Youth Risk Behavior Survey (YRBS)
2013 Standard Questionnaire
Item Rationale

Behaviors that Result in Unintentional Injuries and Violence

QUESTION(S):

8. When you rode a bicycle during the past 12 months, how often did you wear a helmet?

RATIONALE:

This question measures the frequency of helmet use while riding a bicycle. In 2000-2001, bicycle activities were the third leading type of sports and recreation-related activities in which 15- to 19-year-old males were injured and had to be treated at an emergency department.[1] In 2009, 13% of bicyclists who were killed and 20% of those injured in traffic crashes were under age 16.[2] Head injury is the leading cause of death in bicycle crashes[3,4] and use of bicycle helmets is the single most effective way of reducing head injuries and fatalities.[2] Estimates indicate bicycle helmets may prevent approximately 56% of bicycle-related deaths,[5] 65%-88% of bicycle-related brain injuries,[6,7] and 65% of serious facial injuries to the upper and middle regions of the face.[8] In 2011, among the 70% of high school students nationwide who had ridden a bicycle during the 12 months before the survey, 87% had rarely or never worn a bicycle helmet.[9] Among students nationwide who had ridden a bicycle, the prevalence of rarely or never wearing a bicycle helmet decreased during 1991–2001 (96%–85%) and then did not change significantly during 2001–2011 (85%–87%).[9]

REFERENCES:

1. Centers for Disease Control and Prevention. Nonfatal sports- and recreation-related injuries treated in emergency departments - United States, July 2000-July 2001. *Morbidity and Mortality Weekly Report* 2002;51(33):736-740.

2. National Highway Traffic Safety Administration. *Traffic Safety Facts, 2009 Data: Bicyclists and Other Cyclists*. Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration; 2009. Available at http://www-nrd.nhtsa.dot.gov/pubs/811386.pdf. Accessed May 18, 2012.

3. Centers for Disease Control and Prevention. Injury-control recommendations: bicycle helmets. *Morbidity and Mortality Weekly Report* 1995;44(RR-1):1-17.

4. Sosin DM, Sacks JJ, Webb KW. Pediatric head injuries and deaths from bicycling in the United States. *Pediatrics* 1996;98:868-870.

5. Rivara FP. Traumatic deaths of children in the United States: currently available prevention strategies. *Pediatrics* 1985;75:456-462.

6. Thompson DC, Rivara FP, Thompson RS. Effectiveness of bicycle safety helmets in preventing head injuries: a case-control study. *Journal of the American Medical Association* 1996;276:1968-1973.

7. Thompson RS, Rivara FP, Thompson DC. A case-control study of the effectiveness of bicycle safety helmets. *New England Journal of Medicine* 1989;320:1361-1367.

8. Thompson DC, Nunn MW, Thompson RS, Rivara FP. Effectiveness of bicycle safety helmets in preventing serious facial injury. *Journal of the American Medical Association* 1996;276:1974-1975.

9. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

QUESTION(S):

9. How often do you wear a seat belt when riding in a car driven by someone else?

RATIONALE:

This question measures the frequency with which seat belts are worn when riding in a car driven by someone else. In 2006, 1,537 young people ages 15 and under were killed and 203,819 were injured in passenger vehicle crashes; of those injured, approximately 9% had an injury that was so severe they were unable to walk, drive, or continue the activities they normally engaged in prior to the crash.(1) Motor-vehicle related injuries kill more young adults ages 5-19 years than any other single cause in the United States.(2) Safety belts, when used appropriately, reduce the risk of fatal injury to front-seat passenger car occupants by 45% and the risk of moderate-to-critical injury by 50%.(3) In 2010, among all fatally injured 16-19 year-old occupants, seat belt use among passengers (29%) was considerably lower than among drivers (44%).(4) In 2009, the use of seat belts in passenger vehicles saved an estimated 12,713 lives.(5) In 2011, 8% of high school students nationwide had rarely or never worn a seat belt when riding in a car driven by someone else.(5) During 1991–2011, among students nationwide, a significant linear decrease occurred in the prevalence of rarely or never wearing a seat belt (26%–8%).(6)

REFERENCES:

1. National Highway Traffic Safety Administration. *2006 Motor Vehicle Occupant Protection Facts.* Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration; 2008. Available at http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/810654.pdf. Accessed May 21, 2012.

2. Web-based Injury Statistics Query and Reporting System (WISQARS) [database online]. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2010. Accessed May 21, 2012.

3. National Highway Traffic Safety Administration. *Traffic Safety Facts, 2006 Data: Occupant Protection.* Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration; 2007. Available at http://www-nrd.nhtsa.dot.gov/Pubs/810807.PDF. Accessed May 21, 2012.

4. Highway Data Loss Institute. *Fatality Facts 2010: Teenagers*. Insurance Institute for Highway Safety; 2012. Available at http://www.iihs.org/research/default.aspx. Accessed May 24, 2012.

5. National Highway Traffic Safety Administration. Lives saved in 2009 by restraint use and minimum-drinking-age laws. Washington, D.C.: US Department of Transportation, National Highway Traffic Safety Administration: 2010. Publication no DOT-HS-811-383. Available at http://www-nrd.nhtsa.dot.gov/Pubs/811383.pdf. Accessed May 21, 2012.

6. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

QUESTION(S):

10. During the past 30 days, how many times did you ride in a car or other vehicle driven by someone who had been drinking alcohol?

11. During the past 30 days, how many times did you drive a car or other vehicle when you had been drinking alcohol?

RATIONALE:

These questions measure the frequency with which high school students drove a motor vehicle while under the influence of alcohol or rode as a passenger in a motor vehicle operated by someone who was under the influence of alcohol. In 2008, 22% of 15- to 20-year-old drivers who were killed in motor vehicle crashes and 4% of those injured in

crashes had been drinking alcohol.[1] In 2010, 15% of fatally injured passenger vehicle drivers ages 16-17 years old had a blood alcohol concentration (BAC) of 0.08 grams per deciliter (g/dL) at the time of the crash.[2] In 2011, 8% of high school students nationwide had driven a car or other vehicle one or more times when they had been drinking alcohol and 24% of high school students nationwide had ridden in a car or other vehicle driven by someone who had been drinking alcohol one or more times during the 30 days before the survey.[3] Among students nationwide, the prevalence of having driven a car when they had been drinking alcohol did not change significantly during 1991–1997 (17%–17%) and then decreased during 1997–2011 (17%–8%).[3] During 1991–2011, among students nationwide, a significant linear decrease occurred in the prevalence of riding with a driver who had been drinking alcohol (40%–24%).[3]

REFERENCES:

1. National Highway Traffic Safety Administration. *Traffic Safety Facts, 2008 Data: Young Drivers.* Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration; 2009. Available at http://www-nrd.nhtsa.dot.gov/pubs/811169.pdf. Accessed May 21, 2012.

2. Highway Data Loss Institute. *Fatality Facts 2010: Teenagers*. Insurance Institute for Highway Safety; 2012. Available at http://www.iihs.org/research/fatality.aspx?topicName=Teenagers. Accessed May 24, 2012.

3. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

QUESTION(S):

12. During the past 30 days, on how many days did you text or e-mail while driving a car or other vehicle?

RATIONALE:

This question measures the frequency with which students engage in texting or e-mailing while driving a motor vehicle. Motor vehicle accidents are the leading cause of death among U.S. adolescents age 16-19.[1] In 2008, distracted driving accounted for nearly 16% of all road fatalities; drivers aged 16-29 accounted for almost 40% of these.[2] Teens are at least as likely to engage in texting while driving as adults,[3] teens are less willing to disengage from a distracting behavior even as more road hazards are presented,[4] and teens are less adept at handling road hazards than adults.[4] Among students nationwide, the prevalence of texting while driving one or more times in the 30 days before the survey was 33%.[5]

REFERENCES:

1. Web-based Injury Statistics Query and Reporting System (WISQARS) [database online]. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2010. Accessed May 18, 2012.

2. Wilson FA, Stimpson JP. Trends in fatalities from distracted driving in the United States, 1999 to 2008. *American Journal of Public Health*. 2010; 100(11):2213-9.

