Adolescent Health Screening and Counseling

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Serious health problems, risky behavior, and poor health habits persist among adolescents despite access to medical care. Most adolescents do not seek advice about preventing leading causes of morbidity and mortality in their age group, and physicians often do not find ways to provide it. Although helping adolescents prevent unintended pregnancy, sexually transmitted infections, unintentional injuries, depression, suicide, and other problems is a community-wide effort, primary care physicians are well situated to discuss risks and offer interventions. Evidence supports routinely screening for obesity and depression, offering testing for human immunodeficiency virus infection, and screening for other sexually transmitted infections in some adolescents. Evidence validating the effectiveness of physician counseling about unintended pregnancy, gang violence, and substance abuse is scant. However, physicians should use empathic, personal messages to communicate with adolescents about these issues until studies prove the benefits of more specific methods. Effective communication with adolescents requires seeing the patient alone, tailoring the discussion to the individual patient, and understanding the role of the parents and of confidentiality. (*Am Fam Physician.* 2012;86(12):1109-1116.

ILLUSTRATION BY TODD BUCK

Primary care physicians are well positioned to deliver important health advice to adolescents because 70 percent of adolescents have a preventive health visit every four years, on average.[1,2] Adolescents and their parents want physicians to raise sensitive issues during visits for both preventive care and acute illness,[3,4] and it is important for physicians to make the most of these visits. *Table 1* includes U.S. Preventive Services Task Force (USPSTF) recommendations for adolescent screening and counseling.[5-7]

The leading causes of death among adolescents in 2011 were motor vehicle crashes (26 percent); unintentional injuries (17 percent); homicide (16 percent); and suicide (13 percent). Also, 7.7 percent of high school students rarely or never wore seat belts, 87.5 percent rarely or never wore bicycle helmets, and 16.6 percent reported carrying a weapon within the previous 30 days.[8] In 2008 there were 42 unintended pregnancies per 1,000 females 15 to 19 years of age, and there are 9 million sexually transmitted infections (STIs) in persons 15 to 24 years of age each year.[9,10] Up to 20 percent of adolescents have a mental health condition, less than 20 percent of whom receive treatment.[11] Risk factors for chronic diseases, such as alcohol and tobacco use, sedentary habits, and poor diet, begin in adolescence. Obesity rates among adolescents are increasing, and only 29 percent of adolescents are physically active at least 60 minutes every day.[12]

During preventive visits with adolescents, physicians often fail to discuss risks or offer anticipatory guidance.[13,14] For example, adolescents receive advice about seat belts, bicycle helmets, and secondhand smoke during only one-third of visits to a physician.[15] Physician adherence to indicated clinical services is lowest in adolescent preventive care.[14] The reasons for this gap in implementation of care include limited evidence for behavior counseling with adolescents, lack of physician confidence in behavior counseling skills, lack of feedback to physicians about how often they provide recommended services, and physicians' perceived lack of interest from adolescents.[12]

Counseling

Influencing behavior change is difficult in patients of all ages, but adolescents pose

Table 1. USPSTF Recommendations for Screening and Counseling in Adolescents

Screening/counseling	*Recommendation*
Cancer	
Cervical	Start screening every three years at 21 years of age*
Skin	Insufficient evidence to recommend for or against screening in the general population
Testicular	Screening with physician examination or self-examination is not recommended
Cardiovascular	
Blood pressure	Start screening at 18 years or older at every visit
Lipid levels	Insufficient evidence to recommend for or against screening
General health	
Obesity	Screen with body mass index measurements annually, and offer behaviorally based interventions if indicated
Scoliosis	Routine screening is not recommended for asymptomatic adolescents because it results in moderate harms from wearing unnecessary braces and from unnecessary referrals, without benefits of decreased pain, disability, or clinically significant scoliosis
Injury prevention	
Motor vehicle crashes	Insufficient evidence to recommend for or against counseling about drinking and driving
Mental health	
Depression	Screen adolescents 12 to 18 years of age for major depression if adequate treatment and follow-up can be provided
Suicide risk	Insufficient evidence to recommend for or against screening in the general population
Sexually transmitted infections	
Chlamydia	Screen sexually active females
	Insufficient evidence to recommend for or against screening in males
Gonorrhea	Screen sexually active females
	Insufficient evidence to recommend for or against screening in males, even if high risk†
Herpes simplex virus infection	Routine serologic screening is not recommended
Human immunodeficiency virus infection	Screen those with risk factors or in areas with high prevalence annually‡
Substance abuse	
Alcohol, illicit drugs, tobacco	Insufficient evidence to recommend for or against routine screening or counseling

