

Item Rationale for the 2019 Standard High School YRBS

Behaviors that Result in Unintentional Injuries

QUESTION(S):

8. 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. Motor-vehicle crashes kill more adolescents aged 15–19 years than any other single cause in the United States.⁽¹⁾ In 2016, 2,627 adolescents were killed and more than 400,000 were treated in emergency departments for motor vehicle crash-related injuries.⁽¹⁾ Seat 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%.^(2,3) However, in 2016, among all fatally injured 16- to 19-year-old occupants, seat belt use among passengers (35%) was considerably lower than among drivers (49%).⁽⁴⁾ In 2017, 6% of high school students nationwide rarely or never wore a seat belt when riding in a car driven by someone else.⁽⁵⁾ During 1991–2017, among students nationwide, a significant linear decrease occurred in the prevalence of rarely or never wearing a seat belt (26%–6%).⁽⁵⁾

REFERENCES:

1. Web-based Injury Statistics Query and Reporting System (WISQARS) [database online]. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2016. Accessed June 11, 2018.
2. Kahane CJ. *Lives saved by vehicle safety technologies and associated Federal Motor Vehicle Safety Standards, 1960 to 2012 – Passenger cars and LTVs*. Publication no. DOT HS 812-069. U.S. Department of Transportation, National Highway Traffic Safety Administration; 2015. Available at: <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812069>. Accessed June 8, 2018.
3. National Highway Traffic Safety Administration. *Seat belt use in 2017—Overall results*. Traffic Safety Facts Research Note. Publication no. DOT HS 812-465. Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration; 2018. Available at: <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812465>. Accessed June 11, 2018.
4. Highway Data Loss Institute. *Fatality Facts: Teenagers 2016*. Insurance Institute for Highway Safety; 2018. Available at: <http://www.iihs.org/iihs/topics/t/teenagers/fatalityfacts/teenagers/2016#Passenger-vehicle-occupants>. Accessed June 11, 2018.

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5. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance — United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).
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QUESTION(S):

9. 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?
10. 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 2015, 20% of 15- to 20-year-old drivers who were involved in fatal motor vehicle crashes and 2% of young drivers involved in crashes resulting in at least one non-fatal injury had been drinking alcohol.⁽¹⁾ In 2016, 12% of fatally injured passenger vehicle drivers aged 16–17 years old had a blood alcohol concentration equal to or above the illegal threshold for adults of 0.08% at the time of the crash.⁽²⁾ In 2017, among the 63% of high school students who had driven a car or other vehicle during the 30 days before the survey, 6% had driven one or more times when they had been drinking alcohol. During 2013–2017, among high school students who had driven a car or other vehicle during the 30 days before the survey, the prevalence of students who had driven one or more times when they had been drinking alcohol decreased from 10% to 6%.⁽³⁾ Among high school students nationwide, 17% 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 riding with a driver who had been drinking alcohol decreased during 1991–2009 (40%–28%) and then further decreased during 2009–2017 (28%–17%).⁽³⁾

REFERENCES:

1. National Center for Statistics and Analysis. *Young Drivers: 2015 data*. Traffic Safety Facts Research Note. Publication no. DOT HS 812-363. Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration; 2017. Available at: <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812363>. Accessed June 11, 2018.
2. Highway Data Loss Institute. *Fatality Facts: Teenagers 2016*. Insurance Institute for Highway Safety; 2018. Available at: <http://www.iihs.org/iihs/topics/t/teenagers/fatalityfacts/teenagers#Alcohol-involvement>. Accessed June 11, 2018.

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3. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance — United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).
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QUESTION(S):

11. 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 crashes are the leading cause of death among U.S. adolescents aged 15–19.⁽¹⁾ In 2016, 9% of all drivers aged 15–19 involved in fatal crashes were reported as distracted at the time of the crash, and 19% of these distracted teens were distracted by the use of cell phones.⁽²⁾ Texting while driving is an especially risky type of distracted driving, as it involves three types of driver distraction: visual, physical/manual, and cognitive.⁽³⁾ In addition, teen drivers are more vulnerable to the effects of distraction, are less willing to disengage from a distracting behavior even as more road hazards are presented, and are less adept at handling road hazards than adults.⁽⁴⁻⁷⁾ In 2017, among the 63% of high school students nationwide who had driven a car or other vehicle during the 30 days before the survey, the prevalence of texting while driving one or more times in the 30 days before the survey was 39%.⁽⁸⁾ The prevalence of texting while driving among high school students who had driven a car or other vehicle during the 30 days before the survey did not change significantly from 2013 (41%) to 2017 (39%).⁽⁸⁾