3. National Highway Traffic Safety Administration. *Traffic safety facts: Young drivers report the highest level of phone involvement in crash or near-crash incidents.* Publication no. DOT HS 811 611. Washington, DC: USDOT, 2012. http://www-nrd.nhtsa.dot.gov/Pubs/811611.pdf.

4. Lee SE, Klauer SG, Olsen ECB, et al. Detection of road hazards by novice teen and experienced adult drivers. *Transportation Research Record* 2008;2078:26-32.

5. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

QUESTION(S):

13. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?

14. During the past 30 days, on how many days did you carry a gun?

15. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club on school property?

16. During the past 30 days, on how many days did you not go to school because you felt you would be unsafe at school or on your way to or from school?

17. During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife, or club on school property?

RATIONALE:

These questions measure violence-related behaviors and school-related violent behaviors. Homicide is the second leading cause of death among all youth ages 15-19 years (8.9 per 100,000) and is the leading cause of death among black youth ages 15-19 years (30.4 per 100,000).[(1)] Approximately 12% of homicide victims in the United States in 2010 were aged 13-19; of these victims, 93% were killed with a weapon, such as a gun, knife, or club.[(2)] Firearms intensify violence and increase the likelihood of fatality in a conflict.[(3)] Of all violent deaths that occurred on school property between 1994 and 2006, 65%

involved firearms.[4] Nearly 100% of school districts have a policy prohibiting weapon possession or use by high school students on school property.[5] In 2010, students ages 12-18 were victims of approximately 828,000 nonfatal victimizations at school, including 359,000 violent victimizations, 91,400 of which were serious violent victimizations.[6] Among high school students nationwide in 2011, 17% had carried a weapon, 5% had carried a gun, and 5% had carried a weapon on school property on at least 1 day during the 30 days before the survey.[7] The prevalence of having carried a weapon decreased during 1991–1999 (26%–17%) and then did not change significantly during 1999–2011 (17%–17%).[7] Among high school students nationwide in 2011, 6% had not gone to school on at least 1 day during the 30 days before the survey because they felt they would be unsafe at school or on their way to or from school and 7% had been threatened or injured with a weapon on school property 1 or more times during the 12 months before the survey.[7] Among students nationwide, the prevalence of having not gone to school because of safety concerns did not change significantly during 1993–2011 (4%–6%).[7] Among students nationwide, the prevalence of having been threatened or injured with a weapon on school property did not change significantly during 1993–2003 (7%–9%) and then decreased during 2003–2011 (9%–7%).[7]

REFERENCES:

1. Web-based Injury Statistics Query and Reporting System (WISQARS) [database online]. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2010. Accessed May 22, 2012.

2. Department of Justice. Crime in the United States, 2010.*Uniform Crime Report* Federal Bureau of Investigation Web site. Available at http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/index-page. Accessed May 22, 2012.

3. Cook PJ, Ludwig J. The costs of gun violence against children. *Future of Children* 2002;12(2):87-99.

4. Centers for Disease Control and Prevention. School-associated homicides – United States 1992-2006. *MMWR* 2008;57(02):33-36.

5. Jones SE, Fisher CJ, Greene BZ, Hertz MF, Pritzl J. Healthy and safe school environment, part I: results from the School Health Policies and Programs Study 2006. *Journal of School Health* 2007;77(8):522-543.

6. Robers S, Zhang J, Truman J. (2012). *Indicators of School Crime and Safety: 2011* (NCES 2012-002/NCJ 236021). National Center for Education Statistics, U.S. Department of Education, and Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice. Washington, DC. Available at http://nces.ed.gov/pubs2012/2012314.pdf. Accessed May 22, 2012.

7. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

QUESTION(S):

18. During the past 12 months, how many times were you in a physical fight?

19. During the past 12 months, how many times were you in a physical fight in which you were injured and had to be treated by a doctor or nurse?

20. During the past 12 months, how many times were you in a physical fight on school property?

RATIONALE:

These questions measure the frequency and severity of physical fights in general and on school property. Physical fighting is a marker for other problem behaviors [(1)] and is associated with serious injury-related health outcomes.[(2,3)] Among high school students nationwide in 2011, 33% had been in a physical fight and 12% had been in a physical fight on school property one or more times during the 12 months before the survey.[(4)] The percentage of high school students who were in a physical fight decreased during 1991–2009 (42%–31%) and then did not change significantly during 2009–2011 (31%–33%).[(4)] The percentage of high school students who were in a physical fight on school property decreased during 1993-2009 (16–11%) and then did not change significantly during 2009–2011 (11%–12%).[(4)]

REFERENCES:

1. Sosin DM, Koepsell TD, Rivara FP, Mercy JA. Fighting as a marker for multiple problem behaviors in adolescents. *Journal of Adolescent Health* 1995;16:209-215.

2. Borowsky IW, Ireland M. Predictors of future fight-related injury among adolescents. *Pediatrics* 2004;113:530-536.

3. Pickett W, Craig W, Harel Y, et al. Cross-national study of fighting and weapon carrying as determinants of adolescent injury. *Pediatrics* 2005;116:855-863.

4. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

QUESTION(S):

21. Have you ever been physically forced to have sexual intercourse when you did not want to?

22. During the past 12 months, how many times did someone you were dating or going out with physically hurt you on purpose? (Count such things as being hit, slammed into something, or injured with an object or weapon.)

23. During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do? (Count such things as kissing, touching, or being physically forced to have sexual intercourse.)

RATIONALE:

These questions measure the frequency of physical and sexual violence. Intimate partner abuse victimization is associated with participation in other high risk behaviors,[1-3] including suicide ideation and attempts, as well as post-traumatic stress disorder and major depressive episodes.[4,5] According to CDC's National Intimate Partner and Sexual Violence Survey, over 1 million women have experienced sexual violence by an intimate partner in the past 12 months.[6] Almost 3 million men have experience sexual violence other than rape by an intimate partner in the past 12 months.[6] Forced sexual intercourse is associated with negative psychosocial and mental health consequences.[7,8] In 2011, 8% of high school students nationwide had ever been physically forced to have sexual intercourse when they did not want to.[9]

REFERENCES:

1. Ackard DM, Eisenberg ME, Neumark-Sztainer D. Long-term impact of adolescent dating violence on the behavioral and psychological health of male and female youth. *Journal of Pediatrics* 2007;151(5):476-481.

2. Centers for Disease Control and Prevention. Physical dating violence among high school students - United States, 2003. *MMWR* 2006;55(19):532-535.

3. Roberts TA, Klein J, Fisher S. Longitudinal effect of intimate partner abuse and high-risk behavior among adolescents. *Archives of Pediatrics & Adolescent Medicine* 2003;157:875-881.

4. Wolitzy-Taylor KB, Ruggiero JK, Danielson CK, et al. Prevalence and correlates of dating violence in a national sample of adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry* 2008;47(7):755Y762.

5. Coker AL, McKeown RE, Sanderson M, Davis KE, Valois RF, Huebner S. Severe dating violence and quality of life among South Carolina high school students. *American Journal of Preventive Medicine* 2000;19(4):220–227.

6. Black MC, Basile KC, Breiding MJ, et al. *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report.* 2011. Atlanta, GA:

National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

7. Ackard DM, Neumark-Sztainer D. Date violence and date rape among adolescents: associations with disordered eating behaviors and psychological health. *Child Abuse & Neglect* 2002;26:455-473.

8. Howard DE, Wang MQ. Psychosocial correlates of U.S. adolescents who report a history of forced sexual intercourse. *Journal of Adolescent Health* 2005;36:372-379.

4. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

QUESTION(S):

24. During the past 12 months, have you ever been bullied on school property?

25. During the past 12 months, have you ever been electronically bullied? (Count being bullied through e-mail, chat rooms, instant messaging, websites, or texting.)