USPSTF = U.S. Preventive Services Task Force.

**—The American College of Obstetricians and Gynecologists also recommends screening starting at 21 years of age.[6]*

†—Risk factors include history of gonorrhea or other sexually transmitted infection, new or multiple sex partners, inconsistent condom use, sex work, and illicit drug use.

‡—The Centers for Disease Control and Prevention recommends offering testing to all adolescent and adult patients, regardless of risk.[7]

Information from references 5 through 7.

special challenges. First, adolescence (the stage of life from puberty to maturity, typically between 12 and 18 years of age) is a period of dramatic physical, cognitive, and emotional transformation. Second, children develop at different rates. In general, development begins with concrete thinking and little understanding of implications, transitions to a middle phase characterized by increasing insight and experimentation, and ends with a transition to adulthood with independent seeking of advice and a realistic understanding of long-term consequences. Taking time to assess the cognitive and emotional abilities of the patient, and the role their caregivers play in making decisions, is crucial but challenging. *Figure 1* outlines how physician and parental support can influence adolescent development.

There are specific data on which behaviors put adolescents at risk *(Table 2)*.[8] However, given the variability in the patient's development, family support, life experience, and personality, it is not completely clear how to best deliver risk counseling. The data on the effectiveness of different approaches are limited.

It is important to talk with adolescents privately. A survey of adolescents indicates that time alone with the physician improves sharing of personal concerns.[16] However, even when meeting a physician alone, many adolescents hold back, possibly because of ambiguity about confidentiality; a fear of being "lectured"; discomfort with talking about personal issues, especially sex[17]; and lack of clarity about the purpose of the physician visit.[16] Although physicians often provide assurances of confidentiality, many adolescents still have concerns that personal information will be available to clinic staff or shared with parents. A study shows that adolescents are more comfortable seeking advice and information from anonymous, online sources.[18]

Another study shows that adolescents are more satisfied with physicians who themselves raise sensitive topics, and are more likely to share personal information with these physicians.[3] Male adolescents have also reported that the relationship with their