REFERENCES:

1. Web-based Injury Statistics Query and Reporting System (WISQARS) [database online]. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2016. Accessed June 11, 2018.
2. National Center for Statistics and Analysis. *Distracted Driving 2016*. Traffic Safety Facts Research Note. Publication no. DOT HS 812-517. Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration; 2018. Available at: <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812517>. Accessed June 11, 2018.
3. Caird JK, Johnston KA, Willness CR, et al. A meta-analysis of the effects of texting on driving. *Accident Analysis & Prevention* 2014;71:311-318.
4. Durbin DR, McGehee DV, Fisher D, McCartt A. Special considerations in distracted driving with teens. *Annals of Advances in Automotive Medicine* 2014;58:69-83.

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5. Chisholm SL, Caird JK, Lockhart JA, et al. Novice and experienced driver performance with cellphones. Proceedings of the Human Factors and Ergonomics Society 50th Annual Meeting 2006:2354-2358.
6. Bates LJ, Davey J, Watson B, King MJ, Armstrong K. Factors Contributing to Crashes among Young Drivers. *Sultan Qaboos University Medical Journal* 2014;14(3):e297-e305.
7. 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.
8. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance — United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).

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Behaviors that Result in Violence

QUESTION(S):

12. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?
13. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club on school property?
14. During the past 12 months, on how many days did you carry a gun? (Do not count the days when you carried a gun only for hunting or for a sport, such as target shooting.)
15. 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?
16. 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. Violence is a significant public health issue among youth, with homicide being the third leading cause of death among youth ages 13–19 years (5.1 per 100,000).⁽¹⁾ Homicide is the leading cause of death among non-Hispanic black youth ages 13–19 years (26.3 per 100,000) and the second leading cause of death for Hispanic youth ages 13–19 years (5.7 per 100,000).⁽¹⁾ Approximately 10% of homicide victims in the United States in 2016 were aged 13–19 years; of these victims, 88% were killed with a firearm.⁽¹⁾ Of all violent deaths that occurred on school property between July 1994 and June 2016, 73% involved firearms.⁽²⁾ Nearly 100% of school districts have a policy prohibiting weapon possession or use by high school students on school property.⁽³⁾ Also, in 2016, 204,020 (695.5 per 100,000) nonfatal, physical assault injuries among youth aged 13–19 years were treated in U.S. emergency departments.⁽¹⁾

Among high school students nationwide in 2017, 16% had carried a weapon and 4% had carried a weapon on school property on at least 1 day during the 30 days before the survey.⁽⁴⁾ The prevalence of having carried a weapon decreased during 1991–1997 (26%–18%) and then did not change significantly during 1997–2017 (18%–16%).⁽⁴⁾ The prevalence of having carried a weapon on school property decreased during 1993–1997 (12%–9%) and then decreased more slowly during 1997–2017 (9%–4%).⁽⁴⁾ For the first time in 2017, the question assessing prevalence of having carried a gun during the 12 months before the survey instructed respondents not to count the days when they carried a gun only for hunting or for a sport, such as target shooting. As a result, long-term temporal trends and 2-year temporal changes are not available for this variable. In 2017, 5% of high school students carried a gun (not counting the days when they carried a gun only for hunting or for a sport, such as target shooting) during the 12 months before the survey.⁽⁴⁾

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Among high school students nationwide in 2017, 7% 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 6% had been threatened or injured with a weapon on school property one or more times during the 12 months before the survey.⁽⁴⁾ Among students nationwide, the prevalence of having not gone to school because of safety concerns increased significantly during 1993–2017 (4%–7%).⁽⁴⁾ 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 2003–2017 (9%–6%).⁽⁴⁾

REFERENCES:

1. Web-based Injury Statistics Query and Reporting System (WISQARS) [database online]. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2018. Accessed June 15, 2018.
 2. School-Associated Violent Death Surveillance System (SAVD-SS). Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2018. Accessed June 15, 2018.
 3. 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.
 4. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).
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QUESTION(S):

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

RATIONALE:

These questions measure the frequency of physical fights in general and on school property during the 12 months before the survey. 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 2017, 24% had been in a physical fight and 9% 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 1991–2011 (43%–33%) and then decreased further during 2011–2017 (33%–24%).⁽⁴⁾ The percentage of

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high school students who were in a physical fight on school property also decreased significantly during 1993–2017 (16%–9%).⁽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. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).
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QUESTION(S):

19. Have you ever been physically forced to have sexual intercourse when you did not want to?
20. During the past 12 months, how many times did anyone 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.)
21. 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.)
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.)