RATIONALE:

These questions measure the frequency and severity of bullying behavior. Bullying victimization is associated with depression,[1,2] suicidal ideation,[1,2] self-injury,[2] suicide attempts,[2] increased odds of repeated common health problems,[3] school absenteeism,[4] psychological distress,[3] and feeling unsafe at school.[4] Electronic bullying victimization has been associated with discipline problems in school, skipping school, weapon carrying,[1] psychological distress,[6] lower self-esteem,[7] social anxiety,[8] depression,[2] suicidal ideation,[2] self-injury,[2] and suicide attempts.[2] Among high school students nationwide in 2011, 20% had been bullied on school property during the 12 months before the survey and 16% had been electronically bullied through e-mail, chat rooms, instant messaging, websites, or texting during the 12 months before the survey. [9]

REFERENCES:

1. Van der Wal MF, de Wit CA, Hirasing RA. Psychosocial health among young victims and offenders of direct and indirect bullying. *Pediatrics* 2003;111(6):1312-1317.

2. Kessel Schneider S, O'Donnell L, Stueve A, Coulter RWS. Cyberbullying, school bullying, and psychological distress: a regional census of high school students. *American Journal of Public Health* 2012;102:171-177.

3. Rigby K. Consequences of bullying in school. *The Canadian Journal of Psychiatry* 2003;48(9):583-590.

4. Glew GM, Fan MY, Katon W, Rivara FR, Kernic MA. Bullying, psychosocial adjustment, and academic performance in elementary school. *Archives of Pediatrics & Adolescent Medicine* 2005;159:1026-1031.

5. Ybarra ML, Diener-West M, Leaf PJ. Examining the overlap in internet harassment and school bullying: Implications for school intervention. *Journal of Adolescent Health* 2007;41:S42–S50.

6. Kiriakidis SP, Kavoura A. Cyberbullying. A review of the literature on harassment through the internet and other electronic means. *Family & Community Health* 2010;33(2):82-93.

7. Patchin JW, Hinduja S. Cyberbullying and self-esteem. *Journal of School Health* 2010;80:614-621.

8. Juvonen J, Gross EF. Extending the school grounds? Bullying experiences in cyberspace. *Journal of School Health* 2008;78:496-505.

4. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

QUESTION(S):

26. During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?

27. During the past 12 months, did you ever seriously consider attempting suicide?

28. During the past 12 months, did you make a plan about how you would attempt suicide?

29. During the past 12 months, how many times did you actually attempt suicide?

30. If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?

RATIONALE:

These questions measure sadness, suicide ideation, attempted suicide, and the seriousness of those attempts. Suicide is the third leading cause of death among youth ages 15-19 years.[(1)] The suicide rate for persons ages 15-19 was 7.8 per 100,000 in 2009 up from 7.3

per 100,000 in 2006.[1] A prior suicide attempt is one of the most significant risk factors for a suicide fatality.[2,3] Among high school students nationwide in 2011, 28% felt so sad or hopeless almost every day for 2 or more weeks in a row that they stopped doing some usual activities.[4] Among high school students nationwide in 2011, 16% had seriously considered attempting suicide, 13% had made a plan about how they would attempt suicide, and 8% had attempted suicide one or more times during the 12 months before the survey.[4] The percentage of students who seriously considered attempting suicide decreased during 1991–2009 (29%–14%) and then increased during 2009–2011 (14%–16%).[4]

REFERENCES:

1. Web-based Injury Statistics Query and Reporting System (WISQARS) [database online]. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2012. Accessed May 29, 2012.

2. Borowsky IW, Ireland M, Resnick, MD. Adolescent suicide attempts: risks and protectors. *Pediatrics* 2001; 107:485– 493.

3. Bridge JA, Goldstein TR, Brent DA. Adolescent suicide and suicidal behavior. *Journal of Child Psychology and Psychiatry* 2006;47(3/4):372–394.

4. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

Tobacco Use

QUESTION(S):

31. Have you ever tried cigarette smoking, even one or two puffs?

32. How old were you when you smoked a whole cigarette for the first time?

33. During the past 30 days, on how many days did you smoke cigarettes?

34. During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day?

35. During the past 30 days, how did you usually get your own cigarettes?

36. During the past 30 days, on how many days did you smoke cigarettes on school property?

37. Have you ever smoked cigarettes daily, that is, at least one cigarette every day for 30 days?

38. During the past 12 months, did you ever try to quit smoking cigarettes?

RATIONALE:

These questions measure ever and current smoking patterns, age of initiation, access to cigarettes, smoking on school property, and attempts to quit smoking. Cigarette smoking is the leading cause of preventable death in the United States[(1)] and accounts for approximately 440,000 deaths each year.[(2)] Cigarette smoking increases risk of heart disease; chronic obstructive pulmonary disease; acute respiratory illness; stroke; and cancers of the lung, larynx, oral cavity, pharynx, pancreas, and cervix.[(1,3)] In addition, as compared to nonsmokers, cigarette smokers are more likely to drink alcohol, use marijuana and cocaine, engage in risky sexual behaviors, engage in physical fighting, carry a weapon, and attempt suicide.[(3- 5)] If current patterns of smoking behavior persist, an estimated 6.4 million U.S. persons who were under the age of 18 in 2000 could die prematurely from smoking-related illnesses.[(6)] In 2006, approximately 64% of schools had adopted policies that 1) prohibited cigarette smoking and smokeless tobacco use among students, faculty and staff, and school visitors in school buildings; outside on school grounds; on school buses or other vehicles used to transport students; and at off-campus, school-sponsored events; and 2) prohibited cigar or pipe smoking by students, faculty and staff, and school visitors.[(7)] Among high school students nationwide in 2011, 45% had ever tried cigarette smoking, 18% had smoked cigarettes on at least 1 day during the 30 days before the survey, and 5% had smoked cigarettes on school property on at least 1 day during the 30 days before the survey.[(8)] The percentage of high school students who had ever tried cigarette smoking did not change significantly during 1991–1999 (70%–70%) and then decreased during 1999–2011 (70%–45%).[(8)] The percentage

of high school students who had smoked cigarettes on at least 1 day during the 30 days before the survey increased significantly during 1991–1997 (27%–36%) and then decreased during 1997–2011 (36%–18%).[8]

REFERENCES:

1. U.S. Department of Health and Human Services. *The Health Consequences of Smoking: A Report of the Surgeon General.* U.S. Department of Health and Human Services; Centers for Disease Control and Prevention; National Center for Chronic Disease Prevention and Health Promotion; Office on Smoking and Health; 2004.

2. Centers for Disease Control and Prevention. Annual smoking-attributable mortality, years of potential life lost, and productivity losses—United States, 2000–2004. *MMWR* 2008;57(45):1226–1228.

3. U.S. Department of Health and Human Services. *Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2012.

4. Everett SA, Malarcher AM, Sharp DJ, Husten CG, Giovino GA. Relationship between cigarette, smokeless tobacco, and cigar use, and other health risk behaviors among U.S. high school students. *Journal of School Health* 2000;70:234-240.

5. Substance Abuse and Mental Health Services Administration, *Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings*, NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2011. Available at http://www.samhsa.gov/data/NSDUH/2k10NSDUH/2k10Results.htm#4.9. Accessed May 22, 2012.

6. Hahn EJ, Rayens MK, Chaloupka FJ, Okoli CTC, Yang J. Projected smoking-related deaths among U.S. youth: A 2000 update. *ImpacTeen. Research Paper Series* 2002;22.

7. Kann L, Brener ND, Wechsler H. Overview and summary: School Health Policies and Programs Study 2006. *Journal of School Health* 2007;77(8):385-397.

8. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

QUESTION(S):

39. During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip, such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, or Copenhagen?