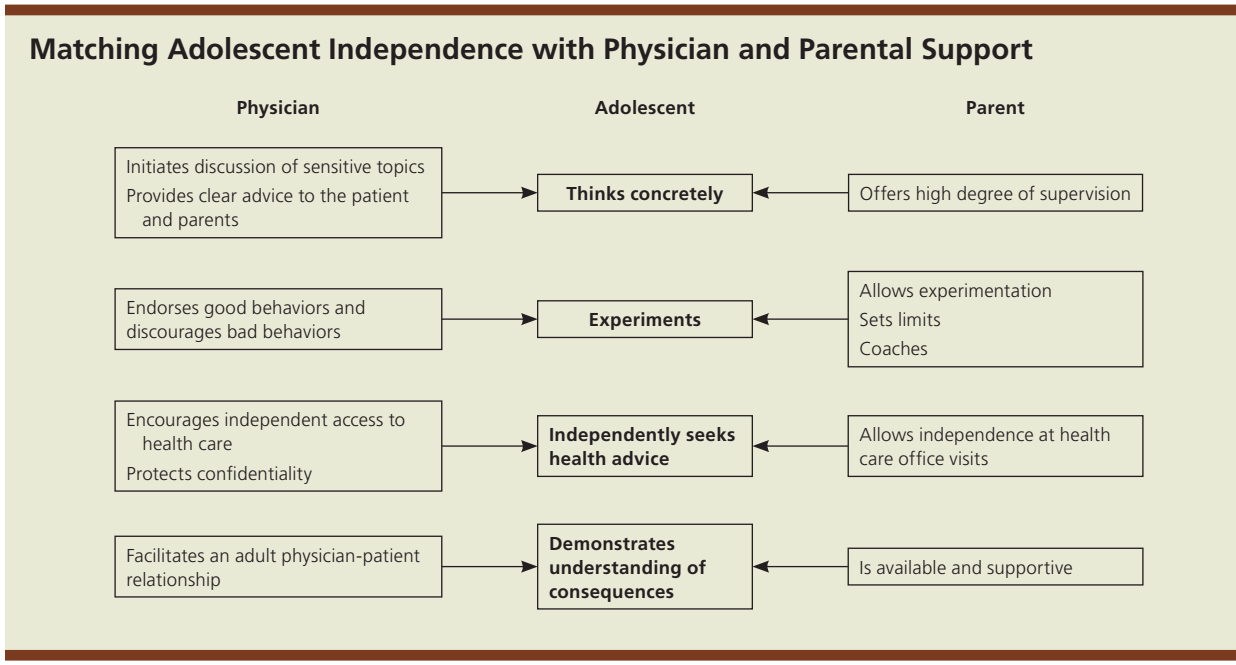

Figure 1. Physician and parental support in adolescent health.

physician, the physician's demeanor, and continuity of care are crucial to their willingness to share sensitive information.[16] In establishing a rapport with adolescents, it is helpful to keep the conversation personal. Instead of stating general facts, the physician should ask adolescents specifically what is happening in their lives (e.g., regarding substance use and sex).

Stating a clear position on confidentiality is important. The Society for Adolescent Medicine recommends protecting the confidentiality of adolescents' health care communications and records.[19] Most states allow minors to independently consent to contraceptive services and STI screening and treatment; however, abortion services often require parental notification or consent.[20] If information suggests abuse or possible harm to the patient or another person, the physician may be obligated to involve others. However, physicians may take into account the adolescent's age and level of maturity in deciding how to break confidentiality, if necessary, and how much to involve the patient in that process.

Reducing Risks

Although many national trends in youth risk behavior are improving *(Table 2)*, many high school–aged adolescents still engage in risky behaviors.[8] Evidence is lacking that medical interventions reduce these behaviors. Until studies provide more information, a team approach that includes behavior therapy referrals, school-based programs, or community groups may be most beneficial.

SEXUAL ACTIVITY

Education and offering contraceptives lower the rate of unintended pregnancy among adolescents. *Table 3* includes tips for talking with adolescents about sexual health. In females 15 to 17 years of age, pregnancy rates have decreased from 75 per 1,000 persons in the 1980s to 37 per 1,000 in 2008. Pregnancy rates remained higher for nonwhite adolescents (96 per 1,000 persons).[21] Education methods aimed at reducing sexual risk often involve discussion about contraceptive options, including emergency contraception; prevailing attitudes; risk of pregnancy and disease; and building skills to discuss sexual risk with partners. Evidence supports educational programs (typically lasting nine to 15 months) in school-, community-, or faith-based settings.[22] The USPSTF concludes that high-intensity counseling (three to nine hours, usually in a group setting) reduces STI rates in sexually active adolescents.[23]

Physician promotion of contraception is a component of some educational

Physicians should ask adolescents about tobacco use, tell them that it causes illness and death, and offer cessation assistance if needed.

programs for adolescents. When sexually active adolescents seek primary care, physicians should offer contraception and STI testing. Screening those at high risk of STIs (e.g., those with a history of STIs or a higher number of sex partners) reduces rates of pelvic inflammatory disease.[24] Sexually active adolescent females should be screened for chlamydia[25] and gonorrhea.[26] The Centers for Disease Control and Prevention recommends screening all adolescents for human immunodeficiency virus infection, whereas the USPSTF recommends screening only those who are high risk; testing should be routinely offered to adolescents.[7,27]

