

Great American Smokeout — November 21, 2013

The Great American Smokeout, sponsored by the American Cancer Society, is an annual event that encourages smokers to make a plan to quit, or to plan in advance and quit smoking on that day, in an effort to stop permanently (1). This year, the Smokeout will be held on November 21.

Fifty years after the release of the first Surgeon General's report on smoking and health, remarkable progress has been made. Since 1964, smoking prevalence among U.S. adults has been reduced by half. Unfortunately, tobacco use remains the leading preventable cause of disease, disability, and death in the United States (2).

In 2010, nearly two out of three adult smokers wanted to quit, and more than half had made a quit attempt for >1 day in the preceding year (3). However, an estimated one out of five U.S. adults still smokes (2).

Quitting smoking is beneficial to health at any age and has immediate and long-term benefits. Getting help through counseling or medications can double or triple the chances of quitting successfully (4).

Additional information and support for quitting is available by telephone (800-QUIT-NOW [800-784-8669]). Additional quit support and real stories of persons who have quit successfully are available on CDC's Tips from Former Smokers website at <http://www.cdc.gov/tips>.

References

1. American Cancer Society. Great American Smokeout. Atlanta, GA: American Cancer Society; 2013. Available at <http://www.cancer.org/healthy/stayawayfromtobacco/greatamericansmokeout>.
2. CDC. Current cigarette smoking among adults—United States, 2011. *MMWR* 2012;61:889–94.
3. CDC. Quitting smoking among adults—United States, 2001–2010. *MMWR* 2011;60:1513–9.
4. 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.surgeongeneral.gov/tobacco/treating_tobacco_use08.pdf.

Tobacco Product Use Among Middle and High School Students — United States, 2011 and 2012

Nearly 90% of adult smokers in the United States began smoking by age 18 years (1). To assess current tobacco product use among youths, CDC analyzed data from the 2012 National Youth Tobacco Survey (NYTS). This report describes the results of that analysis, which found that, in 2012, the prevalence of current tobacco product use among middle and high school students was 6.7% and 23.3%, respectively. After cigarettes, cigars were the second most commonly used tobacco product, with prevalence of use at 2.8% and 12.6%, respectively. From 2011 to 2012, electronic cigarette use increased significantly among middle school (0.6% to 1.1%) and high school (1.5% to 2.8%) students, and hookah use increased among high school students (4.1% to 5.4%). **During the same period, significant decreases**

INSIDE

- 898 Use of Japanese Encephalitis Vaccine in Children: Recommendations of the Advisory Committee on Immunization Practices, 2013
- 901 Notes from the Field: Late Vitamin K Deficiency Bleeding in Infants Whose Parents Declined Vitamin K Prophylaxis — Tennessee, 2013
- 903 Notes from the Field: Primary Amebic Meningoencephalitis Associated with Ritual Nasal Rinsing — St. Thomas, U.S. Virgin Islands, 2012
- 904 Notes from the Field: Outbreak of Tuberculosis Associated with a Newly Identified *Mycobacterium tuberculosis* Genotype — New York City, 2010–2013
- 905 Announcements
- 907 QuickStats

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



occurred in bidi* and kretek† use among middle and high school students, and in dissolvable tobacco use among high school students. A substantial proportion of youth tobacco use occurs with products other than cigarettes, so monitoring and prevention of youth tobacco use needs to incorporate other products, including new and emerging products. Implementing evidence-based interventions can prevent and reduce tobacco use among youths as part of comprehensive tobacco control programs. In addition, implementation of the 2009 Family Smoking Prevention and Tobacco Control Act, which granted the Food and Drug Administration (FDA) the authority to regulate the manufacture, distribution, and marketing of tobacco products (1–3), also is critical to addressing this health risk behavior.

*The question to assess past 30 day use of bidis changed between 2011 and 2012. In 2011, the bidis question was “In the past 30 days, on how many days did you smoke bidis?” Students selected among “0 days,” “1 or 2 days,” “3 to 9 days,” “10 to 19 days,” “20 to 29 days,” or “all 30 days.” In 2012, the bidis question was “In the past 30 days, which of the following products have you used on at least one day?” Students could select different products, of which “bidis (small brown cigarettes wrapped in a leaf)” was a possible selection. This change might have affected the results for bidis.

†The question to assess past 30 day use of kreteks changed between 2011 and 2012. In 2011, the kreteks question was “In the past 30 days, on how many days did you smoke kreteks?” Students selected among “0 days,” “1 or 2 days,” “3 to 9 days,” “10 to 19 days,” “20 to 29 days,” or “all 30 days.” In 2012, the bidis question was “In the past 30 days, which of the following products have you used on at least one day?” Students could select different products, of which “clove cigarettes (kreteks)” was a possible selection. This change might have affected the results for kreteks.

NYTS is a school-based, self-administered, pencil-and-paper questionnaire administered to U.S. middle school (grades 6–8) and high school (grades 9–12) students to collect information on key tobacco control outcome indicators used to monitor the impact of comprehensive tobacco control policies and programs (4) and FDA’s newly granted regulatory authority. NYTS was conducted in 2000, 2002, 2004, 2006, 2009, 2011, and 2012. The 2012 NYTS used a three-stage cluster sampling procedure to generate a cross-sectional, nationally representative sample of students in grades 6–12. This report includes 2011 and 2012 NYTS data to provide an updated definition of current tobacco use, which now also includes hookahs, snus, dissolvable tobacco, and electronic cigarettes, to take into account nonconventional products that are new to the market or are increasing in popularity; data for these four products were first collected in 2011. The previous definition for current tobacco use did not include all of these products, thus yielding slightly lower estimates of current tobacco use. For example, in 2011, the previous definition for overall current tobacco use resulted in estimates of 7.1% for middle school and 23.2% for high school students (5), whereas the new definition resulted in 2011 estimates of 7.5% for middle school and 24.3% for high school students (Table).

Of the 284 schools selected for the 2012 NYTS, 228 (80.3%) participated, resulting in a sample of 24,658 (91.7%) among 26,873 eligible students; the overall response rate was 73.6%. The 2011 NYTS had a comparable overall response rate of 72.7% (5). Respondents were asked about their current use of

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TABLE. Percentage of middle and high school students currently using* tobacco products, by school level, sex, race/ethnicity, and product type — National Youth Tobacco Survey, United States, 2011 and 2012