40. During the past 30 days, on how many days did you smoke cigars, cigarillos, or little cigars?

RATIONALE:

These questions measure smokeless tobacco use and cigar use. Smokeless tobacco contains 28 known human carcinogens.[1] Use of smokeless tobacco products increases the risk of developing cancer of the oral cavity.[1] Other oral health problems strongly associated with smokeless tobacco use are leukoplakia (a lesion of the soft tissue that consists of a white patch or plaque that cannot be scraped off) and recession of the gums.[2-4] Smokeless tobacco use also causes an increased risk of heart disease and stroke.[5] Among high school students nationwide in 2011, 8% had used smokeless tobacco (e.g., chewing tobacco, snuff, or dip) on at least 1 day during the 30 days before the survey.[6] The percentage of students who reported smokeless tobacco use on at least 1 day during the 30 days before the survey decreased during 1995–2003 (11%–7%) and then did not change significantly during 2003–2011 (7%–8%).[6] Cigar smoking can cause lung cancer, coronary heart disease, and chronic obstructive pulmonary disease.[7-9] The overall risk of oral and pharyngeal cancer is 7-10 times higher among cigar smokers compared to those who never smoked.[10] In 2011, 13% of high school students nationwide had smoked cigars, cigarillos, or little cigars on at least 1 day during the 30 days before the survey.[6] The percentage of students who had smoked cigars, cigarillos, or little cigars on at least 1 day during the 30 days before decreased during 1997–2005 (22%–14%) and then did not change significantly during 2005–2011 (14%–13%).[6]

REFERENCES:

1. National Cancer Institute. *Smokeless Tobacco or Health: An International Perspective.* Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute; 1992. Available at http://cancercontrol.cancer.gov/tcrb/monographs/2/index.html. Accessed May 24, 2012.

2. Johnson GK, Slach NA. Impact of tobacco use on periodontal status. *Journal of Dental Education* 2001;65:313-321.

3. U.S. Department of Health and Human Services. *Preventing Tobacco Use Among Young People: A Report of the Surgeon General.* Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 1994.

4. World Health Organization. *Smokeless Tobacco and Some Tobacco-Specific N-Nitrosamines.* Lyon, France: World Health Organization; 2007. International Agency for Research on Cancer Monographs on the Evaluation of Carcinogenic Risks to Humans, Vol. 89.

5. Henley SJ, Thun MJ, Connell C, Calle EE. Two large prospective studies of mortality among men who use snuff or chewing tobacco (United States). *Cancer Causes and Control* 2005;16:347-358.

6. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

7. U.S. Department of Health and Human Services. *Smoking and Tobacco Control Monograph No. 9: Cigars - Health Effects and Trends.* Bethesda, MD: U.S. Department of Health and Human Services, National Cancer Institute; 1998. No. 98-4302:217.

8. Shaper AG, Wannamethee SG, Walker M. Pipe and cigar smoking and major cardiovascular events, cancer incidence and all-cause mortality in middle-age British men. *International Journal of Epidemiology* 2003;32:802-808.

9. Rodriguez J, Jiang R, Johnson WC, MacKenzie BA, Smith LJ, Barr RG. The association of pipe and cigar use with cotinine levels, lung function, and airflow obstruction. A cross-sectional study. *Annals of Internal Medicine*. 2010;152:201-10.

10. U.S. Department of Health and Human Services. *Oral Health in America: A Report of the Surgeon General.* Rockville, MD: U.S. Department of Health and Human Services, National Institute for Dental and Craniofacial Research, National Institutes of Health; 2000.

Alcohol and Other Drug Use

QUESTION(S):

41. During your life, on how many days have you had at least one drink of alcohol?

42. How old were you when you had your first drink of alcohol other than a few sips?

43. During the past 30 days, on how many days did you have at least one drink of alcohol?

44. During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?

45. During the past 30 days, what is the largest number of alcoholic drinks you had in a row, that is, within a couple of hours?

46. During the past 30 days, how did you usually get the alcohol you drank?

RATIONALE:

These questions measure ever and current use of alcohol, age of initiation, binge drinking, the largest number of alcoholic drinks consumed during a drinking occasion, and access to alcohol. Alcohol is used by more young people than tobacco or illicit drugs.[1] Heavy alcohol drinking and binge drinking among youth is associated with risky sexual behaviors, being a victim of dating violence, and use of cigarettes, marijuana, cocaine, and other illegal drugs.[2-7] Persons who begin drinking alcohol before the age of 15 years are five times as likely to report alcohol dependence or abuse than those who first drank alcohol at age 21 or older.[8] Initiation of alcohol use before 13 years of age also has been associated with an increased risk for suicide.[9,10] Little is currently known about the largest number of drinks consumed by high school students when they drink. However, persons 18-24 years of age consume an average of 9.5 drinks per binge episode[11] and binge drinking by high school students is strongly correlated with binge drinking by adults in the same state.[12] Motor vehicle crashes are the leading cause of death among youth ages 15–19 years in the United States[13] and alcohol use is associated with 22% of all traffic-related fatalities, including 18% of all traffic fatalities among drivers 16 to 20 years of age.[14] Limiting youth access to alcohol has reduced underage alcohol use and alcohol-related problems.[15] However, youth continue to obtain alcohol from a variety of sources, reflecting the need for improved enforcement of underage drinking laws as well as greater public awareness of restrictions on drinking alcohol by underage youth. Among high school students nationwide in 2011, 71% had had at least one drink of alcohol on at least 1 day during their life and 39% had had at least one drink of alcohol on at least 1 day during the 30 days before the survey.[16] In addition, 22% of high school students had had 5 or more drinks of alcohol in a row on at least 1 day during the 30 days before the survey.[16] The percentage of high school students who had had at least one drink of alcohol on at least 1 day during their life did

not change significantly during 1991–1999 (82%–81%), and then decreased during 1999–2011 (81%–71%).[16]

REFERENCES:

1. Substance Abuse and Mental Health Services Administration. *Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings*, NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2011.

2. Dunn MS, Bartee RT, Perko MA. Self-reported alcohol use and sexual behaviors of adolescents. *Psychological Reports* 2003;92:339-348.

3. Cavazos-Rehg PA, Krauss MJ, Spitznagel EL, Schootman M, Cottler LB, Bierut LJ. Substance use and the risk for sexual intercourse with and without a history of teenage pregnancy among adolescent females. *Journal of Studies on Alcohol and Drugs* 2011;72:194-198.

4. Anderson JE, Mueller TE. Trends in sexual risk behavior and unprotected sex among high school students, 1991-2005: the role of substance use. *Journal of School Health* 2008;78:575-580.

5. Young A, Grey M, Abbey A, Boyd CJ, McCabe SE. Alcohol-related sexual assault victimization among adolescents: prevalence, characteristics, and correlates. *Journal of Studies on Alcohol and Drugs* 2008;69:39-48.

6. Miller JW, Naimi TS, Brewer RD, Jone SE. Binge drinking and associated health risk behaviors among high school students. *Pediatrics* 2007;119:76-85.

7. Johnson P, Boles SM, Vaughan R, Herbert D. The co-occurrence of smoking and binge drinking in adolescence. *Addictive Behaviors* 2000;25:779-783.

8. Substance Abuse and Mental Health Services Administration. *Alcohol dependence or abuse and age at first use.* The NSDUH Report October 22, 2004. Available at http://oas.samhsa.gov/2k4/ageDependence/ageDependence.cfm. Accessed June 1, 2012.

9. Swahn MH, Bossarte RM, Sullivent EE. Age of alcohol use initiation, suicidal behavior, and peer and dating violence victimization and perpetration among high-risk, seventh-grade adolescents. *Pediatrics* 2008;121:297-305.

10. Bossarte RM, Swahn MH. The associations between early alcohol use and suicide attempts among adolescents with a history of major depression. *Addictive Behaviors* 2011;36:532-535.

11. Naimi TS, Nelson DE, Brewer RD. The intensity of binge alcohol consumption among U.S. adults. *American Journal of Preventive Medicine* 2010;38(2):201–207.

12. Nelson DE, Naimi TS, Brewer RD, Nelson HA. State alcohol-use estimates among youth and adults, 1993-2005. *American Journal of Preventive Medicine* 2009;36(3):218–224.

13. Web-based Injury Statistics Query and Reporting System (WISQARS) [database online]. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2012. Accessed June 1, 2012.

14. National Highway Traffic Safety Administration. *Traffic Safety Facts, 2010 Data: Alcohol-Impaired Driving*. Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration; 2012. Available at http://www.nrd.nhtsa.dot.gov/Pubs/811606.pdf. Accessed June 1, 2012.

