of children, tends to be lower in countries and areas where WPV has not recently circulated. Therefore, although SIAs enhance population

immunity, they do not fully compensate for deficiencies in the delivery of health services and do not remove all risk.

SIA effectiveness has been improved by placing an increased emphasis on supervision and monitoring, which promotes greater accountability at the district and subdistrict levels (7). This has led to the identification and vaccination of children missed during previous SIAs and the formation of more detailed plans to improve subsequent SIAs. Better identification of repeatedly missed subpopulations, such as border populations and nomadic tribes, has led to more inclusive and detailed SIA plans, joint planning sessions between border districts, and improved synchronization of SIAs between countries (7,8).

Strengthening AFP surveillance will not decrease the risk for a WPV importation; however, prompt identification and rapid implementation of appropriate response efforts will limit the size of an outbreak (9). AFP surveillance performance indicators also have limitations in highlighting suboptimal

What is already known on this topic?

Nigeria remains the only polio-endemic country in Africa. However, multiple wild poliovirus (WPV) outbreaks have occurred in the World Health Organization (WHO) African Region (WHO AFR) since 2003, after the importation of indigenous West African WPV into 21 previously polio-free countries comprising a “WPV importation belt” that extends across the continent from the Sahara to the equator.

What is added by this report?

The Global Polio Eradication Initiative partners, including the WHO Regional Office for Africa, assess the risk for transmission of polioviruses after importation into polio-free countries and plan activities to decrease the risk for poliovirus transmission. Countries in the “WPV importation belt” in the WHO AFR deemed to be at high risk for outbreaks were primarily those located near countries with WPV cases in 2012 or with low population immunity indicators where routine vaccination coverage was suboptimal.

What are the implications for public health practice?

Suboptimal health infrastructure is a challenge in virtually all of the countries assessed as high-risk for poliovirus transmission. Insecurity and access barriers are additional challenges that will continue to threaten polio eradication efforts in the WHO AFR. All efforts to mitigate polio risks will need to continue as long as WPV transmission continues in polio-endemic countries. In addition, strengthening acute flaccid paralysis surveillance to promptly detect cases after importation will lead to quicker programmatic response and limit spread of WPV or circulating vaccine-derived polioviruses to other areas.

surveillance (9). Although there are plans to extend environmental surveillance for polioviruses to some high-risk polio-free countries to improve the sensitivity of detecting poliovirus transmission and augment AFP surveillance, implementation of environmental surveillance requires substantial investment in personnel, supplies, and equipment to collect, process, and test specimens (9,10).

Mitigation activities are guided by periodic risk assessments. Plans are continually adapted based on the availability of funds, variation in the vaccine production cycle, and the changing epidemiology of WPV. These variables necessitate that GPEI partners make data-driven decisions to prioritize activities.

Throughout the WHO AFR, civil unrest and insecurity pose an increasing challenge for vaccination teams to access and reach children during SIAs. Insecurity has weakened routine immunization programs, hindered preventive SIAs, and limited AFP surveillance in large portions of countries, such as Mali and the Central African Republic during 2012–2013, and in many subnational areas throughout the region, including large parts of northern Nigeria. Partnering with relief organizations and implementing targeted SIAs as areas become accessible can assist in mitigating risks secondary to insecurity.

Going forward, GPEI partners are attempting to engage all development agencies in coordinated efforts to enhance childhood immunization services to optimize population immunity (10). Addressing funding limitations will be integral to ensuring that mitigation activities continue. All efforts to assess and mitigate risks will continue in the WHO AFR as long as endemic circulation of WPV is occurring in areas with low levels of population immunity.

References

1. CDC. Progress toward eradication of polio—worldwide, January 2011–March 2013. *MMWR* 2013;62:335–8.
2. Lowther SA, Roesel S, O'Connor P, et al. World Health Organization regional assessments of the risks of poliovirus outbreaks. *Risk Analysis* 2013;33:664–79.
3. CDC. Outbreaks following wild poliovirus importations—Europe, Africa, and Asia, January 2009–September 2010. *MMWR* 2010;59:1393–9.
4. CDC. Wild poliovirus type 1 and type 3 importations—15 countries, Africa, 2008–2009. *MMWR* 2009;58:357–62.
5. CDC. Notes from the field: outbreak of poliomyelitis—Somalia and Kenya, May 2013. *MMWR* 2013;62:484.
6. Independent Monitoring Board of the Global Polio Eradication Initiative. Seventh report: May 2013. Geneva, Switzerland: World Health Organization; 2013. Available at http://www.polioeradication.org/portals/0/document/aboutus/governance/imb/8imbmeeting/8imb_report_en.pdf.
7. CDC. Progress toward poliomyelitis eradication—Nigeria, January 2011–September 2012. *MMWR* 2012;61:899–904.
8. Thompson KM, Duintjer Tebbens RJ, Pallansch MA. Evaluation of response scenarios to potential polio outbreaks using mathematical models. *Risk Anal* 2006;26:1541–56.
9. CDC. Evaluating surveillance indicators supporting the Global Polio Eradication Initiative, 2011–2012. *MMWR* 2013;62:270–4.
10. World Health Organization. The polio eradication and endgame strategic plan 2013–2018. Geneva, Switzerland: World Health Organization; 2010. Available at <http://www.polioeradication.org/resource/library/strategyandwork.aspx>.