RATIONALE:

These questions measure the frequency of sexual violence and dating violence experienced by students. Sexual and dating violence victimization are associated with a range of negative consequences⁽¹⁻⁴⁾ including suicide ideation and attempts, major depressive episodes,⁽⁵⁻⁶⁾ increased alcohol and tobacco use, eating disorders, and risky sexual behavior.^(1,7-8) According to the Centers for Disease Control and Prevention’s National Intimate Partner and Sexual Violence Survey, 1 in 5 U.S. women have experienced (completed or attempted) rape and 1 in 14 U.S. men have been made to sexually penetrate someone else (completed or attempted) in their

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lifetime; among female victims of rape, 43.2% were under 18 years old at the time of their first victimization, and among male victims of being made to penetrate, 25.9% were under 18 at the time of the first victimization.⁽⁹⁾ About 1 in 4 women (23.2%) and 1 in 7 men (13.9%) have experienced severe physical violence by an intimate partner (e.g., hit with a fist or something hard, beaten, slammed against something) at some point in their lifetime.⁽¹⁰⁾ Among adults who ever experienced contact sexual violence, physical violence, and/or stalking by an intimate partner, 25.6% of women and 14.4% of men first experienced some form of violence by that partner between 11 and 17 years of age.⁽¹⁰⁾

All three sexual violence questions are important for understanding the public health burden of sexual violence against young people, guiding prevention strategies, and monitoring changes over time. These data are particularly useful for monitoring changes in trends and the effects of prevention efforts such as CDC's Rape Prevention Education Program.⁽¹¹⁾ Data on forced sexual activity by any perpetrator — not just a dating partner — provides a better understanding of the burden of sexual violence among high school students because studies have shown that perpetrators can include current or former friends, acquaintances, family members, and other adults.^(9,12) Preventing sexual violence by any perpetrator and dating violence are focus areas for CDC as they are part of adverse childhood experiences. Knowing the proportion of high school students who are sexually and physically victimized by a dating partner is also crucial because it provides a more complete measure of teen dating violence and prevention strategies often focus specifically on violence in dating relationships. These estimates are critically important for monitoring progress in this area.

In 2017, 7% of high school students nationwide had ever been physically forced to have sexual intercourse when they did not want to.⁽¹³⁾ The percentage of high school students who had ever been physically forced to have sexual intercourse when they did not want to decreased significantly during 2001–2017 (8%–7%).⁽¹³⁾ Among the students who dated or went out with someone during the 12 months before the survey, 8% experienced physical dating violence by a dating partner, and 7% experienced sexual dating violence by a dating partner.⁽¹³⁾ The percentage of high school students who experienced physical dating violence and sexual dating violence both decreased significantly during 2013–2017 (10%–8% and 10%–7%, respectively).⁽¹³⁾ The prevalence of high school students being forced to do sexual things they did not want to do by anyone (i.e., sexual violence) was assessed for the first time in 2017. Nationwide, 10% of students experienced sexual violence one or more times during the 12 months before the survey.⁽¹³⁾

REFERENCES:

1. Basile KC, Black MC, Simon TR, Arias I, Brener ND, Saltzman LE. The association between self-reported lifetime history of forced sexual intercourse and recent health-risk behaviors: Findings from the 2003 National Youth Risk Behavior Survey. *Journal of Adolescent Health* 2006;39(5):752-e1.
2. 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.

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3. Centers for Disease Control and Prevention. Physical dating violence among high school students —United States, 2003. *Morbidity and Mortality Weekly Report* 2006;55(19):532–535.
 4. 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.
 5. Wolitzky-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):755–762.
 6. 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.
 7. Silverman JG, Raj A, Mucci LA, Hathaway JE. Dating violence against adolescent girls and associated substance use, unhealthy weight control, sexual risk behavior, pregnancy, and suicidality. *Journal of the American Medical Association* 2001;286(5):572–579.
 8. Lormand DK, Markham CM, Peskin MF, et al. Dating violence among urban, minority, middle school youth and associated sexual risk behaviors and substance use. *Journal of School Health* 2013;83(6):415–421.
 9. Smith SG, Zhang, X., Basile, K.C., et al. *National Intimate Partner and Sexual Violence Survey: 2015 Data Brief*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2018.
 10. Smith SG, Chen J, Basile KC, et al. *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010-2012 State Report*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2017.
 11. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention. Rape prevention and education: Transforming communities to prevent sexual violence. Available at: <http://www.cdc.gov/ViolencePrevention/RPE/index.html>. Accessed June 13, 2018.
 12. Kilpatrick DG, Resnick HS, Ruggiero KJ, Conoscenti LM, McCauley J. Drug-facilitated, incapacitated, and forcible rape: A national study. Charleston, SC: Medical University of South Carolina, National Crime Victims Research & Treatment Center; 2007. Available at: <https://www.ncjrs.gov/pdffiles1/nij/grants/219181.pdf>. Accessed June 13, 2018.
 13. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).
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QUESTION(S):