15. Klepp KI, Schmid LA, Murray DM. Effects of the increased minimum drinking age law on drinking and driving behavior among adolescents. *Addiction Research* 1996;4:237-244.

16. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR Surveillance Summary* 2012;61(No. SS-4):1-162.

QUESTION(S):

47. During your life, how many times have you used marijuana?

48. How old were you when you tried marijuana for the first time?

49. During the past 30 days, how many times did you use marijuana?

50. During your life, how many times have you used any form of cocaine, including powder, crack, or freebase?

51. During your life, how many times have you sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high?

52. During your life, how many times have you used heroin (also called smack, junk, or China White)?

53. During you life, how many times have you used methamphetamines (also called speed, crystal, crank, or ice)?

54. During your life, how many times have you used ecstasy (also called MDMA)?

55. During your life, how many times have you taken steroid pills or shots without a doctor's prescription?

56. During your life, how many times have you taken a prescription drug (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) without a doctor's prescription?

57. During your life, how many times have you used a needle to inject any illegal drug into your body?

58. During the past 12 months, has anyone offered, sold, or given you an illegal drug on school property?

RATIONALE:

These questions measure ever and current use of marijuana and ever use of cocaine, inhalants, heroin, methamphetamines, ecstasy, steroids, and injected drugs; use of prescription drugs without a doctor's prescription; and illegal drug activity on school property. Among youth, illicit drug use is associated with heavy alcohol and tobacco use,[1] violence and delinquency,[2-5] and suicide.[6] All school districts prohibit illegal drug possession or use by students on school property.[7] Among high school students nationwide in 2011, 40% had used marijuana, 7% had used any form of cocaine, 3% had used heroin, 4% had used methamphetamines, and 8% had used ecstasy one or more times during their life, and 4% had taken steroid pills or shots without a doctor's prescription.[8] In addition, 11% of high school students had sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high and 2% had used a needle to inject any illegal drug into their body one or more times during their life.[8] Also, 26% of students had been offered, sold, or given an illegal drug on school property during the 12 months before the survey. [8] The percentage of high school students who had used marijuana one or more times during their life increased during 1991–1999 (31%–47%) and then decreased during 1999–2011 (47%–40%).[8]

REFERENCES:

1. Substance Abuse and Mental Health Services Administration. *Results from the 2010 National Survey on Drug Use and Health: Summary of National Findings*. NSDUH Series H-41, HHS Publication No. (SMA) 11-4658. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2011. Available at: http://www.samhsa.gov/data/NSDUH/2k10NSDUH/2k10Results.pdf. Accessed June 1, 2012.

2. Substance Abuse and Mental Health Services Administration. Youth violence and illict drug use. The NSDUH Report 2006;5:1-3. Available at: http://www.oas.samhsa.gov/2k6/youthViolence/youthViolence.pdf. Accessed

June 1, 2012.

3. Substance Abuse and Mental Health Services Administration. Marijuana use and delinquent behaviors among youths. *The NSDUH Report* January 9, 2004. Available at http://www.samhsa.gov/data/2k4/MJdelinquency/MJdelinquency.pdf. Accessed June 1, 2012.

4. Substance Abuse and Mental Health Services Administration. Inhalant use and delinquent behaviors among young adolescents. *The NSDUH Report* March 17, 2005. Available at http://oas.samhsa.gov/2k5/inhale/inhale.pdf. Accessed June 1, 2012.

5. Substance Abuse and Mental Health Services Administration. Nonmedical stimulant use, other drug use, delinquent behaviors, and depression among adolescents. *The NSDUH Report* February 28, 2008. Available at http://oas.samhsa.gov/2k8/stimulants/depression.pdf. Accessed June 1, 2012.

6. Substance Abuse and Mental Health Services Administration. Substance use and the risk of suicide among youths. *The NHSDA Report* July 12, 2002. Available at http://oas.samhsa.gov/2k2/suicide/suicide.cfm. Accessed May 19, 2012.

7. Everett Jones S, Fisher CJ, Greene BZ, Hertz MF, Pritzl J. Healthy and safe school environment, part I: results from the School Health Policies and Programs Study 2006. *Journal of School Health* 2007;77(8):522-543.

8. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

Sexual Behaviors that Contribute to Unintended Pregnancy and Sexually Transmitted Diseases, Including HIV Infection

QUESTION(S):

59. Have you ever had sexual intercourse?

60. How old were you when you had sexual intercourse for the first time?

61. During your life, with how many people have you had sexual intercourse?

62. During the past 3 months, with how many people did you have sexual intercourse?

63. Did you drink alcohol or use drugs before you had sexual intercourse the last time?

64. The last time you had sexual intercourse, did you or your partner use a condom?

65. The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy?

85. Have you ever been taught about AIDS or HIV infection in school?

RATIONALE:

These questions measure the prevalence of sexual activity, number of sexual partners, age at first intercourse, alcohol and other drug use related to sexual activity, condom use, contraceptive use, and whether high school students received HIV prevention education. Early initiation of sexual intercourse is associated with having a greater number of lifetime sexual partners.[1-2] In addition, adolescents who initiate sexual intercourse early are less likely to use contraception[2-3] and are at higher risk for STDs[4] and pregnancy.[5,6] Estimates suggest that while representing 25% of the ever sexually active population, persons aged 15- to 24-years acquire nearly half of all new STDs.[7] Gonorrhea rates are highest among females between the ages of 15 and 19 years (570.9 cases per 100,000 females) and males between the ages of 20 and 24 years (421.0 cases per 100,000 males).[8] Between 2006 and 2009, the rate of HIV diagnoses in the 40 states with mature confidential name-based HIV infection reporting increased 24% among persons ages 13-19 years and 31% among persons aged 20- to 24-years. By the end of 2008, in the 40 states with confidential name-based HIV infection reporting there were an estimated 7,859 persons ages 13–19 years living with a diagnosis of HIV infection and 3,388 living with a diagnosis of AIDS.[9] Among high school students nationwide in 2011, 47% had ever had sexual intercourse, 15% had had sexual intercourse with four or more persons during their life, and 34% had had sexual intercourse with at least one person during the 3 months before the survey.[10] The percentage of students who ever had sexual intercourse decreased during 1991– 2001 (54%–46%) and then did not change significantly during 2001–2011 (46%–47%). The percentage of students who had sexual intercourse with four or more persons during their life decreased during 1991–2001

(19%–14%) and then did not change significantly during 2001–2011 (14%–15%). During 1991–2011, there was a significant linear decrease in the percentage of students who had had sexual intercourse with at least one person during the 3 months before the survey (37%–34%).[10] In 2011, among the 34% of students who were currently sexually active, 60% reported that either they or their partner had used a condom during last sexual intercourse.[10] The percentage of sexually active students who used a condom during last sexual intercourse increased during 1991–2003 (46%–63%) and then did not change significantly during 2003–2011 (63%–60%).[10] In 2006, 88% of high schools taught HIV prevention education in a required health education course.[11] Among high school students nationwide in 2011, 84% of students had ever been taught in school about AIDS or HIV infection.[10] The percentage of students who were taught in school about AIDS or HIV infection increased during 1991–1997 (83%–92%) and then decreased during 1997–2011 (92%–84%).[10]

REFERENCES:

1. Santelli JS, Brener ND, Lowry R, et al. Multiple sexual partners among U.S. adolescents and young adults. *Family Planning Perspectives* 1998;30:271–5.

2. Martinez G, Copen CE, Abma JC. Teenagers in the United States: Sexual activity, contraceptive use, and childbearing, 2006–2010 National Survey of Family Growth. National Center for Health Statistics. *Vital Health Stat* 2011; 23(31). Available at http://www.cdc.gov/nchs/data/series/sr_23/sr23_031.pdf Accessed May 8, 2012.

3. Manning WD, Longmore MA, Giordano PC. The relationship context of contraceptive use at first intercourse. *Family Planning Perspectives* 2000;32(3):104–110.

4. Kaestle CE, Halpern CT, Miller WC, Ford CA. Young age at first sexual intercourse and sexually transmitted infections in adolescents and young adults. *American Journal of Epidemiology* 2005;161(8):774-780.