Announcements

Online NCHHSTP Atlas Updated with County-Level Data

CDC's National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP) recently updated its NCHHSTP Atlas by adding county-level data for human immunodeficiency virus (HIV) and sexually transmitted infections in the United States. The atlas, an interactive, online mapping tool and platform for accessing data collected by NCHHSTP, allows users to observe disease trends and patterns of HIV, acquired immunodeficiency syndrome (AIDS), certain sexually transmitted infections (i.e., chlamydia, gonorrhea, primary and secondary syphilis, and early latent syphilis), tuberculosis, and acute viral hepatitis A, B, and C. The atlas also allows users to create detailed reports, maps, and other graphics based on these surveillance data. The NCHHSTP Atlas is available at <http://www.cdc.gov/nchhstp/atlas>.

National Fall Prevention Awareness Day — September 22, 2013

Each year, one in three adults aged ≥ 65 years falls (1). For older persons, the consequences of falls can be devastating, including reduced mobility and loss of independence (2). Falls are responsible for $>95\%$ of hip fractures, one of the most serious fall injuries (3). In 2010, approximately 258,000 persons aged ≥ 65 years were hospitalized for hip fractures (4). As the U.S. population ages, the number of hip fractures is expected to increase.

However, hip fracture rates are declining among persons aged ≥ 65 years (5). From 1990 to 2010, annual rates decreased 20% for men, from 54.6 to 44.2 fractures per 10,000 men, and nearly 50% for women, from 125.1 to 72.3 per 10,000 women (6). These decreasing rates will partially offset the expected increase in total number of hip fractures as this age group increases.

This year, National Fall Prevention Awareness Day is September 22. As part of the campaign, older adults are encouraged to reduce their chances of falling and being injured by 1) exercising to improve their balance and leg strength; 2) having their doctor or pharmacist review their medications; 3) having their eyes checked annually by an eye doctor; 4) making home safety improvements; 5) getting adequate calcium and vitamin D; and 6) being screened for osteoporosis.

Additional information about preventing falls is available at <http://www.cdc.gov/homeandrecreationalsafety/falls>. CDC also provides information resources for health-care providers in its STEADI (Stopping Elderly Accidents, Deaths & Injuries) tool kit. The online resource, available at <http://www.cdc.gov/injury/steadi>, includes the information and tools to assess, treat, and refer older patients based on their fall risk.

References

1. Tromp AM, Pluijm SMF, Smit JH, et al. Fall-risk screening test: a prospective study on predictors for falls in community-dwelling elderly. *J Clin Epidemiol* 2001;54:837–44.
2. Sterling DA, O'Connor JA, Bonadies J. Geriatric falls: injury severity is high and disproportionate to mechanism. *J Trauma* 2001;50:116–9.
3. Hayes WC, Myers ER, Morris JN, et al. Impact near the hip dominates fracture risk in elderly nursing home residents who fall. *Calcif Tissue Int* 1993;52:192–8.
4. National Hospital Discharge Survey (NHDS), National Center for Health Statistics. Health care use and expenditures. In: Health Data Interactive. Available at <http://www.cdc.gov/nchs/hdi.htm>.
5. Stevens JA, Rudd RA. Declining hip fracture rates in the United States. *Age Ageing* 2010;39:500–3.
6. Stevens JA, Rudd RA. The impact of decreasing U.S. hip fracture rates on future hip fracture estimates. *Osteoporos Int* 2013. Epub April 30, 2013. Available at <http://link.springer.com/article/10.1007%2Fs00198-013-2375-9>.

Announcement

Recommendations Regarding Tobacco Use and Secondhand Smoke Exposure from the Community Preventive Services Task Force

Mass-reach health communication interventions target large audiences through television and radio broadcasts, print media, out-of-home placements (e.g., billboards, movie theaters, and point-of-sale), and digital media to change knowledge, beliefs, attitudes, and behaviors affecting tobacco use. The Community Preventive Services Task Force recommends mass-reach health communication interventions to reduce tobacco use and has posted new information about its systematic review at <http://www.thecommunityguide.org/tobacco/massreach.html>. The task force recommendation is based on strong evidence of effectiveness in 1) decreasing the prevalence of tobacco use, 2) increasing cessation and use of available services such as quitlines, and 3) decreasing initiation of tobacco use among young persons.