Table 2. Adolescent Risky Health Behaviors

Behavior	*1991* (%)*	*2011 (%)*
Poor diet/low physical activity		
Overweight	14.2	15.2
Physically active less than 60 minutes on any day in previous seven days	Not reported	13.8
Obese	10.6 (1999)	13.0
Sexual activity		
Ever had sexual intercourse	54	47.4
Did not use a condom during last sexual intercourse	54	40
Currently sexually active	37	33.7
Has had at least four sex partners	19	15.3
Did not use any method to prevent pregnancy before last sexual intercourse	16.5	12.9
Substance abuse		
Used marijuana in previous 30 days	31	23.1
Consumed five or more alcoholic drinks in a row in previous 30 days	Not reported	21.9
Smoked cigarettes on at least one day in previous 30 days	27	18.1
Ever used an inhalant (glue) to get high	20 (1995)	11.4
Ever used methamphetamines	9 (1999)	3.8
Used cocaine in previous 30 days	1.7	3.0
Suicide		
Seriously considered suicide	29	15.8
Attempted suicide	7.3	7.8
Unintentional injury		
Never or rarely wears a bicycle helmet	96	87.5
Texted or e-mailed while driving	Not reported	33
Ridden in a car in the past 30 days with a driver who was drinking alcohol	40	24.1
Carried a weapon in previous 30 days	26	16.6
Drove a car after drinking alcohol in previous 30 days	17	8.2
Never or rarely wears a seat belt	26	7.7
Carried a gun in previous 30 days	8	5.1

**—Unless otherwise specified.*

Information from reference 8.

VIOLENCE

The firearm-related death rate among males 15 to 19 years of age is 20 per 100,000 persons, and is higher among black male adolescents at 55 per 100,000 persons.[28] School-based programs focusing on violence prevention reduce aggressive behavior over the short-term; however, evidence is lacking about long-term benefits beyond 12 months or reduction in violent injuries.[29] There are no randomized studies or high-quality cohort studies of how physicians can influence adolescents to avoid violence. Strategies to deter adolescents from joining gangs is an especially important area for further research because gang involvement significantly increases violence in this age group.[30]

Physicians should ask adolescent patients about risk factors for violent behavior (e.g., history of abuse, low commitment to school, involvement in gangs, fear of assault)[31]; offer follow-up; and connect families with school-based programs, psychologists, and community groups that work with at-risk adolescents.

OBESITY

High-intensity weight-loss programs (more than 25 hours over six months) that include counseling, dietary advice, and physical activity reduce body mass index (BMI) by 1.9 to 3.3 kg per m^2 at 12 months in children and adolescents who are obese. This reduction in BMI can be maintained an additional 12 months after weight-loss counseling ends.[32] Physicians should calculate BMI in adolescent patients at yearly visits. The USPSTF recommends referral to a weight-loss program or obesity clinic for patients six to 18 years of age who are obese (BMI greater than the 95th percentile).[32]

Although exercise alone has not been shown to improve BMI or health outcomes, it improves self-esteem in adolescents.[33]

Table 3. Tips for Discussing Sexual Health with Adolescents

Be personal and respectful
"May I ask you some personal questions that will help me understand what kind of health advice you might need?"
"What are your plans for birth control?"
"Are you participating in sex education classes in your school or church?"
"Have you been sexually involved with anyone (guys, girls, or both) in the past six months?"
"What are your concerns or questions about sex?"
"What have you learned about HIV and STIs?"
Describe how physicians can help
"I'm here to educate you and give you information. I'm hoping you'll make good decisions. If you ever make a mistake, I hope you will trust me enough to help take care of you."
Be clear and direct
"HIV is an STI that can kill you."
Address confidentiality
"By law, I have to keep anything you tell me confidential unless I'm concerned about your safety or someone else's safety. Then, the law sometimes requires me to notify others. Do you have any questions about what is and isn't confidential?"
Set goals
"Make an appointment with me to discuss birth control before becoming sexually active."
"Ask potential new partners to get tested for STIs."