School level/Product type	Total				Sex							
	2011		2012		Females		Males					
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)		
Middle school												
Tobacco [†]	7.5	(6.5–8.8)	6.7	(5.8–7.7)	5.9	(4.7–7.4)	5.6	(4.7–6.7)	9.0	(7.9–10.3)	7.8	(6.7–9.0)
Cigarettes	4.3	(3.5–5.2)	3.5	(2.8–4.3)	4.0	(3.1–5.2)	3.2	(2.5–4.0)	4.5	(3.7–5.5)	3.8	(3.0–4.7)
Cigars	3.5	(2.8–4.2)	2.8	(2.4–3.4)	2.5	(1.9–3.4)	2.4	(1.9–3.2)	4.3	(3.4–5.4)	3.2	(2.7–3.8)
Smokeless tobacco	2.2	(1.8–2.7)	1.7	(1.3–2.1)	1.4	(1.0–2.0)	1.2	(0.8–1.6)	3.0	(2.3–3.8)	2.2	(1.7–2.9)
Pipes	2.2	(1.7–2.9)	1.8	(1.4–2.3)	1.8	(1.3–2.5)	1.7	(1.3–2.3)	2.7	(2.1–2.5)	1.9	(1.4–2.4)
Bidis	1.7	(1.3–2.2)	0.6	(0.5–0.7) [§]	1.4	(1.0–1.9)	0.4	(0.3–0.7) [§]	1.9	(1.4–2.6)	0.7	(0.5–1.0) [§]
Kreteks	1.1	(0.9–1.4)	0.5	(0.4–0.7) [§]	0.9	(0.6–1.3)	0.4	(0.3–0.7) [§]	1.3	(1.0–1.6)	0.6	(0.4–0.9) [§]
Hookahs	1.0	(0.8–1.4)	1.3	(1.0–1.7)	1.0	(0.6–1.6)	1.0	(0.7–1.4)	1.1	(0.7–1.5)	1.5	(1.1–2.2)
Snus	0.9	(0.6–1.2)	0.8	(0.6–1.0)	0.8	(0.5–1.2)	0.6	(0.4–0.9)	1.0	(0.6–1.4)	1.0	(0.7–1.4)
Dissolvable tobacco	0.3	(0.2–0.4)	0.5	(0.4–0.8) [§]	0.3	(0.2–0.5)	0.4	(0.2–0.6)	0.3	(0.1–0.5)	0.7	(0.4–1.1) [¶]
Electronic cigarettes	0.6	(0.4–0.9)	1.1	(0.9–1.5) [§]	0.4	(0.2–0.7)	0.8	(0.6–1.1) [§]	0.7	(0.4–1.3)	1.5	(1.1–2.1) [§]
High school												
Tobacco [†]	24.3	(22.1–26.6)	23.3	(21.6–25.2)	19.0	(17.0–21.1)	18.1	(16.2–20.1)	29.4	(26.6–32.4)	28.3	(26.2–30.6)
Cigarettes	15.8	(13.7–18.1)	14.0	(12.5–15.7)	13.8	(11.7–16.2)	11.7	(10.2–13.4)	17.7	(15.2–20.4)	16.3	(14.5–18.3)
Cigars	11.6	(10.5–12.7)	12.6	(11.4–13.9)	7.4	(6.3–8.6)	8.4	(7.2–9.8)	15.7	(14.3–17.2)	16.7	(15.0–18.5)
Smokeless tobacco	7.3	(5.9–9.0)	6.4	(5.5–7.5)	1.6	(1.2–2.2)	1.5	(1.1–2.1)	12.9	(10.4–15.9)	11.2	(9.5–13.0)
Pipes	4.0	(3.4–4.6)	4.5	(4.0–5.2)	2.8	(2.2–3.4)	3.2	(2.7–3.9)	5.1	(4.3–6.0)	5.8	(5.0–6.7)
Bidis	2.0	(1.6–2.5)	0.9	(0.7–1.1) [§]	1.0	(0.7–1.4)	0.5	(0.3–0.7) [§]	2.9	(2.3–3.7)	1.3	(1.0–1.7) [§]
Kreteks	1.7	(1.4–2.0)	1.0	(0.8–1.2) [§]	0.8	(0.6–1.2)	0.5	(0.3–0.7) [§]	2.4	(1.9–2.9)	1.5	(1.1–1.9) [§]
Hookahs	4.1	(3.4–5.0)	5.4	(4.6–6.3) [§]	3.5	(2.8–4.4)	4.5	(3.7–5.4)	4.8	(3.7–6.1)	6.2	(5.3–7.3)
Snus	2.9	(2.3–3.7)	2.5	(2.0–3.0)	0.8	(0.5–1.1)	0.9	(0.7–1.3)	5.1	(3.9–6.6)	3.9	(3.2–4.9)
Dissolvable tobacco	0.4	(0.3–0.6)	0.8	(0.6–1.0) [§]	0.1	(0.1–0.4)	0.6	(0.4–0.9) [¶]	0.6	(0.4–1.0)	1.0	(0.8–1.4)
Electronic cigarettes	1.5	(1.2–2.0)	2.8	(2.3–3.5) [§]	0.7	(0.5–1.0)	1.9	(1.5–2.4) [§]	2.3	(1.7–3.1)	3.7	(2.9–4.8) [§]

See table footnotes on page 896.

cigarettes, cigars[§] (defined as cigars, cigarillos, or little cigars), smokeless tobacco, pipes, bidis, kreteks, hookahs, snus, dissolvable tobacco, and electronic cigarettes. For each product, current use was defined as using on ≥ 1 day of the past 30 days.

Data were adjusted for nonresponse and weighted to provide national prevalence estimates with 95% confidence intervals for current tobacco use overall and by product, school level, sex, and race/ethnicity. Point estimate differences between 2011 and 2012 were assessed using a two-tailed t-test for significance ($p < 0.05$).

In 2012, 6.7% of middle students reported current use of any tobacco product (Table). The most commonly used forms of tobacco were cigarettes (3.5%), cigars (2.8%), pipes (1.8%), smokeless tobacco (1.7%), hookahs (1.3%), electronic cigarettes (1.1%), snus (0.8%), bidis (0.6%), kreteks (0.5%), and dissolvable tobacco (0.5%). Among high school students, 23.3% reported current use of any tobacco product. The most commonly used forms of tobacco were cigarettes (14.0%), cigars (12.6%), smokeless tobacco (6.4%), hookahs (5.4%),

pipes (4.5%), electronic cigarettes (2.8%), snus (2.5%), kreteks (1.0%), bidis (0.9%), and dissolvable tobacco (0.8%).

During 2011–2012, among middle school students, for current electronic cigarette use, significant increases were observed overall (0.6% to 1.1%) and among females (0.4% to 0.8%), males (0.7% to 1.5%), and Hispanics (0.6% to 2.0%) (Table). For hookahs, a significant increase was observed among Hispanics (1.7% to 3.0%).

During 2011–2012, among high school students, for electronic cigarette use, significant increases were observed overall (1.5% to 2.8%) and among females (0.7% to 1.9%), males (2.3% to 3.7%), non-Hispanic whites (1.8% to 3.4%), and Hispanics (1.3% to 2.7%). For hookahs, significant increases were observed overall (4.1% to 5.4%) and among non-Hispanic whites (4.3% to 6.1%). For cigars, a significant increase in use was observed among non-Hispanic blacks (11.7% to 16.7%).

Reported by

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[§] The heading for the cigar section of the questionnaire changed between 2011 and 2012. In 2011, the heading was “Cigars.” In 2012, the heading was “Cigars, cigarillos, or little cigars, such as Black and Milds, Swisher Sweets, Dutch Masters, White Owl, or Phillies Blunts,” and the question on ever use of cigars also included brand names. This change might have affected the results for cigars.

TABLE. (Continued) Percentage of middle and high school students currently using* tobacco products, by school level, sex, race/ethnicity, and product type — National Youth Tobacco Survey, United States, 2011 and 2012