5. Manlove J, Terry E, Gitelson L, Papillo AR, Russell S. Explaining demographic trends in teenage fertility, 1980–1995. *Family Planning Perspectives* 2000;32(4):166–175.

6. Thornberry TP, Smith CA, Howard GJ. Risk factors for teenage fatherhood. *Journal of Marriage & Family* 1997;59:505–522.

7. Weinstock H, Berman S, Cates W. Sexually transmitted disease among American youth: Incidence and prevalence estimates, 2000. *Perspectives on Sexual and Reproductive Health* 2004;36(1):6–10.

8. Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2010. Atlanta: U.S. Department of Health and Human Services;

2011. Available at http://www.cdc.gov/std/stats10/default.htm. Accessed May 8, 2012.

9. Centers for Disease Control and Prevention. Diagnoses of HIV infection and AIDS among adolescents and young adults in the United States and 5 U.S. dependent areas, 2006–2009. *HIV Surveillance Supplemental Report* 2012;17(No. 2). Available at http://www.cdc.gov/hiv/surveillance/resources/reports/2009supp_vol17no2/index.htm. Accessed May 8, 2012.

10. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

11. Kann L, Telljohann SK, Wooley SF. Health education: results from the School Health Policies and Programs Study 2006. *Journal of School Health* 2007;77: 408-434.

Obesity, Overweight, and Weight Control

QUESTION(S):

6. How tall are you without your shoes on?

7. How much do you weigh without your shoes on?

66. How do you describe your weight?

RATIONALE:

These questions measure self-reported height and weight and perceived body weight. Data on self-reported height and weight is used to calculate body mass index (BMI) and determine the corresponding BMI-for-age percentile for adolescents. BMI-for-age percentile is a proxy measure of weight status, correlates with body fat,[1] and is recommended for assessing weight status in youth ages 2-20.[2] Although BMI calculated from self-reported height and weight underestimates the prevalence of obesity compared to BMI calculated from measured height and weight,[3] self-reported height and weight are useful for tracking BMI trends over time. In addition, obesity prevalence trends from national surveys of adults using self-reported height and weight[4] have been consistent with trend data from national surveys using measured height and weight.[5] It is critical to continue monitoring height and weight because the prevalence of obesity among adolescents has tripled since 1980.[6] Obesity during adolescence is associated with negative psychological and social consequences and health problems such as type 2 diabetes, obstructive sleep apnea, hypertension, dyslipidemia, and metabolic syndrome.[7] Further, obese adolescents are more likely to become obese adults.[8,9] Nationwide in 2011, based on national YRBS data, 13% of high school students were obese and 15% were overweight.[10] During 1999–2011, significant linear increases occurred in the percentage of students who were obese (11%–13%) and who were overweight (14%–15%).[10]

REFERENCES:

1. Mei Z, Grummer-Strawn LM, Pietrobelli A, Goulding A, Goran MI, Dietz WH. Validity of body mass index compared with other body-composition screening indexes for assessment of body fatness in children and adolescents. *American Journal of Clinical Nutrition* 2002;75(6):978-985.

2. Krebs NF, Himes JH, Jacobson D, Nicklas TA, Guilday P, Styne D. Assessment of child and adolescent overweight and obesity. *Pediatrics* 2007;120:S193-S228.

3. Brener ND, McManus T, Galuska DA, Lowry R, Wechsler H. Reliability and validity of self-reported height and weight among high school students. *Journal of Adolescent Health* 2003;32:281-287.

4. Galuska DA, Serdula M, Pamuk E, Siegel PZ, Byers T. Trends in overweight among US adults from 1987 to 1993: a multistate telephone survey. *American Journal of Public Health* 1996;86:1729-1735.

5. Centers for Disease Control and Prevention. Update: Prevalence of overweight among children, adolescents, and adults – United States, 1988-1994. *Morbidity and Mortality Weekly Report* 1997;46(9):199-202.

6. Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of obesity and trends in body mass index among US children and adolescents, 1999-2010. *JAMA* 2012;307(5):E1.

7. Daniels SR, Arnett DK, Eckel RH, et al. Overweight in children and adolescents: Pathophysiology, consequences, prevention, and treatment. *Circulation* 2005;111:1999-2012.

8. Guo SS, Wu W, Cameron W, Roche AF. Predicting overweight and obesity in adulthood from body mass index values in childhood and adolescence. *American Journal of Clinical Nutrition* 2002;76:653-658.

9. Freedman DS, Khan LK, Serdula MK, Dietz WH, Srinivasan SR, Berenson GS. The relation of childhood BMI to adult adiposity: The Bogalusa Heart Study. *Pediatrics* 2005;115(1):22-27.

10. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

QUESTION(S):

67. Which of the following are you trying to do about your weight?

68. During the past 30 days, did you go without eating for 24 hours or more (also called fasting) to lose weight or to keep from gaining weight?

69. During the past 30 days, did you take any diet pills, powders, or liquids without a doctor's advice to lose weight or to keep from gaining weight? (Do not count meal replacement products such as Slim Fast.)

70. During the past 30 days, did you vomit or take laxatives to lose weight or to keep from gaining weight?

RATIONALE:

Current recommendations promote healthy eating and physical activity as effective weight control behaviors.[1,2] Unhealthy weight control behaviors include fasting, taking diet pills or laxatives, or inducing vomiting. Engaging in unhealthy weight control behaviors may result in physical and psychological health problems such as obesity, eating disorders such as anorexia and bulimia,[3] and stunted growth.[4] Disordered eating behaviors are correlated with inadequate nutrient intake,[5] low self-esteem, high levels of depression, suicidal ideation, high levels of stress, and alcohol and drug use.[6] Nationwide in 2011, 46% of high school students were trying to lose weight.[7] In 2011, 12% of high school students did not eat for 24 or more hours to lose weight or to keep from gaining weight, 5% of high school students had taken diet pills, powders, or liquids without a doctor's advice, and 4% had vomited or taken laxatives to lose weight or keep from gaining weight during the 30 days before the survey.[7] During 1999–2011, the percentage of students who did not eat for 24 or more hours to lose weight or to keep from gaining weight decreased (13%–12%).[7] The percentage of students who took diet pills, powders, or liquids to lose weight or to keep from gaining weight increased during 1999–2001 (8%–9%) and then decreased during 2001–2011 (9%–5%).[7] The percentage of students who vomited or took laxatives to lose weight or to keep from gaining weight did not change significantly during 1995–2003 (5%–6%) and then decreased during 2003–2011 (6%–4%).[7]

REFERENCES:

1. Davis MM, Gance-Cleveland B, Hassink S, Johnson R, Paradis G, Resnicow K. Recommendations for prevention of childhood obesity. *Pediatrics* 2007;120:S229

2. Spear BA, Barlow SE, Ervin C, et al. Recommendations for treatment of child and adolescent overweight and obesity. *Pediatrics* 2007;120:S254.

3. Neumark-Sztainer D, Wall M, Guo J, Story M, Haines J, Eisenberg M. Obesity, disordered eating, and eating disorders in a longitudinal study of adolescents: How do dieters fare 5 years later? *Journal of the American Dietetic Association* 2006;106: 559 – 568.

4. Golden NH, Katzman DK, Kreipe RE, et al. Eating disorders in adolescents: Position paper of the Society for Adolescent Medicine. *Journal of Adolescent Health* 2003;33:496-503.

5. Neumark-Sztainer D, Hannan PJ, Story M, Perry CL. Weight-control behaviors among adolescent girls and boys: Implications for dietary intake. *Journal of the American Dietetic Association* 2004;104:913-920.

6. Neumark-Sztainer D, Hannan PJ. Weight-related behaviors among adolescent girls and boys. *Archives of Pediatric and Adolescent Medicine* 2000;154:569-577.

7. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

Dietary Behaviors

QUESTION(S):

71. During the past 7 days, how many times did you drink 100% fruit juices such as orange juice, apple juice, or grape juice? (Do not count punch, Kool-Aid, sports drinks, or other fruit-flavored drinks.)