HIV = human immunodeficiency virus; STI = sexually transmitted infection.

Table 4. Tips for Discussing Alcohol Use with Adolescents

Be personal and respectful
"What's happening with alcohol use in your school and among your friends?"
Be clear and direct
"Alcohol impairs judgment and causes car crashes."
"Any amount of alcohol, even hours before driving, can cause a fatal crash."
"Alcohol impairs your judgment about safe sex. You could get a sexually transmitted infection or get pregnant."
Set goals
Suggest a contract between the adolescent and the parents that allows the adolescent to call for a ride without punishment to avoid getting into a car with a drunk driver.
Ask the patient to pledge that he or she won't drink and drive or get in a car with a driver who has been drinking.

Physicians should recommend daily exercise and limiting sedentary behavior, such as watching television, playing video games, and other "screen time," for overall health. Increasing self-esteem may also improve resistance to peer pressure and risky behavior.

ALCOHOL USE

Counseling reduces alcohol consumption and increases safe drinking behavior in high-risk adults,[34] although the effectiveness of primary care counseling in high-risk adolescents is less clear. Clinical trials show that compared with those receiving no alcohol counseling, young adults who were counseled had less intent to drink, drank less, and were less likely to consume more than five drinks in a row.[35] However, a study has also found increased drinking among adolescents after counseling.[36]

The CRAFFT (car, relax, alone, forget, family or friends, trouble) questionnaire, a brief screening tool for substance abuse, is 92 percent sensitive and 64 percent specific for high-risk alcohol behavior in adolescents. Although the questionnaire will identify substance abuse in most adolescents, a positive screening result requires confirmation through a more detailed discussion with the patient.[37] The CRAFFT questionnaire is available at http://www.ceasar-boston.org/CRAFFT/index.php. Individually tailored guidance and use of community programs are prudent until studies reveal how to best reduce high-risk drinking behavior. *Table 4* provides tips for talking with adolescents about alcohol use.

TOBACCO USE

Interventions to reduce tobacco use, such as cognitive behavior therapy, motivational interviewing, and medications, have not been well studied in adolescents.[38] However, randomized controlled trials have shown that brief physician advice and one to four motivational interviewing sessions increase quit rates in adults (number needed to treat = 7).[39,40] Although evidence regarding adolescents is insufficient to justify clinical guidelines, it is reasonable to ask adolescents about tobacco use, provide them with data that show that tobacco use causes illness and death, and offer smoking cessation assistance if needed. Because exposure to tobacco advertising increases experimentation and smoking rates among adolescents,[41] advocating against tobacco advertising aimed at this age group may be beneficial.

SORT: KEY RECOMMENDATIONS FOR PRACTICE

Clinical recommendation	*Evidence rating*	*References*
Sexually active adolescent females should be screened for chlamydia.	A	25
Physicians should recommend that adolescents participate in school-, faith-, or community-based sex education programs.	B	22
Sexually active adolescent females should be screened for gonorrhea.	B	26
Adolescents should be offered screening for human immunodeficiency virus infection.	B	7, 27
Adolescents should be screened for obesity, and offered behaviorally based counseling if indicated.	B	32
Adolescents should be screened for depression if follow-up treatment and monitoring are available.	B	43, 45
Physicians should address the following issues with adolescents: sexual activity, violence, and substance abuse.	C	19, 22, 23, 29, 30, 40

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, go to http://www.aafp.org/afpsort.xml.

Table 5. PHQ-9 for Adolescents: Screening Instrument for Depression

Over the past two weeks, how often have you been bothered by the following problems?	*Not at all*	*Several days*	*More than one-half of the days*	*Nearly every day*
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, irritable, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite, weight loss, or overeating	0	1	2	3
6. Feeling bad about yourself, that you are a failure, or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things such as schoolwork, reading, or watching television	0	1	2	3
8. Moving or speaking so slowly that others could have noticed; or the opposite, being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3
	Total:	____ +	____ +	____

NOTE: *A total score of ≥ 5 suggests mild major depression, ≥ 10 suggests moderate major depression, and ≥ 15 suggests severe major depression. Any positive response to question 9 warrants follow-up.*

PHQ = Patient Health Questionnaire.