School level/ Product type	Race/Ethnicity									
	White, non-Hispanic		Black, non-Hispanic		Hispanic		Other race, non-Hispanic			
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Middle school										
Tobacco [†]	6.2 (5.1–7.4)	5.1 (4.2–6.3)	8.5 (6.6–10.9)	7.7 (5.9–10.1)	11.5 (10.2–13.1)	10.5 (8.6–12.8)	6.1 (3.8–9.9)	3.1 (1.7–5.4)		
Cigarettes	3.8 (2.8–5.1)	3.1 (2.4–4.0)	3.6 (2.6–5.0)	2.6 (1.7–4.0)	6.7 (5.6–8.0)	5.4 (4.2–7.1)	3.4 (2.0–5.8)	1.7 (0.8–3.6) [¶]		
Cigars	2.3 (1.7–3.0)	1.6 (1.2–2.0)	5.7 (4.3–7.4)	5.0 (3.8–6.6)	6.1 (4.9–7.4)	4.9 (3.8–6.4)	1.6 (0.8–3.2)	1.5 (0.7–3.1) [¶]		
Smokeless tobacco	2.3 (1.8–2.9)	1.6 (1.1–2.2)	1.0 (0.5–2.1)	0.6 (0.3–1.3) [¶]	2.9 (2.3–3.6)	2.4 (1.7–3.4)	2.4 (1.2–4.8)	1.4 (0.7–3.1) [¶]		
Pipes	1.5 (1.1–2.2)	1.2 (0.8–1.7)	1.3 (0.8–2.1)	1.2 (0.6–2.2) [¶]	5.0 (4.2–6.1)	3.7 (2.7–5.1)	2.5 (1.2–5.0)	0.5 (0.2–1.1) [¶]		
Bidis	1.0 (0.7–1.5)	0.3 (0.2–0.5) [¶]	1.9 (1.1–3.2)	0.6 (0.4–1.0)	3.5 (2.6–4.6)	1.2 (0.8–1.8) [§]	1.2 (0.5–2.8)	0.7 (0.2–2.4) [¶]		
Kreteks	0.6 (0.4–0.6)	0.3 (0.2–0.5)	0.9 (0.5–1.6)	0.2 (0.1–0.7) [¶]	2.5 (2.0–3.3)	1.0 (0.6–1.7) [§]	1.8 (0.7–4.3)	0.7 (0.2–2.4) [¶]		
Hookahs	0.9 (0.6–1.4)	0.8 (0.6–1.2)	0.9 (0.5–1.7)	0.9 (0.4–1.8) [¶]	1.7 (1.2–2.3)	3.0 (2.2–4.1) [§]	0.1 (0.0–0.5)	0.3 (0.1–1.6) [¶]		
Snus	1.0 (0.7–1.4)	0.7 (0.5–1.0)	0.6 (0.2–1.3)	0.4 (0.1–0.9) [¶]	1.0 (0.6–1.5)	1.1 (0.7–1.7)	0.7 (0.2–2.5)	0.4 (0.1–2.8) [¶]		
Dissolvable tobacco	0.2 (0.1–0.5)	0.4 (0.2–0.7) [¶]	0.4 (0.1–1.2)	0.5 (0.2–1.5) [¶]	0.2 (0.1–0.5)	1.0 (0.6–1.6) [¶]	0.4 (0.1–2.4)	0.1 (0.0–0.5) [¶]		
Electronic cigarettes	0.6 (0.4–1.0)	0.9 (0.6–1.3)	0.4 (0.2–1.0)	1.1 (0.6–2.2) [¶]	0.6 (0.4–1.1)	2.0 (1.4–2.9) [§]	0.7 (0.2–2.6)	0.3 (0.1–0.8) [¶]		
High school										
Tobacco [†]	26.6 (23.6–29.8)	24.6 (22.3–27.0)	18.9 (15.6–22.8)	22.6 (19.7–25.8)	23.8 (21.2–26.5)	22.5 (19.5–25.6)	13.9 (10.5–18.3)	13.7 (9.9–18.8)		
Cigarettes	17.6 (14.7–20.9)	15.4 (13.2–17.8)	10.6 (7.6–14.6)	9.6 (7.6–12.0)	15.8 (13.9–17.8)	14.3 (12.0–16.9)	8.9 (6.2–12.5)	8.7 (5.9–12.5)		
Cigars	12.1 (10.7–13.6)	12.2 (10.8–13.8)	11.7 (9.8–13.9)	16.7 (14.4–19.3) [§]	11.3 (9.8–13.1)	12.4 (10.6–14.4)	5.7 (4.0–8.1)	6.3 (4.4–9.0)		
Smokeless tobacco	9.2 (7.4–11.5)	8.1 (6.9–9.5)	3.0 (1.8–5.1)	2.2 (1.5–3.2)	5.1 (3.8–6.8)	5.1 (3.8–6.8)	4.0 (2.4–6.6)	3.4 (2.3–5.2)		
Pipes	3.5 (2.9–4.4)	4.5 (3.8–5.4)	2.4 (1.5–3.8)	2.9 (1.8–4.5)	6.3 (5.2–7.7)	6.2 (5.2–7.4)	3.4 (1.7–6.6)	2.4 (1.4–3.9) [¶]		
Bidis	1.4 (1.0–2.0)	0.7 (0.5–1.0) [§]	2.0 (1.2–3.2)	0.8 (0.4–1.7) [¶]	3.7 (2.9–4.8)	1.4 (0.9–2.2) [§]	1.8 (1.0–3.4)	0.4 (0.2–1.1) [¶]		
Kreteks	1.4 (1.0–2.0)	1.1 (0.8–1.5)	1.3 (0.8–2.2)	0.6 (0.3–1.1) [¶]	2.5 (1.9–3.3)	0.9 (0.6–1.4) [§]	2.0 (1.0–4.0)	0.3 (0.1–0.7) [¶]		
Hookahs	4.3 (3.4–5.4)	6.1 (5.2–7.2) [§]	1.7 (0.9–3.0)	2.1 (1.6–2.9)	5.1 (4.1–6.3)	6.6 (5.1–8.5)	4.8 (2.5–9.0)	2.5 (1.5–4.1) [¶]		
Snus	3.7 (2.8–4.9)	3.3 (2.6–4.2)	0.7 (0.3–1.5)	0.6 (0.3–1.1) [¶]	2.3 (1.7–3.1)	1.8 (1.3–2.5)	1.7 (0.7–3.8)	0.8 (0.4–1.6) [¶]		
Dissolvable tobacco	0.3 (0.1–0.5)	0.7 (0.5–0.9) [¶]	0.3 (0.1–1.2)	0.8 (0.4–1.3) [¶]	0.8 (0.5–1.3)	1.4 (1.0–2.1)	0.6 (0.1–2.9)	0.5 (0.2–1.2) [¶]		
Electronic cigarettes	1.8 (1.3–2.4)	3.4 (2.7–4.2) [§]	0.8 (0.3–1.7)	1.1 (0.7–1.9) [¶]	1.3 (0.8–2.1)	2.7 (1.9–3.8) [§]	0.6 (0.3–1.2)	2.2 (0.9–5.8) [¶]		

Abbreviation: CI = confidence interval.

* Current use of cigarettes was determined by asking, "During the past 30 days, on how many days did you smoke cigarettes?" Current use of cigars was determined by asking, "During the past 30 days, on how many days did you smoke cigars, cigarillos, or little cigars?" Current use of smokeless tobacco was determined by asking, "During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip?" Current use of a pipe was determined by asking, "During the past 30 days, on how many days did you smoke tobacco in a pipe?" In 2011, current use of bidis and kreteks was determined by asking, "During the past 30 days, on how many days did you smoke bidis?" and "During the past 30 days, on how many days did you smoke kreteks?" In 2012, current use of bidis and kreteks was determined by asking, "During the past 30 days, which of the following products (bidis and kreteks) have you used on at least 1 day?" Current use of hookahs, snus, dissolvable tobacco, and electronic cigarettes was determined by asking, "During the past 30 days, which of the following products (hookah, snus, dissolvable tobacco, and electronic cigarettes) have you used on at least 1 day?"

[†] Includes use for ≥ 1 day in the past 30 days of any of the following: cigarettes, cigars, smokeless tobacco, tobacco pipes, bidis, kreteks, hookahs, snus, dissolvable tobacco, or electronic cigarettes.

[§] Difference between 2011 and 2012 was statistically significant by t-test ($p < 0.05$).

[¶] Data are statistically unreliable because sample size < 50 or relative standard error > 0.3 on at least 1 year's data; therefore, no t-test was performed.

Editorial Note

The findings in this report indicate that during 2011–2012 significant increases occurred in current use of nonconventional tobacco products, such as electronic cigarettes and hookahs, among middle and high school students; in addition, an increase in cigar use occurred among non-Hispanic black high school students. During this same period, overall current use of some tobacco products, such as bidis and kreteks, significantly decreased. These findings indicate that more efforts are needed to monitor and prevent the use of both conventional and nonconventional tobacco products among youths.

During 2011–2012, cigar use increased significantly among non-Hispanic black high school students to 16.7%, more than doubling the 2009 estimate (6). Further, cigar use among high school males (16.7%) was approximately double that of high school females (8.4%) and similar to cigarette use among high school

males (16.3%). Cigars include traditional premium cigars as well as cigarillos and "little cigars," which are similar to cigarettes in terms of appearance, but depending on their weight, can be taxed at lower rates and legally sold with certain flavors that are banned from cigarettes (7). Youths are known to have higher rates of cigar use than adults, which might be related to the lower price of some cigars (e.g., cigarillos and "little cigars") relative to cigarettes, or the marketing of flavored cigars that might appeal to youths (8). Significant increases also were observed in overall use of current electronic cigarettes (9) and hookahs. Current use of electronic cigarettes doubled among middle and high school females, middle school males, and Hispanic high school students. Among non-Hispanic white high school students, this increase was slightly less than double (1.8% to 3.4%), and among high school males, this increase was slightly more than 60% (2.3 to 3.7). For current hookah use, an increase of more than 75%

What is already known on this topic?

Nearly 90% of adult smokers began smoking by age 18 years.

What is added by this report?

Although decreases in the use of certain tobacco products (bidis and kreteks) have been observed, current cigar use has increased among non-Hispanic black high school students (11.7% to 16.7%), and the use of nonconventional products, such as electronic cigarettes, have increased among middle school (0.6% to 1.1%) and high school (1.5% to 2.8%) students.

What are the implications for public health practice?

Current use of cigars and nonconventional tobacco products need to be monitored at local, state, and national levels. This is especially true for nonconventional tobacco products and specific population subgroups. To reduce tobacco use among youths, national and state tobacco control programs can continue to implement evidence-based strategies, including those that will work in coordination with the Food and Drug Administration to regulate the manufacture, distribution, and marketing of tobacco products.

(1.7% to 3.0%) was observed for Hispanic middle school students; among high school students, an overall increase of more than 30% (4.1% to 5.4%) was observed, but for non-Hispanic whites, this increase was more than 40% (4.3% to 6.1%). The increase in use of electronic cigarettes and hookah tobacco could be attributed to low price, an increase in marketing, availability, and visibility of these products, and the perception that these tobacco products might be “safer” alternatives to cigarettes. Cigars, electronic cigarettes, hookah tobacco, and certain other new types of tobacco products are not currently subject to FDA regulation. FDA has stated it intends to issue a proposed rule that would deem products meeting the statutory definition of a “tobacco product” to be subject to the Federal Food, Drug, and Cosmetic Act.[‡]

The findings in this report are subject to at least six limitations. First, data were only collected from youths who attended either public or private schools and might not be generalizable to all middle and high school-aged youths. Second, data were self-reported; thus, the findings are subject to recall and response bias. Third, current tobacco use was defined by including students who responded to questions about at least one of the 10 tobacco products but might have had missing responses to any of the other tobacco products that were assessed; missing responses were considered as nonuse, which might have resulted in conservative estimates. Fourth, in 2012, the question wording for bidis and kreteks was modified, and cigar brand examples were added to the heading and ever cigar use question of the survey; therefore, any observed changes in prevalence estimates across years might be attributed in part to these wording

modifications. Fifth, the NYTS overall response rate of 73.6% in 2012 and 72.7% in 2011 might have resulted in nonresponse bias, even after adjustment for nonresponse. Finally, estimates might differ from those derived from other youth surveillance systems, in part because of differences in survey methodology, survey type and topic, and age and setting of the target population. However, overall relative trends are similar across the various youth surveys (1).