72. During the past 7 days, how many times did you eat fruit? (Do not count fruit juice.)

73. During the past 7 days, how many times did you eat green salad?

74. During the past 7 days, how many times did you eat potatoes? (Do not count french fries, fried potatoes, or potato chips.)

75. During the past 7 days, how many times did you eat carrots?

76. During the past 7 days, how many times did you eat other vegetables? (Do not count green salad, potatoes, or carrots.)

77. During the past 7 days, how many times per day did you usually drink a can, bottle, or glass of soda or pop, such as Coke, Pepsi, or Sprite? (Do not count diet soda or diet pop.)

78. During the past 7 days, how many glasses of milk did you drink? (Count the milk you drank in a glass or cup, from a carton, or with cereal. Count the half pint of milk served at school as equal to one glass.)

79. During the past 7 days, on how many days did you eat breakfast?

RATIONALE:

These questions measure dietary behaviors, including consumption of fruits and vegetables, and soda or pop. The fruit and vegetable questions are similar to questions asked of adults on the Centers for Disease Control and Prevention Behavioral Risk Factor Survey 2009 questionnaire.[1] Fruits and vegetables are good sources of complex carbohydrates, vitamins, minerals, and other substances that are important for good health. There is probable evidence to suggest that dietary patterns with higher intakes of fruits and vegetables are associated with a decreased risk for some types of cancer,[2-4] cardiovascular disease,[5] and stroke.[6] Although data are limited, an increased intake of fruits and vegetables appears to be associated with a decreased risk of being overweight.[7-9] In 2011, during the 7 days before the survey, 34% of high school students nationwide had eaten fruit or drunk 100% fruit juice two or more times per day and 15% of students had eaten vegetables three or more times per day.[10] The percentage of students who ate fruit or drank 100% fruit juice two or more times per day decreased

during 1999–2005 (35%–30%) and then increased during 2005–2011 (30%–34%). The percentage of students who ate vegetables three or more times per day did not change during 1999–2011 (14%–15%).[10] In recent years, sugar-sweetened beverage consumption has significantly increased among children and adolescents.[11-12] Among persons ages 2-18 years, soft drinks (i.e. sugar-sweetened beverages) comprised 3% of the total daily calories consumed in 1977–1978 compared to 7% in 1999–2001.[11] Sugar-sweetened beverages are the primary source of added sugars in the diet of US children and adolescents and contributes an average of 173 kcal/day (8.5% of daily energy intake).[12] Consumption of sugar-sweetened beverages, including soft drinks, appears to be associated with increased risk of being overweight among children,[13,14] the development of metabolic syndrome and type 2 diabetes,[15] and is associated with a less healthy diet,[16] decreased bone density,[17] and dental decay.[18] Nationwide in 2011, 28% of high school students had drunk a can, bottle, or glass of soda or pop (not counting diet soda or diet pop) one or more times per day during the 7 days before the survey.[10] Milk is an important source of many nutrients, including calcium.[19] There is evidence that intake of milk and milk products is associated with bone health in children and adolescents and with a lower risk of cardiovascular disease and type 2 diabetes and with lower blood pressure in adults.[19] Although the recommended intake of milk and milk products is 3 cups per day for adolescents, most adolescents consume far less. [19] In 2011, 15% of high school students nationwide had drunk three or more glasses of milk per day.[10] Eating breakfast is associated with weight loss and weight loss maintenance,[19] improved nutrient intake,[19] and better cognitive function, academic performance, school attendance rates, psychosocial function, and mood.[20]

REFERENCES:

1. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System Survey Questionnaire. Atlanta, GA, U.S. Department of Health and Human Services; Centers for Disease Control and Prevention; 2009. Available at http://www.cdc.gov/brfss/questionnaires/pdf-ques/2009brfss.pdf. Accessed June 5, 2012.

2. Key T, Schatzkin A, Willet WC, Allen NE, Spencer EA, Travis RC. Diet, nutrition, and the prevention of cancer. *Public Health Nutrition* 2004;7(1A):187-200.

3. Kushi LH, Byers T, Doyle C, et al. American Cancer Society Guidelines on Nutrition and Physical Activity for cancer prevention: reducing the risk of cancer with healthy food choices and physical activity. *CA: A Cancer Journal for Clinicians* 2006; 56:254-281.

4. Vainio H, Weiderpass E. Fruit and vegetables in cancer prevention. *Nutrition and Cancer* 2006;54(1):111-42.

5. Bazzano LA, He J, Ogden LG, et al. Fruit and vegetable intake and risk of cardiovascular disease in US adults: the first National Health and Nutrition

Examination Survey Epidemiologic Follow-up Study. *American Journal of Clinical Nutrition* 2002;76(1):93-99.

6. He FJ, Nowson CA, MacGregor GA. Fruit and vegetable consumption and stroke: meta-analysis of cohort studies. *Lancet* 2006;367(9507):320-326.

7. Rolls BJ, Ello-Martin JA, Tohill BC. What can intervention studies tell us about the relationship between fruit and vegetable consumption and weight management. *Nutrition Reviews* 2004;62(1):1-17.

8. He K, Hu FB, Colditz GA, Manson JE, Willett WC, Liu S. Changes in intake of fruits and vegetables in relation to risk of obesity and weight gain among middle-aged women. *International Journal of Obesity* 2004;28:1569-1574.

9. Goss J, Grubbs L. Comparative analysis of body mass index, consumption of fruits and vegetables, smoking, and physical activity among Florida residents. *Journal of Community Health Nursing* 2005;22(1):37-46.

10. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

11. Nielsen SJ, Popkin BS. Changes in beverage intake between 1977 and 2001. *American Journal of Preventive Medicine* 2004;27(3):205-210.

12. Reedy J, Krebs-Smith SM. Dietary sources of energy, solid fats, and added sugars among children and adolescents in the United States. *Journal of the American Dietetic Association* 2010;110:1477–84.

13. Vartanian LR, Schwartz MB, Brownell KD. Effects of soft drink consumption on nutrition and health: a systematic review and meta-analysis. *American Journal of Public Health* 2007;97(4):667-675.

14. Malik V, Schulze M, Hu F. Intake of sugar sweetened beverages and weight gain: a systematic review. *American Journal of Public Health* 2007;97(4):667-675.

15. Malik VS, Popkin BM, Bray GA, Despres JP, Willett WC, Hu FB. Sugar-sweetened beverages and risk of metabolic syndrome and type 2 diabetes: a meta-analysis. *Diabetes Care* 2010;33:2477–83.

16. Marshall T, Gilmore J, Broffitt B, et al. Diet quality in young children is influenced by beverage consumption. *Journal of the American College of Nutrition* 2005;24(1):65-75.

17. Whiting S, Healey A, Psiuk S, et al. Relationship between carbonated and other low nutrient dense beverages and bone mineral content of adolescents. *Nutrition Research* 2001; 21(8):1107-1115.

18. Tahmassebi J, Duggal M, Malik-Kotru G, et al. Soft drinks and dental health: a review of the current literature. *Journal of Dental Research* 2006;34(1):2-11.

19. U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for Americans 2010*. 7th Edition, Washington, DC: U.S. Government Printing Office, December 2010. Available at http://www.cnpp.usda.gov/Publications/DietaryGuidelines/2010/PolicyDoc/PolicyDoc.pdf. Accessed May 16, 2012.

20. Rampersaud GC, Pereira M, Girard BL, Adams J, Metzl JD. Breakfast habits, nutritional status, body weight, and academic performance in children and adolescents. *Journal of the American Dietetic Association* 2005;105:743-760.

Physical Activity

QUESTION(S):

80. During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day? (Add up all the time you spend in any kind of physical activity that increases your heart rate and makes you breathe hard some of the time.)

81. On an average school day, how many hours do you watch TV?

82. On an average school day, how many hours do you play video or computer games or use a computer for something that is not school work? (Count time spent on things such as Xbox, PlayStation, an iPod, an iPad or other tablet, a smartphone, YouTube, Facebook or other social networking tools, and the Internet.)