Adapted from patient health questionnaire (PHQ) screeners. http://www.phqscreeners.com. Accessed September 6, 2012.

DEPRESSION

The USPSTF recommends screening patients 12 to 18 years of age for major depression, if adequate treatment and follow-up are available, using the nine-item Patient Health Questionnaire for Adolescents *(Table 5*[42]*)* or the seven-question Beck Depression Inventory-Primary Care Version.[43] These instruments have a 70 to 91 percent sensitivity for depression in adults[44]; however, no trials have examined whether screening improves outcomes in adolescents.

Treatment with selective serotonin reuptake inhibitors (SSRIs), psychotherapy, or both improves quality of life

and symptoms in adolescents with depression. Clinical trials have consistently shown that the SSRIs fluoxetine (Prozac) and citalopram (Celexa) are effective in improving symptoms in adolescents with major depression (number needed to treat = 5).[43] Psychotherapy, including cognitive behavior therapy or interpersonal therapy, also reduces depression symptoms in adolescents compared with control treatments. Combining SSRIs and psychotherapy provides the greatest reduction in depressive symptoms (number needed to treat = 3).[45] Because studies have shown a statistically significant increase in suicidal ideation in children and adolescents taking SSRIs, they should be used only if monitoring and support are available.[45]

Although not proven to reduce rates of completed suicide or unintentional death, physician advice to adults increases safe firearm storage. Therefore, discussions with parents should be part of depression counseling and routine preventive care of adolescents.[46]

Approach to the Patient

Because of a lack of data indicating what makes up an effective physician-adolescent conversation, as well as physician and adolescent discomfort with addressing sensitive topics, physicians are missing key opportunities to discuss critical health issues with these patients.

Physicians can establish a productive relationship with adolescents through the following steps: (1) assess the individual adolescent's ability to understand the consequences of risky behavior; (2) assess the role of the parent; (3) clarify expectations about confidentiality; (4) meet privately with the adolescent and raise sensitive topics; and (5) use the physician-patient relationship to personalize risk-reduction messages. Physicians should also actively seek to collaborate with community programs that address adolescent violence, sex, and overall health. Adolescents should be invited to independently access the physician's office, and should be provided with other resources appropriate for their individual needs.

Data Sources: We searched the Cochrane Database of Systematic Reviews, Essential Evidence Plus, U.S. Preventive Services Task Force, National Guideline Clearinghouse, and Ovid Medline using a combination of the terms: adolescent, teen, pregnancy prevention, sexually transmitted disease, violence, alcohol, mortality, injury, suicide, depression, anxiety, obesity, and tobacco. Search dates: August 15, 2011, and January 15, 2012.