Effective, population-based interventions for preventing tobacco use among youths are outlined in the Surgeon General’s report (1) and the World Health Organization’s MPOWER package (10). Interventions include increasing the price of all tobacco products, implementing 100% comprehensive smoke-free laws and policies in workplaces and public places, warning about the dangers of all tobacco use with tobacco use prevention media campaigns, increasing access to help quitting, and enforcing restrictions on all tobacco product advertising, promotion, and sponsorship. Interventions are best implemented as part of comprehensive tobacco control programs, which are effective in decreasing tobacco use in the United States (2). Full implementation of comprehensive tobacco control programs at CDC-recommended funding levels, in coordination with FDA regulations of tobacco products, would be expected to result in further reductions in tobacco use and changes in social norms regarding the acceptability of tobacco use among U.S. youths (1,2,10).

References

1. US Department of Health and Human Services. Preventing tobacco use among youth and young adults. Atlanta, GA: US Department of Health and Human Services, CDC; 2012. Available at http://www.cdc.gov/tobacco/data_statistics/sgr/2012/index.htm.
2. 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.
3. CDC. CDC Grand Rounds: current opportunities in tobacco control. MMWR 2010;59:487–92.
4. CDC. Key outcome indicators for evaluating comprehensive tobacco control programs. Atlanta, GA: US Department of Health and Human Services, CDC; 2005. Available at http://www.cdc.gov/tobacco/tobacco_control_programs/surveillance_evaluation/key_outcome/pdfs/frontmaterial.pdf.
5. CDC. Current tobacco use among middle and high school students—United States, 2011. MMWR 2012;61:581–5.
6. CDC. Tobacco use among middle and high school students—United States, 2000–2009. MMWR 2010;59:1063–8.
7. United States Government Accountability Office. Tobacco taxes: large disparities in rates for smoking products trigger significant market shifts to avoid higher taxes (GAO-12-475). Washington, DC: United States Government Accountability Office; 2012. Available at <http://www.gao.gov/products/gao-12-475>.
8. King B, Tynan M, Dube S, Arrazola R. Flavored-little-cigar and flavored-cigarette use among U.S. middle and high school students. J Adolesc Health 2013 [Epub ahead of print].
9. CDC. Notes from the field: electronic cigarette use among middle and high school students—United States, 2011–2012. MMWR 2013;62:729–30.
10. World Health Organization. WHO report on the global tobacco epidemic, 2008—the MPOWER package. Geneva, Switzerland: World Health Organization; 2008. Available at http://www.who.int/tobacco/mpower/mpower_report_full_2008.pdf.

[‡]FDA has expressed its intent to assert jurisdiction over all tobacco products. Additional information available at <http://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201304&RIN=0910-AG38>.

Use of Japanese Encephalitis Vaccine in Children: Recommendations of the Advisory Committee on Immunization Practices, 2013

On June 19, 2013, the Advisory Committee on Immunization Practices (ACIP) voted to extend existing recommendations for use of inactivated Vero cell culture-derived Japanese encephalitis (JE) vaccine (JE-VC) (Ixiaro, Intercell Biomedical) to include children aged 2 months through 16 years (1). The ACIP JE Vaccine Workgroup reviewed the epidemiology of JE in travelers and evaluated published and unpublished data on JE-VC immunogenicity and safety in adults and children. The evidence for benefits and risks associated with JE-VC vaccination of children was evaluated using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) framework (2,3). This report summarizes the evidence considered by ACIP and outlines the recommendations for use of JE-VC in children traveling to JE-endemic countries.

JE Epidemiology and Risk for Disease in Travelers

JE virus, a mosquito-borne flavivirus, is an important cause of encephalitis in Asia (4). JE is a severe disease with a case fatality rate of 20%–30% and neurologic or psychiatric sequelae in 30%–50% of survivors (4). Although no specific treatment is available, the disease is vaccine-preventable.

The risk for JE for most travelers to Asia is very low, but varies based on destination, duration, season, and activities (4,5). The overall incidence of JE among persons from nonendemic countries traveling to Asia is estimated to be less than one case per 1 million travelers. However, the risk for JE among expatriates and travelers who stay for prolonged periods in rural areas with active JE virus transmission might be similar to the risk among the susceptible resident population (5–50 cases per 100,000 children per year) (4). Recurrent travelers or travelers on brief trips might be at increased risk if they have extensive outdoor or nighttime exposure in rural areas during periods of active transmission. Short-term travelers whose visits are restricted to major urban areas are at minimal risk for JE.

JE Vaccine in the United States

JE-VC is the only JE vaccine licensed and available in the United States. An inactivated mouse brain-derived vaccine (JE-MB [JE-VAX]) previously was available and recommended for use in adults and children aged ≥ 1 year but is no longer being produced. In 2009, JE-VC was licensed and recommended for use in persons aged ≥ 17 years (4). In May 2013, the Food and Drug Administration (FDA) licensed JE-VC for use in children aged 2 months through 16 years (6).

Dosage, Administration, and Schedule

The primary series for JE-VC is 2 intramuscular doses administered 28 days apart. For children aged 2 months through 2 years, each dose is 0.25 mL, and for adults and children aged ≥ 3 years, each dose is 0.5 mL. For persons aged ≥ 17 years, ACIP recommends that if the primary series of JE-VC was administered >1 year previously, a booster dose may be given before potential JE virus exposure (7). Although studies are being conducted on the need for a booster dose following a primary series of JE-VC in children, data are not yet available.

JE-VC Licensure and Usage in Adults

No efficacy data are available for JE-VC. However, a JE virus 50% plaque reduction neutralization test (PRNT₅₀) titer of ≥ 10 is an accepted immunologic correlate of protection (8,9). JE-VC was licensed based on its ability to induce seroprotective JE virus neutralizing antibody titers, a noninferiority comparison of safety and immunogenicity with JE-MB, and safety evaluations in approximately 5,000 adults (10–12). Since JE-VC was licensed in 2009, approximately 375,000 doses have been distributed in the United States for use in adults and no safety concerns have been identified (13,14).

JE-VC Immunogenicity in Children

The pivotal pediatric clinical trial of JE-VC was conducted in children aged 2 months through 17 years in the Philippines (3,15,16). Among children randomly assigned to receive 2 age-appropriate doses of JE-VC, 384 (100%) of 385 were seroprotected at 28 days after the second dose (95% confidence interval [CI] = 96%–100%) (Table). At 6 months after completing the primary series, 134 (88%; CI = 82%–92%) of 152 children aged 2 months through 2 years and 224 (95%; CI = 91%–97%) of 237 children aged 3–17 years had protective neutralizing antibodies.

In a randomized, controlled trial conducted in India among children aged 1 and 2 years, 22 (96%; CI = 87%–100%) of 23 children were seroprotected at 28 days after receiving two 0.25 mL doses of JE-VC (3,15–17). No statistically significant differences were detected in the seroprotection rates between this group and children who received two 0.5 mL doses of JE-VC (20/21; 95%) (CI = 86%–100%) or 3 doses of an inactivated mouse brain-derived JE vaccine produced by the Korean Green Cross (10/11, 91%) (CI = 74%–100%).

In an observational study of children from nonendemic countries, all 51 children in the interim analysis had protective

TABLE. Seroprotection (PRNT₅₀ titer ≥10) at 1 month after a 2-dose primary series of inactivated Vero cell culture–derived Japanese encephalitis vaccine (JE-VC) administered according to the dose and schedule approved by the Food and Drug Administration (FDA)*

Study location	Age group	0.25 mL dose		0.5 mL dose	
		No.	(%)	No.	(%)
Philippines	2 mos–17 yrs	147/148	(99) [†]	237/237	(100)
India	1–2 yrs	22/23	(96)	—	— [§]
United States/Europe/Australia	2 mos–17 yrs	5/5	(100)	46/46	(100)

Abbreviation: PRNT₅₀ = 50% plaque reduction neutralization test.

* For children aged 2 months–2 years, two 0.25 mL doses administered 28 days apart; for children aged 3–17 years, two 0.5 mL doses administered 28 days apart.

[†] Of an additional 98 children aged 3–11 years who received two 0.25 mL doses, 94 (96%) were seroprotected at 1 month after the second dose.