Established in 1996 by the U.S. Department of Health and Human Services, the task force is an independent, nonfederal, unpaid panel of public health and prevention experts whose members are appointed by the Director of CDC. The task force provides information for a wide range of decision makers on programs, services, and policies aimed at improving population health. Although CDC provides administrative, research, and technical support for the task force, the recommendations developed are those of the task force and do not undergo review or approval by CDC.

Erratum

Vol. 62, No. 36

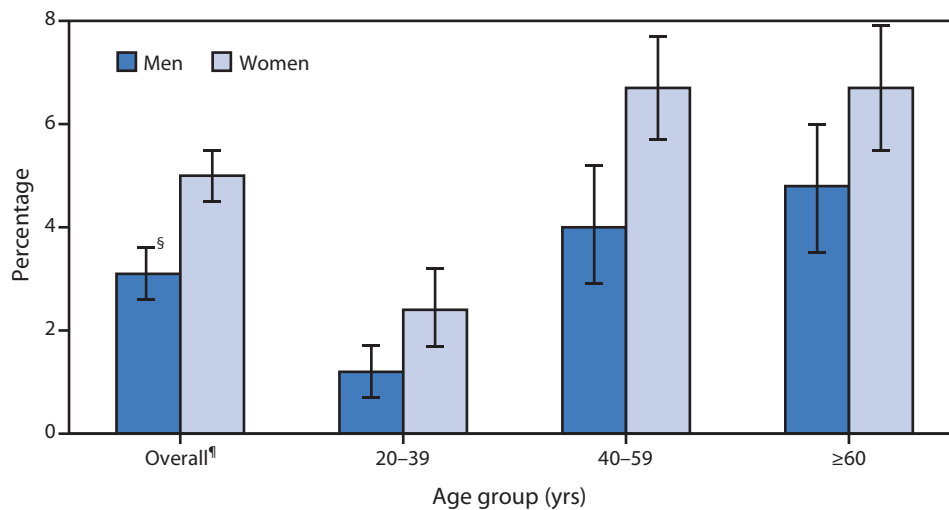
In the report, “Measles — United States, January 1–August 24, 2013,” an error occurred in Figure 2 on page 742.

The three measles cases indicated for Montana should instead be indicated for Missouri.

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Percentage of Adults Aged ≥ 20 Years Who Used Prescription Sleep Aids* in the Past 30 Days,[†] by Age Group and Sex — National Health and Nutrition Examination Survey, United States, 2005–2010



* Includes hypnotic drugs (e.g., butabarbital, chloral hydrate, estazolam, eszopiclone, flurazepam, quazepam, ramelteon, temazepam, triazolam, zaleplon, and zolpidem) and antidepressant drugs with sedative function (e.g., amitriptyline, doxepin, mirtazapine, and trazodone).

[†] Based on response to the question, "Have you taken or used any medicines for which a doctor's or dentist's prescription is needed in the past month?" Respondents who answered affirmatively were asked to report the name, duration of use, and main reason for each product used.

[§] 95% confidence interval.

[¶] The overall estimate is age-adjusted to the 2000 projected U.S. standard population using the age groups 20–39, 40–59, and ≥ 60 years.

During 2005–2010, women were more likely to use a prescription sleep aid than men (5.0% versus 3.1%). Within the three age groups examined, women also were more likely to use a prescription sleep aid than men. For both men and women, adults aged 20–39 years reported lower use of sleep aids than adults aged 40–59 years and ≥ 60 years.

Source: Chong Y, Fryar CD, Gu Q. Prescription sleep aid use among adults: United States, 2005–2010. NCHS data brief no. 127. Hyattsville, MD: US Department of Health and Human Services, CDC; 2013. Available at <http://www.cdc.gov/nchs/data/databriefs/db127.htm>.

Reported by: Yinong Chong, PhD, yichong@cdc.gov, 301-458-4145; Steven M. Frenk, PhD.

Morbidity and Mortality Weekly Report

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available free of charge in electronic format. To receive an electronic copy each week, visit *MMWR's* free subscription page at <http://www.cdc.gov/mmwr/mmwrsubscribe.html>. Paper copy subscriptions are available through the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone 202-512-1800.

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.

All material in the *MMWR* Series is in the public domain and may be used and reprinted without permission; citation as to source, however, is appreciated.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

References to non-CDC sites on the Internet are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of these sites. URL addresses listed in *MMWR* were current as of the date of publication.

U.S. Government Printing Office: 2013-623-030/01024 Region IV ISSN: 0149-2195