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REFERENCES

1. Kang M, Cannon B, Remond L, Quine S. 'Is it normal to feel these questions ...?': a content analysis of the health concerns of adolescent girls writing to a magazine. *Fam Pract*. 2009;26(3):196-203.
2. Nordin JD, Solberg LI, Parker ED. Adolescent primary care visit patterns. *Ann Fam Med*. 2010;8(6):511-516.
3. Brown JD, Wissow LS. Discussion of sensitive health topics with youth during primary care visits: relationship to youth perceptions of care. *J Adolesc Health*. 2009 1;44(1):48-54.
4. Ford CA, Davenport AF, Meier A, McRee AL. Parents and health care professionals working together to improve adolescent health: the perspectives of parents. *J Adolesc Health*. 2009;44(2):191-194.
5. U.S. Preventive Services Task Force. http://www.uspreventiveservicestaskforce.org. Accessed September 6, 2012.
6. American College of Obstetricians and Gynecologists. ACOG committee opinion no. 463: cervical cancer in adolescents: screening, evaluation, and management. *Obstet Gynecol.* 2010;116(2 pt 1):469-472.
7. Branson BM, Handsfield HH, Lampe MA; Centers for Disease Control and Prevention. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Recomm Rep*. 2006;55(RR-14):1-17.
8. Eaton DK, Kann L, Kinchen S, et al.; Centers for Disease Control and Prevention. Youth risk behavior surveillance–United States, 2011. *MMWR Surveill Summ*. 2012;61(4):1-162.
9. Weinstock H, Berman S, Cates W Jr. Sexually transmitted diseases among American youth: incidence and prevalence estimates, 2000. *Perspect Sex Reprod Health*. 2004;36(1):6-10.
10. Martin JA, Hamilton BE, Sutton PD, Ventura SJ, Mathews TJ, Osterman MJ. Births: final data for 2008. *Natl Vital Stat Rep*. 2010;59(1):1,3-71.
11. Inman DD, van Bakergem KM, LaRosa AC, Garr DR. Evidence-based health promotion programs for schools and communities. *Am J Prev Med*. 2011;40(2):207-219.
12. 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):483-490.
13. Whitlock EP, Orleans CT, Pender N, Allan J. Evaluating primary care behavioral counseling interventions: an evidence-based approach. *Am J Prev Med*. 2002;22(4):267-284.
14. Mangione-Smith R, DeCristofaro AH, Setodji CM, et al. The quality of ambulatory care delivered to children in the United States. *N Engl J Med*. 2007;357(15):1515-1523.
15. Irwin CE Jr, Adams SH, Park MJ, Newacheck PW. Preventive care for adolescents: few get visits and fewer get services. *Pediatrics*. 2009;123(4):e565-e572.
16. Rubin SE, McKee MD, Campos G, O'Sullivan LF. Delivery of confidential care to adolescent males. *J Am Board Fam Med*. 2010;23(6):728-735.
17. Monasterio E, Hwang LY, Shafer M. Adolescent sexual health. *Curr Probl Pediatr Adolesc Health Care*. 2007;37(8):302-325.
18. Harvey K, Churchill D, Crawford P, et al. Health communication and adolescents: what do their emails tell us? *Fam Pract*. 2008;25(4):304-311.
19. English A, Park MJ, Shafer MA, Kreipe RE, D'Angelo LJ. Health care reform and adolescents—an agenda for the lifespan: a position paper of the Society for Adolescent Medicine. *J Adolesc Health*. 2009;45(3):310-315.
20. Guttmacher Institute. State policies in brief. An overview of minors' consent law. September 1, 2012. http://www.guttmacher.org/statecenter/spibs/spib_OMCL.pdf. Accessed Septermber 24, 2012.