[§] Of 21 children aged 1–2 years who received two 0.5 mL doses, 20 (95%) were seroprotected at 1 month after the second dose; the FDA-approved dose for children aged 1–2 years is 0.25 mL.

neutralizing antibodies at 28 days after the second dose of JE-VC (Table) (3,15,16). All 18 children evaluated remained seroprotected at 6 months after completing the primary series.

JE-VC Safety Data for Children

In the open-label trial in the Philippines, 195 infants aged 2–11 months were randomly assigned to receive JE-VC (N = 131) or 7-valent pneumococcal conjugate vaccine (N = 64). An additional 1,674 children, aged 1–17 years, were randomly assigned to receive JE-VC (N = 1,280) or hepatitis A vaccine (N = 394) (3,15,16). The incidences of local, systemic, medically attended, and FDA-defined serious adverse events were similar between children who received JE-VC or the comparison vaccines. Overall, 9% (122/1,411) of JE-VC recipients had fever (≥100.4°F [≥38.0°C]) within 7 days after the first dose and 6% (84/1,405) had fever within 7 days after the second dose. Within 1 month after either dose, four (<1%) recipients had urticaria or hypersensitivity reactions, and five (<1%) had neurologic adverse events, including febrile seizures (N = 3), drooling (N = 1), and dizziness (N = 1); all were similar to rates for recipients of the comparison vaccines. Among the 1,411 children who received JE-VC, 23 (2%) reported a serious adverse event within 7 months of the first dose. The most common serious adverse events were pneumonia (N = 6) and febrile seizures (N = 5). Only three serious adverse events were reported within 2 weeks after a dose of JE-VC, including one report each of a febrile convulsion, cellulitis, and gastroenteritis. One death resulted from suspected bacterial meningitis and pneumonia in a male aged 12 years at 4 months after the second dose of JE-VC. No other neurologic or hypersensitivity events were reported as serious adverse events.

Among the 48 children aged 1 and 2 years who were randomly assigned to receive JE-VC in India, five (10%) reported injection site tenderness, and one (2%) reported fever within 7 days after either dose (3,15–17). The only unsolicited adverse events were one report each of skin lesion and skin rash. No serious adverse events or deaths were reported.

In the observational study of children aged 2 months through 17 years from nonendemic countries, among 60 children included in the interim analysis, four (7%) had fever, 22 (37%) had injection site tenderness, and 15 (25%) had muscle pain in the 7 days after either JE-VC dose (3,15,16). Two serious adverse events were reported, one child each with diabetes mellitus (3 months after dose 2) and dizziness (4 months after dose 2). No other neurologic or hypersensitivity adverse events were reported.

Rationale for JE Vaccine Recommendations

Considerations in providing recommendations for use of JE-VC in travelers include 1) the overall low risk for travel-associated JE, which varies based on itinerary and activities, 2) the lack of available treatment and high rates of morbidity and mortality when the disease does occur, and 3) the high rates of seroprotection and low probability of serious adverse events following vaccination (3,4,14). Travel vaccines are usually paid for by the travelers themselves; they are not covered under the Vaccines for Children (VFC) program or by most private insurance plans. A cost-effectiveness study of JE vaccine for U.S. children traveling to JE-endemic countries was not performed. However, given the large numbers of travelers to Asia (>5.5 million U.S. travelers entered JE-endemic countries in 2004), the low risk for JE for most travelers to Asia, and the high cost of JE-VC (\$400–\$500 per 2-dose primary series), providing JE vaccine to all travelers to Asia likely would not be cost-effective. In addition, for some travelers with lower risk itineraries, even a low probability of vaccine-related serious adverse events might be higher than the risk for disease. Therefore, JE vaccine should be targeted to travelers who, on the basis of their planned travel itinerary and activities, are at higher risk for disease (Box) (4).

ACIP Recommendations for Use of JE-VC in Children

ACIP recommendations for use of JE-VC for the primary series in children aged 2 months through 16 years are the same as for persons aged ≥17 years (Box) (4). Travelers to JE-endemic

BOX. Recommendations for use of inactivated Vero cell culture-derived Japanese encephalitis (JE) vaccine in adults and children aged ≥ 2 months traveling to JE-endemic areas*

- JE vaccine is recommended for travelers who plan to spend a month or longer in endemic areas during the JE virus transmission season. This includes long-term travelers, recurrent travelers, or expatriates who will be based in urban areas but are likely to visit endemic rural or agricultural areas during a high-risk period of JE virus transmission.
- JE vaccine should be considered for the following persons:
 - Short-term (<1 month) travelers to endemic areas during the JE virus transmission season if they plan to travel outside of an urban area and have an increased risk for JE virus exposure (e.g., spending substantial time outdoors in rural or agricultural areas, participating in extensive outdoor activities, staying in accommodations without air conditioning, screens, or bed nets).
 - Travelers to an area with an ongoing JE outbreak.
 - Travelers to endemic areas who are uncertain of specific destinations, activities, or duration of travel.
- JE vaccine is not recommended for short-term travelers whose visit will be restricted to urban areas or periods outside of a well-defined JE virus transmission season.

*Information on JE virus transmission by country is available from CDC at <http://wwwnc.cdc.gov/travel/yellowbook/2014/chapter-3-infectious-diseases-related-to-travel/japanese-encephalitis>.

countries should be advised of the risks for JE disease and the importance of personal protective measures to reduce the risk for mosquito bites. For some travelers who will be in a higher-risk setting based on season, location, duration, and activities, JE vaccine can further reduce the risk for infection. JE vaccine is recommended for travelers who plan to spend a month or longer in endemic areas during the JE virus transmission season. JE vaccine should be considered for short-term (<1 month) travelers whose itinerary or activities might increase their risk for exposure to JE virus. JE vaccine is not recommended for short-term travelers whose visit will be restricted to urban areas.

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Acknowledgments

Members of the Advisory Committee on Immunization Practices (ACIP); ACIP Japanese Encephalitis Vaccines Workgroup. ACIP member roster for July 2012–June 2013 available at <http://www.cdc.gov/vaccines/acip/committee/members-archive/members-07-2012-06-2013.html>.

References

1. CDC. Advisory Committee on Immunization Practices (ACIP): summary report, June 19–20, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; 2013. Available at <http://www.cdc.gov/vaccines/acip/meetings/downloads/min-archive/min-jun13.pdf>.
2. Ahmed F, Temte J, Campos-Outcalt D, Schunemann H, ACIP Evidence Based Recommendations Work Group. Methods for developing evidence-based recommendations by the Advisory Committee on Immunization Practices (ACIP) of the U.S. Centers for Disease Control and Prevention (CDC). *Vaccine* 2011;29:9171–6.
3. CDC. GRADE evidence tables—recommendations in MMWR. Atlanta, GA: US Department of Health and Human Services, CDC; 2013. Available at <http://www.cdc.gov/vaccines/acip/recs/grade/table-refs.html>.
4. CDC. Japanese encephalitis vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2010;59(No. RR-1).
5. Hills SL, Griggs AC, Fischer M. Japanese encephalitis in travelers from non-endemic countries, 1973–2008. *Am J Trop Med Hyg* 2010;82:930–6.
6. Intercell Biomedical. Ixiaro: package insert and patient information. Livingston, United Kingdom: Intercell Biomedical; 2013. Available at <http://www.fda.gov/downloads/biologicsbloodvaccines/vaccines/approvedproducts/ucm142569.pdf>.
7. CDC. Recommendations for use of a booster dose of inactivated Vero cell culture-derived Japanese encephalitis vaccine—Advisory Committee on Immunization Practices, 2011. *MMWR* 2011;60:661–3.
8. Markoff L. Points to consider in the development of a surrogate for efficacy of novel Japanese encephalitis virus vaccines. *Vaccine* 2000;18(Suppl 2):26–32.
9. Hombach J, Solomon T, Kurane I, Jacobson J, Wood D. Report on a WHO consultation on immunological endpoints for evaluation of new Japanese encephalitis vaccines. *Vaccine* 2005;23:5205–11.
10. Tauber E, Kollaritsch H, Korinek M, et al. Safety and immunogenicity of a Vero-cell-derived, inactivated Japanese encephalitis vaccine: a non-inferiority, phase III, randomised controlled trial. *Lancet* 2007;370:1847–53.
11. Tauber E, Kollaritsch H, von Sonnenburg F, et al. Randomized, double-blind, placebo-controlled phase 3 trial of the safety and tolerability of IC51, an inactivated Japanese encephalitis vaccine. *J Infect Dis* 2008;198:493–9.
12. Dubischar-Kastner K, Kaltenboeck A, Klingler A, Jilma B, Schuller E. Safety analysis of a Vero-cell culture derived Japanese encephalitis vaccine, Ixiaro (IC51), in 6 months of follow-up. *Vaccine* 2010;28:6463–9.
13. Schuller E, Klingler A, Dubischar-Kastner K, Dewasthaly S, Müller Z. Safety profile of the Vero cell-derived Japanese encephalitis virus (JEV) vaccine Ixiaro. *Vaccine* 2011;29:8669–76.
14. Fischer M. Japanese encephalitis (JE) vaccine for U.S. travelers. Presentation to the Advisory Committee on Immunization Practices, Atlanta, GA, February 20, 2013. Available at <http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-feb-2013/02-je-vaccine-fischer.pdf>.
15. Dubischar-Kastner K. Pediatric data for Ixiaro: Japanese encephalitis vaccine, inactivated, adsorbed. Presentation to the Advisory Committee on Immunization Practices, Atlanta, GA, June 19, 2013. Available at <http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-jun-2013/02-je-dubischar-kastner.pdf>.
16. Food and Drug Administration. Clinical review: Ixiaro. Silver Spring, MD: Food and Drug Administration; 2013. Available at <http://www.fda.gov/downloads/biologicsbloodvaccines/vaccines/approvedproducts/ucm354012.pdf>.
17. Kaltenböck A, Dubischar-Kastner K, Schuller E, Datla M, Klade CS, Kishore TS. Immunogenicity and safety of Ixiaro (IC51) in a phase II study in healthy Indian children between 1 and 3 years of age. *Vaccine* 2010;28:834–9.