23. During the past 12 months, have you ever been bullied on school property?
24. During the past 12 months, have you ever been electronically bullied? (Count being bullied through texting, Instagram, Facebook, or other social media.)

RATIONALE:

These questions measure the frequency of bullying victimization. Bullying victimization is associated with depression,⁽¹⁻²⁾ suicidal ideation,^(1,3-4) self-injury,⁽¹⁾ suicide attempts,^(1,3-4) increased odds of repeated common health problems,⁽⁵⁾ school absenteeism,⁽⁶⁾ psychological distress,⁽⁵⁾ externalizing problems,⁽⁷⁾ sleep disturbances,⁽³⁾ and feeling unsafe at school.⁽⁶⁾ Electronic bullying victimization has been associated with discipline problems in school, skipping school, weapon carrying,⁽⁸⁾ psychological distress,⁽⁹⁾ lower self-esteem,⁽¹⁰⁾ depression,⁽¹⁾ suicidal ideation,⁽⁴⁾ self-injury,⁽¹⁾ and suicide attempts.^(1,4) Among high school students nationwide in 2017, 19% reported that they had been bullied on school property during the 12 months before the survey and 15% had been electronically bullied through texting, Instagram, Facebook, or other social media during the 12 months before the survey.⁽¹¹⁾ No significant trends over time were observed for either bullying on school property or electronic bullying.

REFERENCES:

1. 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.
2. Hawker DS, Boulton MJ. Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *Journal of Child Psychology and Psychiatry* 2000;41(4):441-455.
3. van Geel M, Vedder P, Tanilon J. Relationship between peer victimization, cyberbullying, and suicide in children and adolescents. *Journal of American Medical Association Pediatrics* 2014;168(5):435-442.
4. Klomek AB, Sourander A, Gould M. The association of suicide and bullying in childhood to young adulthood: A review of cross-sectional and longitudinal research findings. *The Canadian Journal of Psychiatry* 2010;55(5):282-288.
5. Rigby K. Consequences of bullying in school. *The Canadian Journal of Psychiatry* 2003;48(9):583–590.
6. 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.

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7. McDougall P, Vaillancourt T. Long-term adult outcomes of peer victimization in childhood and adolescence: Pathways to adjustment and maladjustment. *American Psychologist* 2015;70(4):300-310.
 8. 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;41:42–50.
 9. 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.
 10. Patchin JW, Hinduja S. Cyberbullying and self-esteem. *Journal of School Health* 2010;80:614–621.
 11. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).
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QUESTION(S):

25. 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?
26. During the past 12 months, did you ever seriously consider attempting suicide?
27. During the past 12 months, did you make a plan about how you would attempt suicide?
28. During the past 12 months, how many times did you actually attempt suicide?
29. 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, suicidal ideation and planning, attempted suicide, and the severity of suicide attempts. Suicide is the second leading cause of death among youth aged 13–19 years.⁽¹⁾ The suicide rate for persons aged 13–19 years was 8.31 per 100,000 in 2016.⁽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 2017, 32% 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 2017, 17% had seriously considered attempting suicide, 14% had made a plan about how they would attempt suicide, 7% had attempted suicide one or more times, and 2% had a suicide attempt that resulted in an injury, poisoning, or overdose that had to be treated

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by a doctor or nurse (injured in a suicide attempt) during the 12 months before the survey.⁽⁴⁾ The percentage of students who seriously considered attempting suicide decreased during 1991–2007 (29%–15%) and then increased during 2007–2017 (15%–17%).⁽⁴⁾ The percentage of students who made a suicide plan decreased during 1991–2009 (19%–11%) and then increased during 2009–2017 (11%–14%).⁽⁴⁾ The percentage of students who attempted suicide significantly decreased during 1991–2017 (7%–7%).⁽⁴⁾ No significant trends over time were observed for being injured in a suicide attempt.