21. Kost K, Henshaw S. U.S. teenage pregnancies, births and abortions, 2008: national trends by age, race and ethnicity. February 2012. http://www.guttmacher.org/pubs/USTPtrends08.pdf. Accessed September 24, 2012.
22. Oringanje C, Meremikwu MM, Eko H, Esu E, Meremikwu A, Ehiri JE. Interventions for preventing unintended pregnancies among adolescents. *Cochrane Database Syst Rev.* 2009;(4):CD005215.
23. U.S. Preventive Services Task Force. Behavioral counseling to prevent sexually transmitted infections: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2008;149(7):491-496.
24. Low N, Bender N, Nartey L, Shang A, Stephenson JM. Effectiveness of chlamydia screening: systematic review. *Int J Epidemiol.* 2009;38(2):435-448.
25. U.S. Preventive Services Task Force. Screening for chlamydial infection. June 2007. http://www.uspreventiveservicestaskforce.org/uspstf/uspschlm.htm. Accessed September 6, 2012.
26. U.S. Preventive Services Task Force. Screening for gonorrhea. May 2005. http://www.uspreventiveservicestaskforce.org/uspstf/uspsgono.htm. Accessed October 15, 2012.
27. U.S. Preventive Services Task Force. Screening for HIV. July 2005. http://www.uspreventiveservicestaskforce.org/uspstf/uspshivi.htm. Accessed September 6, 2012.
28. Child Trends Data Bank. Teen homicide, suicide, and firearm deaths. March 2012. http://www.childtrendsdatabank.org/?q=node/124. Accessed October 15, 2012.
29. Mytton JA, DiGuiseppi C, Gough DA, Taylor RS, Logan S. School-based violence prevention programs: systematic review of secondary prevention trials. *Arch Pediatr Adolesc Med.* 2002;156(8):752-762.
30. Fisher H, Gardner FE, Montgomery P. Cognitive-behavioural interventions for preventing youth gang involvement for children and young people (7-16). *Cochrane Database Syst Rev.* 2008;(2):CD007008.
31. Centers for Disease Control and Prevention. Youth violence: risk and protective factors. http://www.cdc.gov/ViolencePrevention/youthviolence/riskprotectivefactors.html. Accessed September 6, 2012.
32. Whitlock EP, O'Connor EA, Williams SB, Beil TL, Lutz KW. Effectiveness of weight management interventions in children: a targeted systematic review for the USPSTF. *Pediatrics.* 2010;125(2):e396-e418.
33. Ekeland E, Heian F, Hagen KB. Can exercise improve self esteem in children and young people? A systematic review of randomised controlled trials. *Br J Sports Med.* 2005;39(11):792-798.
34. Kaner EF, Beyer F, Dickinson HO, et al. Effectiveness of brief alcohol interventions in primary care populations. *Cochrane Database Syst Rev.* 2007;(2):CD004148.
35. Whitlock EP, Polen MR, Green CA, Orleans CT, Klein J. Behavioral counseling interventions in primary care to reduce risky/harmful alcohol use by adults: a summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2004;140(7):557-568.
36. Stevens MM, Olson AL, Gaffney CA, Tosteson TD, Mott LA, Starr P. A pediatric, practice-based, randomized trial of drinking and smoking prevention and bicycle helmet, gun, and seatbelt safety promotion. *Pediatrics.* 2002;109(3):490-497.
37. Knight JR, Sherritt L, Harris SK, Gates EC, Chang G. Validity of brief alcohol screening tests among adolescents: a comparison of the AUDIT, POSIT, CAGE, and CRAFFT. *Alcohol Clin Exp Res.* 2003;27(1):67-73.
38. Grimshaw G, Stanton A, Blackburn C, et al. Patterns of smoking, quit attempts and services for a cohort of 15- to 19-year-olds. *Child Care Health Dev.* 2003;29(6):457-464.
39. Soria R, Legido A, Escolano C, López Yeste A, Montoya J. A randomised controlled trial of motivational interviewing for smoking cessation. *Br J Gen Pract.* 2006;56(531):768-774.
40. Lai DT, Cahill K, Qin Y, Tang JL. Motivational interviewing for smoking cessation. *Cochrane Database Syst Rev.* 2010;(1):CD006936.
41. Lovato C, Watts A, Stead LF. Impact of tobacco advertising and promotion on increasing adolescent smoking behaviours. *Cochrane Database Syst Rev.* 2011;(10):CD003439.
42. Patient health questionnaire (PHQ) screeners. http://www.phqscreeners.com. Accessed September 6, 2012.
43. Screening and treatment for major depressive disorder in children and adolescents: U.S. Preventive Services Task Force recommendation statement [published correction appears in *Pediatrics.* 2009;123(6):1611]. *Pediatrics.* 2009;123(4):1223-1228.
44. U.S. Preventive Services Task Force. Screening for depression in adults: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2009;151(11):784-792.
45. Williams SB, O'Connor EA, Eder M, Whitlock EP. Screening for child and adolescent depression in primary care settings: a systematic evidence review for the US Preventive Services Task Force. *Pediatrics.* 2009;123(4):e716-e735.
46. Albright TL, Burge SK. Improving firearm storage habits: impact of brief office counseling by family physicians. *J Am Board Fam Pract.* 2003;16(1):40-46.