Notes from the Field

Late Vitamin K Deficiency Bleeding in Infants Whose Parents Declined Vitamin K Prophylaxis — Tennessee, 2013

Vitamin K deficiency bleeding (VKDB) is a coagulopathy that develops in infants who do not have sufficient vitamin K stores to support production of clotting factors. In adults, vitamin K is absorbed from food and from vitamin K synthesized by gut bacteria. However, placental transfer in humans is limited; cord blood and infant liver reserve levels of vitamin K are substantially below adult levels (1,2). As a result, infants are predisposed to develop VKDB, which is classified as early, classic, and late, according to when it presents.* In the United States, administration of intramuscular vitamin K at birth to prevent all forms of VKDB has been standard practice since first recommended by the American Academy of Pediatrics in 1961 (3). Without this prophylaxis, incidence of early and classical VKDB ranges from 0.25% to 1.7% of births; incidence of late VKDB ranges from 4.4 to 7.2 per 100,000 infants (1–3). The relative risk for developing late VKDB has been estimated at 81 times greater among infants who do not receive intramuscular vitamin K than in infants who do receive it (4).

During February–September 2013, four confirmed cases of late vitamin K deficient bleeding were diagnosed at a children's hospital in Nashville, Tennessee. The four infants had laboratory-confirmed coagulopathy, defined as elevation of prothrombin time (PT) greater than or equal to four times the laboratory limit of normal, correctable by vitamin K administration, and symptomatic bleeding. Three of the infants were born at major area hospitals, and one was born at home. The infants all had been healthy and developing normally until experiencing sudden symptomatic bleeding at age 6–15 weeks. Three of the infants had diffuse intracranial hemorrhage, and the fourth had gastrointestinal bleeding. Additionally, asymptomatic laboratory-confirmed coagulopathy was identified in the twin of one of the patients. In each case, parents had declined intramuscular vitamin K administration at birth. The Tennessee

Department of Health initiated a public health investigation of this cluster and requested assistance from CDC.

All four of the infants survived. The infant with gastrointestinal bleeding recovered fully. The three with intracranial hemorrhage are being followed by neurologists; one has an apparent gross motor deficit. Although deficits have not yet been identified in the other infants, all are currently aged <1 year, and the neurodevelopmental impact of the hemorrhages might become apparent in the context of further development.

Preliminary queries of Tennessee hospital discharge data during 2007–2012 revealed no confirmed cases of late vitamin K deficiency bleeding, defined as an *International Classification of Diseases, Ninth Revision* (ICD-9) diagnosis code of either hemorrhagic disease of the newborn (776.0) or vitamin K deficiency (269.0), plus any codes for symptoms of bleeding, including intracranial or gastrointestinal hemorrhages, epistaxis, bruising, or hemothorax. During this period, 493,259 live births occurred in Tennessee. To assess the proportion of neonates who did not receive a vitamin K injection in 2013, records of a random sample of infants born during January–October 2013 at each of three Nashville area hospitals and at four major Tennessee nonhospital birthing centers were reviewed. At the Nashville hospital with the highest proportion of neonates not administered vitamin K, 3.4% of 3,080 infants discharged from the newborn nursery received no vitamin K injection. In contrast, 28.0% of 218 neonates at birthing centers did not receive vitamin K. Case-finding efforts revealed no additional cases of late VKDB in Tennessee in 2013.

Parents of the four infants with VKDB were asked why they declined vitamin K prophylaxis for their neonate. Reasons included concern about an increased risk for leukemia when vitamin K is administered, an impression that the injection was unnecessary, and a desire to minimize the newborn's exposure to "toxins." Concern about increased risk for leukemia in those receiving the vitamin K injection was initially generated by a 1992 report associating vitamin K injection and childhood cancer (5). The finding of an association with either leukemia specifically or general childhood cancer has not been replicated in other studies, but concern persists (1–3). In all cases, parental knowledge about the risk for development of late VKDB was either incomplete or absent at the time of declining prophylaxis, with most parents learning about the possibility of late VKDB only after their infants developed the condition.

This investigation is ongoing. A case-control study is under way to assess whether any additional risk factors might contribute to the development of late VKDB in children who do not receive vitamin K at birth. Record review at two more Nashville hospitals and one more nonhospital birthing center

*Early VKDB occurs within 24 hours of birth, is often severe, and is almost exclusively in infants whose mothers used vitamin K–inhibitory drugs, such as antiepileptics and isoniazid, during pregnancy (1,2). Classic VKDB occurs between 24 hours and 7 days of life, and occurs as a result of the natural decrease in infant vitamin K levels occurring after separation from the placental source and before feeding can adequately replenish stores. Presentation is variable, ranging from mild bruising to severe intracranial hemorrhage (1). Late VKDB occurs in infants aged 2–24 weeks. Risk factors include breastfeeding and the presence of malabsorptive diseases such as cystic fibrosis and cholestatic liver disease, which prevent adequate consumption of dietary vitamin K. Presentations often include severe intracranial or gastrointestinal hemorrhage (1).

is in progress, and a survey of all parents identified through these record reviews who declined vitamin K administration for their children is planned to better understand why some parents decline this safe and effective prophylaxis.

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References

1. Zipursky A. Prevention of vitamin K deficiency bleeding in newborns. *Br J Haematol* 1999;104:430–7.
2. Sutor AH, Kries R, Cornelissen EAM, McNinch AW, Andrew M. Vitamin K deficiency bleeding (VKDB) in infancy. *Thromb Haemost* 1999;81:456–61.
3. American Academy of Pediatrics, Vitamin K Ad Hoc Task Force. Controversies concerning vitamin K and the newborn. *Pediatrics* 1993;91:1001–3.
4. McNinch AW, Tripp JH. Haemorrhagic disease of the newborn in the British Isles: two year prospective study. *BMJ* 1991;303:1105–9.
5. Golding J, Greenwood R, Birmingham K, Mott M. Childhood cancer, intramuscular vitamin K, and pethidine given during labour. *BMJ* 1992; 305:341–6.

Notes from the Field

Primary Amebic Meningoencephalitis Associated with Ritual Nasal Rinsing — St. Thomas, U.S. Virgin Islands, 2012

On November 21, 2012, the U.S. Virgin Islands (USVI) Department of Health documented the first case and death from primary amebic meningoencephalitis (PAM) in the territory. PAM, a rare and almost universally fatal condition, results when *Naegleria fowleri*, a free-living thermophilic amoeba found in warm freshwater, enters the nose and migrates to the brain. The patient was a man aged 47 years whose only reported freshwater exposures were the use of tap water for daily household activities and for ablution, a ritual cleansing that he practiced several times a day in preparation for Islamic prayer. Ablution can include nasal rinsing. On November 16, 2012, the patient had visited the emergency department with a headache; he was treated symptomatically and released. The following day, the patient returned to the emergency department by ambulance with fever, confusion, agitation, and a severe headache, for which he was admitted. Cerebrospinal fluid (CSF) studies were consistent with bacterial meningitis, and antibiotics were started. On November 18, neurologic findings included fixed nonresponsive pupils, no response in the upper or lower extremities, muted plantar responses, and no response to verbal commands. Microscopic examination of the CSF obtained from a second lumbar puncture revealed motile amebic trophozoites. CSF specimens sent to CDC for confirmatory testing were positive for *N. fowleri* by real-time polymerase chain reaction testing. On the morning of November 21, the patient was pronounced brain dead based on neurologic criteria.