83. In an average week when you are in school, on how many days do you go to physical education (PE) classes?

84. During the past 12 months, on how many sports teams did you play? (Count any teams run by your school or community groups.)

RATIONALE:

These questions measure participation in physical activity, physical education classes, and sports teams and time spent watching television (TV) and using a computer or playing video games. Participation in regular physical activity among young people can help build and maintain healthy bones and muscles, maintain body weight and reduce body fat, reduce feelings of depression and anxiety, and promote psychological well-being.[1] Over time, regular physical activity decreases the risk of high blood pressure, heart disease, diabetes, obesity, some types of cancer, and premature death.[1] In 2008, the U.S. Department of Health and Human Services recommended that young people ages 6–17 participate in at least 60 minutes of physical activity daily.[2] In 2011, 29% of high school students were physically active doing any kind of physical activity that increased their heart rate and made them breathe hard some of the time for a total of at least 60 minutes per day on each of the 7 days before the survey.[3] School physical education classes can increase adolescent participation in physical activity[4-8] and help high school students develop the knowledge, attitudes, and skills they need to engage in lifelong physical activity.[4,9] In 2011, 52% of high school students nationwide went to physical education classes on 1 or more days in an average week when they were in school.[3] Watching TV and using a computer are considered sedentary behaviors. Among youth, time spent watching TV is associated with childhood and adult obesity,[10-14] consumption of fast food, soft drinks, and high-fat snacks,[15-20] and consumption of fewer fruits and vegetables.[15,21-22] Youth who engage in less than two hours of TV viewing per day tend to be more active.[13] Computer usage and video game playing are associated with physical inactivity among adolescents[11] and young adults.[22] Among high school

students nationwide in 2011, 31% of students played video or computer games or used a computer for something that was not school work for 3 or more hours per day on an average school day and 32% watched television 3 or more hours per day on an average school day.[3] The percentage of students who used computers 3 or more hours per day did not change significantly during 2003–2005 (22%–21%) and then increased during 2005–2011 (21%–31%).[3] During 1999–2011, a significant linear decrease occurred in the percentage of high school students who watched television 3 or more hours per day (43%–32%).[3]

REFERENCES:

1. Physical Activity Guidelines Advisory Committee. *Physical Activity Guidelines Advisory Committee Report, 2008.* Washington, DC: U.S. Department of Health and Human Services; 2008.

2. U.S. Department of Health and Human Services. *2008 Physical Activity Guidelines for Americans*. Washington, DC, U.S. Department of Health and Human Services; 2008. Available at http://www.health.gov/PAguidelines/pdf/paguide.pdf. Accessed June 4, 2012.

3. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.

4. Trudeau F, Shephard RJ. Contribution of school programmes to physical activity levels and attitudes in children and adults. *Sports Medicine* 2005;35(2):89-105.

5. McKenzie TL, Li DL, Derby CA, Webber LS, Luepker RV, Cribb P. Maintenance of effects of the CATCH physical education program: results from the CATCH-ON Study. *Health Education & Behavior* 2003;30:447-462.

6. McKenzie TL, Sallis JF, Prochaska JJ, Conway TL, Marshall SJ, Rosengard P. Evaluation of a two-year middle-school physical education intervention: M-SPAN. *Medicine & Science in Sports & Exercise* 2004;36:1382-1388.

7. Pate R, Ward DS, Saunders RP, Felton G, Dishman RK, Dowda M. Promotion of physical activity among high school girls: a randomized controlled trial. *American Journal of Public Health* 2005;95:1582-87.

8. Gordon-Larsen P, McMurray RG, Popkin BM. Determinants of adolescent physical activity and inactivity patterns. *Pediatrics* 2000;105:83-91. Epub June 1, 2000. Available at http://pediatrics.aappublications.org/content/105/6/e83.abstract. Accessed June 2, 2012.

9. Dishman RK, Motl RW, Saunders R, et al. Enjoyment mediates effects of a school-based physical-activity intervention. *Medicine & Science in Sports & Exercise* 2005;37(3):478-487.

10. Fulton JE, Wang X, Yore MM, Carlson SA, Galuska DA, Caspersen CJ. Television viewing, computer usage, and BMI among U.S. children and adolescents. *Journal of Physical Activity and Health* 2009;6(Suppl 1): S28-S35.

11. Gordon-Larson P, Adair LS, Popkin BM. Ethnic differences in physical activity and inactivity patterns and overweight status. *Obesity Research* 2002;10(3):141-149.

12. Kaur H, Choi WS, Mayo MS, Harris KJ. Duration of television watching is associated with increased body mass index. *Journal of Pediatrics* 2003;143(4):506-511.

13. Lowry R, Wechsler H, Galuska D, Fulton J, Kann L. Television viewing and its associations with overweight, sedentary lifestyle, and insufficient consumption of fruits and vegetables among US high school students: differences by race, ethnicity, and gender. *Journal of School Health* 2002; 72(10):413-421.

14. Utter J, Neumark-Sztainer D, Jeffery R, Story M. Couch potatoes or french fries: are sedentary behaviors associated with body mass index, physical activity, and dietary behaviors among adolescents? *Journal of the American Dietetic Association* 2003;103(10):1298-1305.

15. Coon KA, Tucker KL. Television and children's consumption patterns. A review of the literature. *Minerva Pediatrica* 2001; 54:423-36.

16. Utter J, Scragg R, Schaaf D. Associations between television viewing and consumption of commonly advertised foods among New Zealand children and young adolescents. *Public Health Nutrition* 2006;9:606-12.

17. Matheson DM, Killen JD, Wang Y, Varady A, Robinson TN. Children's food consumption during television viewing. *American Journal of Clinical Nutrition* 2004;79:1088-94.

18. Coon KA, Goldberg J, Rogers BL, Tucker KL. Relationships between use of television during meals and children's food consumption patterns. *Pediatrics* 2001;107:E7.

19. Salmon J, Campbell KJ, Crawford DA. Television viewing habits associated with obesity risk factors: a survey of Melbourne schoolchildren. *Medical Journal of Australia* 2006;184:64-7.

20. Taveras EM, Sandora TJ, Shih M, Ross-Degnan D, Goldmann DA, Gillman MW. The association of television and video viewing with fast food intake by preschool-age children. *Obesity Research* 2006;14:2034-41.

21. Boynton-Jarrett R, Thomas T, Peterson K, Wiecha J, Sobol A, Gortmaker S. Impact of television viewing patterns on fruit and vegetable consumption among adolescents. *Pediatrics* 2003;112:1321-6.

22. Fotheringham MJ, Wonnacott RL, Owen N. Computer use and physical inactivity in young adults: public health perils and potentials of new information technologies. *Annals of Behavioral Medicine* 2000;22:269-275.

Asthma

QUESTION(S):

86. Has a doctor or nurse ever told you that you have asthma?

RATIONALE:

Approximately 10.1 million (14%) U.S. children <18 years have been diagnosed with asthma at some time in their lives.[(1)] In 2004, children made 7 million visits to doctors' offices and hospital outpatient departments, 754,000 visits to hospital emergency departments, and had 198,000 hospitalizations due to asthma.[(2)] In 2003, an estimated 12.8 million school days were lost due to asthma among school-aged children.[(2)] Among high school students nationwide in 2011, 23% had ever been told by a doctor or nurse that they ever had asthma.[(3)] During 2003–2011, the percentage of high school students nationwide who ever had asthma increased (19%–23%).[(3)]

REFERENCES:

1. National Center for Environmental Health. *2010 Lifetime and Current Asthma Population Estimates and Prevalence Tables.* National Health Interview Survey Data Web site. Available at http://www.cdc.gov/asthma/nhis/2010/data.htm. Accessed May 23, 2012.

2. Akinbami, Lara. *Asthma Prevalence, Health Care Use, and Mortality, 2003-2005.* Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics; 2007. Available at http://www.cdc.gov/nchs/data/hestat/asthma03-05/asthma03-05.htm. Accessed June 4, 2012.

3. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance – United States, 2011. *MMWR* Surveillance Summary 2012;61(No. SS-4):1-162.