REFERENCES:

1. Web-based Injury Statistics Query and Reporting System (WISQARS) [database online]. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2018. Accessed June 15, 2018.
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. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).

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Alcohol and Other Drug Use

QUESTION(S):

40. How old were you when you had your first drink of alcohol other than a few sips?
41. During the past 30 days, on how many days did you have at least one drink of alcohol?
43. During the past 30 days, on how many days did you have 4 or more drinks of alcohol in a row, that is, within a couple of hours (if you are female) or 5 or more drinks of alcohol in a row, that is, within a couple of hours (if you are male)?
44. 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?
42. During the past 30 days, how did you usually get the alcohol you drank?

RATIONALE:

These questions measure current use of alcohol, age of initiation, binge drinking, the largest number of alcoholic drinks consumed during a drinking occasion, and access to alcohol. Excessive drinking is responsible for more than 4,300 deaths among underage youth each year, and cost the U.S. \$24 billion in 2010.^(1,2) Underage drinking contributes to a wide range of health and social problems, including motor vehicle crashes, suicide, interpersonal violence (e.g., homicides, assaults, rapes), unintentional injuries (e.g., burns, falls, drowning), risky sexual activity, academic problems, and alcohol and drug poisoning.^(3,4) Early initiation of drinking is also associated with increased risks of developing an alcohol use disorder later in life and suicide.^(3, 5-7) Binge drinking is the most common pattern of excessive alcohol use in the United States, and about 90% of the alcohol consumed by youth is in the form of binge drinks.^(7,8) The National Institute on Alcohol Abuse and Alcoholism defines binge drinking as a pattern of drinking that brings a person's blood alcohol concentration to 0.08% or above. This typically happens when males consume 5 or more drinks and when females consume 4 or more drinks in about 2 hours.⁽⁹⁾ Limiting youth access to alcohol has reduced underage alcohol use and alcohol-related problems.⁽¹⁰⁻¹²⁾ However, youth continue to obtain alcohol from a variety of sources, particularly from adults of legal drinking age.⁽¹³⁾

Among high school students nationwide in 2017, 60% drank at least one drink of alcohol on at least 1 day during their life and 30% had had at least one drink of alcohol on at least 1 day during the 30 days before the survey.⁽¹³⁾ In addition, 18% of high school students reported binge drinking (defined as 4 or more drinks of alcohol in a row for females and 5 or more drinks of alcohol in a row for males within a couple of hours) on at least 1 day during the 30 days before the survey.⁽¹³⁾ The percentage of high school students who had at least one drink of alcohol on at least 1 day during their life decreased significantly during 1991–2017 (82%–60%).⁽¹³⁾ Likewise, the percentage of students who had at least one drink of alcohol on at least 1 day during the 30 days before the survey decreased significantly during 1991–2017 (51%–30%).⁽¹³⁾

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REFERENCES:

1. Stahre M, Roeber J, Kanny D, Brewer RD, Zhang X. Contribution of excessive alcohol consumption to deaths and years of potential life lost in the United States. *Preventing Chronic Disease* 2014;11:130293.
2. Sacks JJ, Gonzales KR, Bouchery EE, Tomedi LE, Brewer RD. 2010 national and state costs of excessive alcohol consumption. *American Journal of Preventive Medicine* 2015; 49(5):e73–e79.
3. U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. 2017. Report to Congress on the Prevention and Reduction of Underage Drinking. Available at: https://alcoholpolicy.niaaa.nih.gov/sites/default/files/imce/users/u1743/stop_act_rtc_2017.pdf. Accessed May 30, 2018.
4. Miller JW, Naimi TS, Brewer RD, Jones SE. Binge drinking and associated health risk behaviors among high school students. *Pediatrics* 2007;119:76–85.
5. 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.
6. 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.
7. Centers for Disease Control and Prevention. Binge Drinking Fact Sheet. Available at: <http://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm>. Accessed May 30, 2018.
8. Office of Juvenile Justice and Delinquency Prevention. Drinking in America: Myths, Realities, and Prevention Policy. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention, 2005. Available at: http://web.archive.org/web/20150910124238/http://www.udetc.org/documents/Drinking_in_America.pdf. Accessed May 30, 2018.
9. National Institute of Alcohol Abuse and Alcoholism. NIAAA council approves definition of binge drinking. NIAAA Newsletter 2004; No. 3, p. 3. Available at: http://pubs.niaaa.nih.gov/publications/Newsletter/winter2004/Newsletter_Number3.pdf. Accessed May 30, 2018.
10. DeJong W, Blanchette J. Case closed: research evidence on the positive public health impact of the age 21 minimum legal drinking age in the United States. *Journal of Studies on Alcohol and Drugs* 2014;75(Suppl 17):108–115.