During December 15–24, the USVI Department of Health and CDC conducted an environmental investigation at the patient's home and mosque to characterize his water exposures and determine the likely source of infection. According to the patient's roommate, the patient performed ablution, including nasal rinsing, at home and at the mosque. His household water sources were untreated groundwater from a well and untreated rainwater from a cistern; both sources were connected to the home's plumbing system. No municipal water was piped into the home. The mosque water supply was desalinated and chlorinated municipal water. None of three samples from the mosque yielded *N. fowleri*; however, three of 17 samples from the patient's home yielded *N. fowleri*. Water samples taken from the showerhead and the hot water heater along with the showerhead itself were positive for *N. fowleri*. None of the positive household water samples had detectable levels of free chlorine.

Detection of *N. fowleri* in the shower and hot water heater suggests that the organism had colonized the home's plumbing

system and points to the home as the likely site of exposure. Although most PAM infections are associated with recreational freshwater exposure, infection also can occur when amoeba-contaminated water is introduced into the nose via nasal rinsing (1).

Ablution, including nasal rinsing, has been associated with *N. fowleri* cases globally (2). In the United States, during 2003–2012, three of 31 persons infected with *N. fowleri* became infected after performing nasal rinsing with contaminated tap water. Two of the three patients performed nasal rinsing using a neti pot or similar device (1). However, the case described in this report is the first documented U.S. case of PAM potentially associated with ablution, thus affirming the need to further understand ablution as a possible mode of *N. fowleri* transmission. Through diagnostic assistance and clinical consultation, CDC continues to support the detection of new *N. fowleri* infections and the identification of emerging modes of transmission (<http://www.cdc.gov/parasites/naegleria/cdc-at-work.html>).

Measures can be taken to make water safer for ritual nasal rinsing. Using water labeled distilled or sterile, water that is boiled for 1 minute and left to cool, water filtered to remove small organisms, or water disinfected appropriately can minimize the risk for infection. Additional information regarding PAM and ablution is available at <http://www.cdc.gov/parasites/naegleria/ritual-ablution.html>.

Reported by

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References

1. Yoder JS, Straif-Bourgeois S, Roy SL, et al. Primary amebic meningoencephalitis deaths associated with sinus irrigation using contaminated tap water. *Clin Infect Dis* 2012;55:e79–85.
2. Shakoor S, Beg MA, Mahmood SF, et al. Primary amebic meningoencephalitis caused by *Naegleria fowleri*, Karachi, Pakistan. *Emerg Infect Dis* 2011; 17:258–61.

Notes from the Field

Outbreak of Tuberculosis Associated with a Newly Identified *Mycobacterium tuberculosis* Genotype — New York City, 2010–2013

In January 2010, the New York City (NYC) Department of Health and Mental Hygiene (DOHMH) identified a tuberculosis (TB) case caused by *Mycobacterium tuberculosis* with a genotype not reported previously in the United States (1). The patient was evaluated for TB while incarcerated but was released before the diagnosis was confirmed and before beginning TB treatment. The patient, who had a history of homelessness and clinical characteristics suggesting infectiousness, could not be located by DOHMH for 13 months. Numerous efforts were made to locate the patient, including queries to shelters, jails, and infection-control staff members at local hospitals. The patient was located after he had an abnormal chest radiograph result following referral by a local jail to a hospital emergency department (ED) for symptoms of alcohol withdrawal; he died from complications of liver cirrhosis 5 days later, without having started TB treatment. During February 2012–May 2013, DOHMH identified four additional patients with the same TB genotype. All five patients were U.S.-born black men aged 52–57 years. Four had a history of substance abuse; three had a history of homelessness; and two had a history of incarceration. All patients had drug-susceptible TB and were negative for human immunodeficiency virus. Three patients completed TB treatment. One patient, who was homeless at the time of diagnosis, began TB treatment but was lost to follow-up by DOHMH.

Contact investigation was conducted per routine NYC protocol (2) and included contact elicitation at one jail, two homeless shelters, two health-care facilities, and one drug treatment facility. During the outbreak investigation, epidemiologists reinterviewed all patients except the index patient. Among three patients with a history of homelessness, all reported spending time living on the street. Although no patient named another patient as a contact, four patients spent considerable time near the same NYC transportation hub. Three patients, including the index patient, had multiple visits to the same NYC hospital ED for care related to alcohol withdrawal and other health issues in the years around their TB diagnoses. The index patient made several visits to this ED during the 13 months when he could not be located by DOHMH. Although it is not possible to definitively determine where transmission occurred, multiple epidemiologic links among patients indicate recent transmission of a new TB strain in NYC.

Genotyping combined with epidemiologic expertise enabled DOHMH to detect an outbreak among persons not previously known to be linked and to identify possible sites of TB transmission that were not apparent from contact investigation alone. DOHMH also identified a social network of homeless persons who primarily

lived on the street and had a history of substance abuse and frequent ED use. DOHMH and the NYC Department of Homeless Services (DHS) have a history of working collaboratively to detect and treat TB among homeless persons residing in shelters. However, TB control among homeless persons living on the street presents unique challenges. In conjunction with this investigation, DOHMH is working with DHS, local hospitals, and other organizations to improve capacity for locating TB patients lost to DOHMH supervision and to identify mechanisms for enhancing TB diagnosis, treatment, and case management for homeless persons who live on the street.

Although the burden of TB in the United States has largely shifted from U.S.-born to foreign-born populations over the past 2 decades (3), this outbreak is a reminder that transmission continues to occur among U.S.-born persons and highlights the need for TB controllers, ED health-care providers, and others to remain vigilant for TB among persons with a history of homelessness, substance abuse, or other TB risk factors (4). Although previous outbreaks have been linked to homeless shelters (5–7), this investigation revealed other sites of possible transmission, including a hospital ED and a public transportation hub. DOHMH continues to monitor TB genotyping results to identify additional patients in this outbreak.

Reported by

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References

1. CDC. Tuberculosis genotyping—United States, 2004–2010. *MMWR* 2012;61:723–5.
2. New York City Department of Health and Mental Hygiene, Bureau of Tuberculosis Control. Clinical policies and protocols manual. New York, NY; 2008. Available at <http://www.nyc.gov/html/doh/html/diseases/tb-hosp-manual.shtml>.
3. CDC. Trends in tuberculosis—United States, 2012. *MMWR* 2013;62:201–5.
4. CDC. Controlling tuberculosis in the United States: recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. *MMWR* 2005;54(No. RR-12).
5. CDC. Tuberculosis transmission in a homeless shelter population—New York, 2000–2003. *MMWR* 2005;54:149–52.
6. CDC. Notes from the field: tuberculosis cluster associated with homelessness—Duval County, Florida, 2004–2012. *MMWR* 2012;61:539–40.
7. CDC. Tuberculosis outbreak associated with a homeless shelter—Kane County, Illinois, 2007–2011. *MMWR* 2012;61:186–9.

Announcements

Get Smart About Antibiotics Week — November 18–24, 2013

Antibiotics are an essential tool to treat bacterial infections, but inappropriate use of these drugs has promoted antibiotic resistance and compromised their effectiveness. Health-care providers prescribed an estimated 258 million courses of antibiotics to outpatients in the United States in 2010 (1). Among respiratory conditions for which antibiotics are rarely indicated (e.g., colds and bronchitis), half of ambulatory care visits result in a prescription for antibiotics, most of which are for broad-spectrum antibiotics (2).

In acute care hospitals, each year approximately half of all patients admitted receive an antibiotic, and nearly 50% of antimicrobial use in hospitals is unnecessary or inappropriate (3). Drug-resistant infections are on the rise among hospitalized patients, and options for antibiotic treatment are now severely limited or sometimes nonexistent.

November 18–24, 2013, is Get Smart About Antibiotics Week, an annual observance to coordinate the work of CDC's Get Smart: Know When Antibiotics Work and Get Smart for Healthcare programs, state-based appropriate antibiotic use campaigns, nonprofit partners, and for-profit partners during a week-long observance on antibiotic resistance and the importance of appropriate antibiotic use. Information on scheduled activities and how to participate during the observance week is available at <http://www.cdc.gov/getsmart>.

References

1. Hicks LA, Taylor TH Jr, Hunkler RJ. U.S. outpatient antibiotic prescribing, 2010. *N Engl J Med* 2013;368:1461–2.
2. Shapiro DJ, Hicks LA, Pavia AT, Hersh AL. Antibiotic prescribing for adults in ambulatory care in the USA, 2007–09. *J Antimicrob Chemother* 2013 [Epub ahead of print].
3. Dellit TH, Owens RC, McGowan JE, et al. Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America guidelines for developing an institutional program to enhance antimicrobial stewardship. *Clin Infect Dis* 2007;44:159–77.