Item Rationale for the 2019 Standard High School YRBS

11. 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.
 12. Centers for Disease Control and Prevention. Age 21 Minimum Legal Drinking Age Fact Sheet. Available at: <http://www.cdc.gov/alcohol/fact-sheets/minimum-legal-drinking-age.htm>. Accessed May 30, 2018.
 13. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).
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QUESTION(S):

45. During your life, how many times have you used marijuana?
46. How old were you when you tried marijuana for the first time?
47. During the past 30 days, how many times did you use marijuana?
48. During your life, how many times have you used synthetic marijuana?
49. During your life, how many times have you taken prescription pain medicine without a doctor's prescription or differently than how a doctor told you to use it?
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 your life, how many times have you used methamphetamines (also called speed, crystal meth, crank, ice, or meth)?
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 used a needle to inject any illegal drug into

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your body?

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

RATIONALE:

These questions measure lifetime and current use of marijuana (including lifetime use of synthetic marijuana) and ever use of cocaine, inhalants, heroin, methamphetamines, ecstasy, steroids, and injected drugs; use of prescription pain medicine without a doctor's prescription, or used in a manner differently than instructed by the doctor; and illegal drug activity on school property. Among youth, illicit drug use is associated with heavy alcohol and tobacco use,⁽¹⁾ violence and delinquency,⁽²⁻⁴⁾ and suicide.⁽⁵⁾ Synthetic marijuana use has been linked with adverse effects such as increased heart rate and blood pressure, drowsiness, nausea, vomiting, chest pain, hallucinations, agitation, and acute kidney injury.⁽⁶⁻⁸⁾ Data also show that high school students who use synthetic marijuana tend to engage in more risky behaviors related to sex, substance use, and injury/violence than students who use marijuana only.⁽⁹⁾ All school districts prohibit illegal drug possession or use by students on school property.⁽¹⁰⁾

Among high school students nationwide in 2017, 36% had used marijuana, 7% had used synthetic marijuana, 5% had used any form of cocaine, 2% had used heroin, 3% had used methamphetamines, 4% had used ecstasy, 3% had taken steroid pills or shots without a doctor's prescription one or more times during their life, and 14% had taken prescription pain medicine without a doctor's prescription or differently than how a doctor told them to use it one or more times during their life.⁽¹¹⁾ In 2017, 6% of high school students nationwide 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.⁽¹⁰⁾ Also, 20% of students had been offered, sold, or given an illegal drug on school property during the 12 months before the survey.⁽¹¹⁾ The percentage of high school students who had used marijuana one or more times during their life increased during 1991–1997 (31%–47%) and then decreased during 1997–2017 (47%–36%).⁽¹¹⁾ The percentage of high school students who had used cocaine one or more times during their life increased during 1991–2001 (6%–9%) and then decreased during 2001–2017 (9%–5%).⁽¹¹⁾ The percentage of high school students who had used heroin one or more times during their life did not change significantly during 1999–2011 (2%–3%) then decreased significantly during 2011–2017 (3%–2%).⁽¹¹⁾ The percentage of high school students who had used methamphetamines one or more times during their life decreased significantly during 1999–2017 (9%–3%).⁽¹⁰⁾ The percentage of high school students who had used ecstasy one or more times during their life decreased significantly from 2001–2017 (11%–4%).⁽¹¹⁾

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:

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- <https://www.samhsa.gov/data/sites/default/files/NSDUHNationalFindingsResults2010-web/2k10ResultsRev/NSDUHresultsRev2010.pdf>. Accessed June 18, 2018.
2. Substance Abuse and Mental Health Services Administration. Youth violence and illicit drug use. *The NSDUH Report* 2006;5:1–3. Available at: <http://files.eric.ed.gov/fulltext/ED495798.pdf>. Accessed June 18, 2018.
 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 18, 2018.
 4. Young AM, Glover N, Havens JR. Nonmedical use of prescription medications among adolescents in the United States: A systematic review. *Journal of Adolescent Health* 2012;51(1):6–17.
 5. 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://www.samhsa.gov/data/2k2/suicide/suicide.htm>. Accessed June 18, 2018.
 6. Forrester MB. Adolescent synthetic cannabinoid exposures reported to Texas poison centers. *Pediatric Emergency Care* 2012;28(10):985–989.
 7. Law R, Schier J, Martin C, Chang A, Wolkin A. Notes from the field: Increase in reported adverse health effects related to synthetic cannabinoid use – United States, January–May, 2015. *Morbidity and Mortality Weekly Report* 2015;64(22):618–619.
 8. Centers for Disease Control and Prevention. Acute kidney injury associated with synthetic cannabinoid use – multiple states, 2012. *Morbidity and Mortality Weekly Report* 2013;62(6):93–98.
 9. Clayton HB, Lowry R, Ashley C, Wolkin A, Grant AM. Health risk behaviors with synthetic cannabinoids versus marijuana. *Pediatrics* 2017; 139(4):e20162675
 10. 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.
 11. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).

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Concussion

QUESTION(S):

83. During the past 12 months, how many times did you have a concussion from playing a sport or being physically active?

RATIONALE:

This question measures the prevalence of self-reported concussions from playing sports or being physically active. Compared with older athletes, high school athletes have shown increased susceptibility to concussions and longer recovery times,⁽¹⁾ making concussions among youths playing a sport or being physically active an area of concern. Also of concern are the short-term

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and long-term sequelae of concussions, which can include cognitive, affective, and behavioral changes.⁽¹⁾ In 2013, the Institute of Medicine (now National Academy of Sciences) produced a report entitled *Sports Related Concussions in Youth: Improving the Science, Changing the Culture* that challenged CDC to improve the surveillance of sports-related concussions among youth.⁽¹⁾ The report identified a number of gaps in current surveillance efforts. Specifically, current surveillance systems only captured concussions experienced in organized, school-based sports at the high school or college level, or only captured sports-related concussions seen in emergency departments.⁽¹⁾ As a result, there were no comprehensive national incidence estimates of sports- and recreation-related concussions experienced by youth.

States may be particularly interested in more comprehensive estimates of sports- and recreation-related concussions because legislation related to sports concussions was passed in all 50 states within the past 5–7 years. This legislation, commonly referred to as “Return to Play” laws, typically have three core components: concussion education for athletes, parents, and coaches; restrictions on returning to play on the same day of a suspected concussion; and medical clearance prior to returning to play after a concussion. Being able to monitor the incidence of sports- and recreation-related concussions at the state level could allow states to monitor the effects of this legislation as well as the impact of prevention efforts.

Among high school students nationwide in 2017, 15% of students experienced a sports- or physical activity-related concussion during the 12 months before the survey.⁽²⁾

REFERENCES:

1. Institute of Medicine and National Research Council. *Sports-related Concussions in Youth: Improving the Science, Changing the Culture*. Washington, DC: The National Academies Press; 2014. Available at: <http://www.nationalacademies.org/hmd/Reports/2013/Sports-Related-Concussions-in-Youth-Improving-the-Science-Changing-the-Culture.aspx>. Accessed June 25, 2018.
2. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).

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Asthma

QUESTION(S):

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

RATIONALE:

This question measures the prevalence of asthma. Approximately 9.4 million (13%) U.S. children <18 years have been diagnosed with asthma at some time in their lives.⁽¹⁾ More than 80% of children, with or without asthma, have visited a health care provider(s); however, in 2011–2012, more children with asthma (32%) had three or more visits to a provider(s) than did children without asthma (24%).⁽²⁾ Poorly controlled asthma may impair a child’s ability to attend school, affect his or her academic performance, and cause parents to miss work in order to care for an ill child.⁽³⁾ However, the percent of children aged 5–17 years with asthma who reported one or more asthma-related missed school days has decreased significantly from 2003 (61.4%) to 2013 (49.0%).⁽³⁾ In 2013, children aged 5–17 years with asthma missed 13.8 million school days. Nearly 60% had at least one asthma absence day in the past year.⁽³⁾ Among high school students nationwide in 2017, 23% had ever been told by a doctor or nurse that they had asthma.⁽⁴⁾ The percentage of high school students who ever had asthma increased significantly during 2003–2009 (19%–22%) and then did not change during 2009–2017 (22%–23%).⁽⁴⁾

REFERENCES:

1. Centers for Disease Control and Prevention. 2016 Lifetime Asthma, Current Asthma, Asthma Attacks among those with Current Asthma. Available at: <https://www.cdc.gov/asthma/nhis/2016/data.htm>. Accessed June 7, 2018.
2. Centers for Disease Control and Prevention. Number of Visits to a Health Care Provider(s) among Children. Available at: https://www.cdc.gov/asthma/asthma_stats/visitsToProvider.htm. Accessed June 7, 2018.
3. Centers for Disease Control and Prevention Asthma-related Missed School Days among Children aged 5–17 Years. Available at: https://www.cdc.gov/asthma/asthma_stats/missing_days.htm. Accessed June 7, 2018
4. Kann L, McManus T, Harris WA, et al. Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries* 2018;67(No. SS-8).