World Day of Remembrance for Road Traffic Victims — November 17, 2013

Road traffic crashes kill nearly 3,500 persons each day and injure or disable 50 million each year around the world (1). Road traffic crashes are the leading cause of death among persons aged 10–24 years worldwide and the leading cause of death among those in the first 3 decades of life in the United States. CDC has declared road traffic injuries a “winnable battle” and supports efforts at the United Nations (UN) and World Health Organization (WHO) to dedicate 2011–2020 as the Decade of Action for Road Safety (2).

The Decade of Action was launched in May 2011 in approximately 100 countries, with the goal of preventing 5 million road traffic deaths globally by 2020. In October 2005, the UN General Assembly adopted a resolution calling for governments and nongovernmental organizations to mark the third Sunday in November each year as World Day of Remembrance for Road Traffic Victims (3). The observance was created to recognize persons injured or killed in road traffic crashes and the plight of relatives and others who must cope with the emotional and practical consequences of these events.

CDC, WHO, and the UN Road Safety Collaboration encourage governments and nongovernmental organizations worldwide to commemorate November 17, 2013, as the World Day of Remembrance to draw the public's attention to road traffic crashes, their consequences and costs, and prevention measures. The theme of this year's observance is “From Global Remembrance to Global Action Across the Decade.” Ancillary materials are available to provide organizations with action strategies to support victims and survivors (4). Practical guidance for persons or groups on how to plan and organize events on this day is available from WHO at http://whqlibdoc.who.int/publications/2006/9241594527_eng.pdf.

Additional information about the World Day of Remembrance is available at <http://www.worlddayofremembrance.org>. Additional information about CDC's motor vehicle injury prevention activities is available at <http://www.cdc.gov/winnablebattles/motorvehicleinjury>.

References

1. World Health Organization. Global status report on road safety 2013. Geneva, Switzerland: World Health Organization; 2013. Available at http://www.who.int/violence_injury_prevention/road_safety_status/2013.
2. CDC. Launch of Decade of Action for Global Road Safety—May 11, 2011. *MMWR* 2011;60:554.
3. United Nations General Assembly. Resolution 60/5: improving global road safety. New York, NY: United Nations; 2005. Available at <http://www.unece.org/fileadmin/DAM/trans/roadsafe/docs/A-RES-60-5e.pdf>.
4. World Health Organization. Advocating for road safety and road traffic injury victims: a guide for nongovernmental organizations. Geneva, Switzerland: World Health Organization; 2012. Available at http://www.who.int/violence_injury_prevention/publications/road_traffic/ngo_guide.

Errata

Vol. 62, No. RR-7

In the *Recommendations and Reports*, “Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2013–2014,” three errors occurred.

On page 22, the last sentence of the third paragraph under the subheading “Fluarix Quadrivalent” should read, “Overall frequencies of most solicited adverse events associated with **Fluarix** Quadrivalent in these studies were generally similar to those reported for the comparator trivalent vaccines.”

On page 23, the second sentence of the first paragraph under the subheading “Flulaval Quadrivalent” should read, “**Flulaval** Quadrivalent will be available alongside the trivalent formulation of Flulaval during the 2013–14 season.”

On page 23, the third sentence of the second paragraph under the subheading “Flulaval Quadrivalent” should read, “Contraindications and precautions to the administration of **Flulaval** Quadrivalent are similar to those described for the trivalent formulation of Flulaval (see Contraindications and Precautions for the Use of IIV; Table 2) (345).”

Vol. 62, No. RR-9

In the *Recommendations and Reports*, “Provisional CDC Guidelines for the Use and Safety Monitoring of Bedaquiline Fumarate (Sirturo) for the Treatment of Multidrug-Resistant Tuberculosis,” three errors occurred.

On page 5, in Figure 1, the y-axis label should read, “**Percentage of patients remaining sputum culture-positive.**”

On page 7, in Figure 2, the third footnote should read, “**Time from baseline QTcF in weeks.**”

On page 8, under the heading “Deaths Among Clinical Trial Participants,” the first sentence of the paragraph should read, “A total of 36 deaths were reported during the entire clinical development program of bedaquiline: 30 in the bedaquiline group and six in the placebo group (**Table 5**).”

Vol. 62, No. 36

In the report, “Notes from the Field: Measles Outbreak Among Members of a Religious Community — Brooklyn, New York, March–June 2013,” an error occurred.

On page 752, the first sentence of the fourth paragraph should read, “The outbreak was first recognized in Brooklyn’s Borough Park neighborhood, where the median age of 28 infected persons was 10 years (range: 0–32 years), and 79% of cases **were** in persons aged ≥ 12 months in three extended families whose members declined use of measles vaccine.”

Vol. 62, No. 41

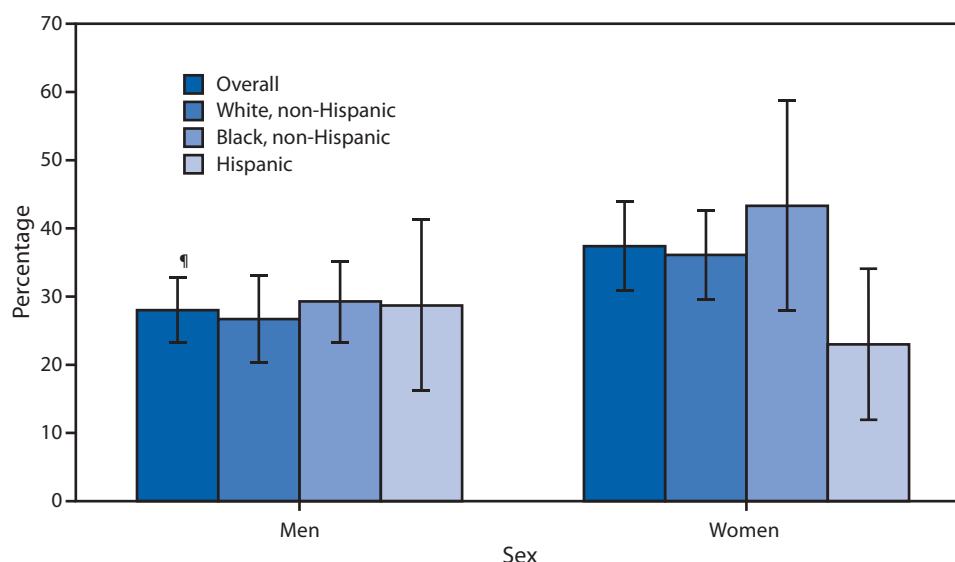
In the report, “Availability of an Assay for Detecting *Mycobacterium tuberculosis*, Including Rifampin-Resistant Strains, and Considerations for Its Use — United States, 2013,” two errors occurred.

On page 823, in Table 1, the title should read, “TABLE 1. Interpretation and proposed minimum laboratory report **language** for results from the Cepheid Xpert MTB/RIF assay* — United States, 2013.” The third entry in the middle column of Table 1 should read, “MTB target is detected within the sample. A mutation in the *rpoB* gene **could not be determined** because of insufficient signal detection.”

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Percentage of Adults with Hypertension* Who Monitored Their Blood Pressure at Home at Least Once a Month,[†] by Sex and Race/Ethnicity — National Health and Nutrition Examination Survey, United States, 2009–2010[§]



* Hypertension was defined as systolic blood pressure ≥ 140 mm Hg, diastolic blood pressure ≥ 90 mm Hg, or currently taking medication to lower blood pressure, based on affirmative responses to the following questions: "Have you ever been told by a doctor or other health professional that you had hypertension, also called high blood pressure?"; "Because of your [high blood pressure/hypertension], have you ever been told to take prescribed medicine?"; and "Are you now taking a prescribed medicine?"

[†] Data on home blood pressure monitoring come from two questions. Respondents were first asked, "Did you take your blood pressure at home during the last 12 months?" Respondents who answered "yes" were then asked, "How often did you check your blood pressure at home during the last 12 months?"

[§] All estimates are age-adjusted to the 2000 projected U.S. standard population using the age groups 18–39, 40–59, and ≥ 60 years.

[¶] 95% confidence interval.

During 2009–2010, approximately 32% of adults aged ≥ 18 years with hypertension reported that they monitored their blood pressure at home at least once a month. Women with hypertension were more likely to monitor their blood pressure than men with hypertension (37% versus 28%). Non-Hispanic black women with hypertension were more likely to monitor their blood pressure at home than Hispanic women with hypertension. No differences were observed by race or Hispanic ethnicity among men.

Source: Ostchega Y, Berman L, Hughes JP, Chen TC, Chiappa MM. Home blood pressure monitoring and hypertension status among US adults: the National Health and Nutrition Examination Survey (NHANES), 2009–2010. *Am J Hypertens* 2013;26:1086–92.

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