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Grades

QUESTION(S):

89. During the past 12 months, how would you describe your grades in school?

RATIONALE:

This question measures academic grades in school. The academic success of America's youth is strongly linked with their health. Health-related factors such as hunger, physical and emotional abuse, and chronic illness can lead to poor school performance.⁽¹⁻⁴⁾ Health-risk behaviors such as early sexual initiation, violence, and physical inactivity are consistently linked to poor grades and test scores and lower educational attainment.⁽²⁻⁸⁾ In turn, academic success is an excellent indicator for the overall well-being of youth and a primary predictor and determinant of adult health outcomes.⁽⁹⁻¹¹⁾ Leading national education organizations recognize the close relationship between health and education, as well as the need to foster health and well-being within the educational environment for all students.⁽¹²⁻¹⁴⁾ This question provides data to monitor the important link between health-risk behaviors and academic achievement.

REFERENCES:

1. Dunkle MC, Nash MA. *Beyond the Health Room*. Washington, DC: Council of Chief State School Officers, Resource Center on Educational Equity; 1991. Available at: <http://files.eric.ed.gov/fulltext/ED340681.pdf>. Accessed June 25, 2018.
2. Michael SL, Merlo C, Basch C, Wentzel K, Wechsler H. Critical connections: Health and academics. *Journal of School Health* 2015;85(11):740–758.
3. Bradley BJ, Greene AC. Do health and education agencies in the United States share responsibility for academic achievement and health? A review of 25 years of evidence about the relationship of adolescents' academic achievement and health behaviors. *Journal of Adolescent Health* 2013;52(5):523–532.
4. Basch CE. Healthier students are better learners: a missing link in school reforms to close the achievement gap. *Journal of School Health* 2011;81(10):593–598.
5. Rasberry CN, Tiu GF, Kann L, et al. Health-related behaviors and academic achievement among high school students — United States, 2015. *Morbidity and Mortality Weekly Report* 2017;66:921–927.
6. Carlson SA, Fulton JE, Lee SM, et al. Physical education and academic achievement in elementary school: Data from the Early Childhood Longitudinal Study. *American Journal of Public Health* 2008;98(4):721–727.

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7. Spriggs AL, Halpern CT. Timing of sexual debut and initiation of postsecondary education by early adulthood. *Perspectives on Sexual and Reproductive Health* 2008;40(3):152–161.
8. Srabstein J, Piazza T. Public health, safety and educational risks associated with bullying behaviors in American adolescents. *International Journal of Adolescent Medicine and Health* 2008;20(2):223–233.
9. Harper S, Lynch J. Trends in socioeconomic inequalities in adult health behaviors among U.S. states, 1990–2004. *Public Health Reports* 2007;122(2):177–189.
10. Vernez G, Krop RA, Rydell CP. The public benefits of education. In: *Closing the Education Gap: Benefits and Costs*. Santa Monica, CA: RAND Corporation; 1999:13–32.
11. National Center for Health Statistics. *Health, United States, 2010: With Special Feature on Death and Dying*. Hyattsville, MD: U.S. Department of Health and Human Services; 2011. Available at: [http://www.cdc.gov/nchs/data/10.pdf](http://www.cdc.gov/nchs/data/hus/10.pdf). Accessed June 25, 2018.
12. Council of Chief State School Officers. Policy statement on school health; 2004. Available at: <https://files.eric.ed.gov/fulltext/ED486226.pdf>. Accessed June 25, 2018.
13. American Association of School Administrators. AASA position statements. Position statement 3: Getting children ready for success in school, July 2006; Position statement 18: Providing a safe and nurturing environment for students, July 2007. Available at: http://www.aasa.org/uploadedFiles/About/_files/AASAPositionStatements072408.pdf. Accessed June 25, 2018.
14. ASCD. *Making the Case for Educating the Whole Child*. Alexandria, VA: ASCD; 2011. Available at: <http://www.wholechildeducation.org/assets/content/mx-resources/WholeChild-MakingTheCase.pdf>. Accessed June 25, 2018.