Current Goals for Adolescent Health Care

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Generally, the adolescent years (ie, between ages 11 to 21 years[1]) are a time of good health for most of this population in the United States. In turn, adolescent patients may not present to their health care providers' offices for routine health maintenance visits. In some cases, however, adolescents do not have access to appropriate or affordable health care. Adolescents with chronic diseases who are underinsured often do not have case managers or access to the medications and medical equipment required for them to be able to achieve their maximal potential in daily life or at school. In addition, recent surveys of school-based health clinics have shown that teenagers are frequently in need of timely access to mental health services.[2]

A number of health-related problems place adolescents at increased risk of morbidity and mortality. The leading causes of death in the adolescent age-group are unintentional injury, homicide, and suicide, all of which may be affected by anticipatory guidance and intervention from the health care system. Activities such as smoking, drug use, unprotected sex, and alcohol use often begin during the teenage years and can start an adolescent on an unhealthy route toward adulthood. Approximately $33.4 billion (ie, $855 per adolescent) are spent annually in the United States on adolescent morbidities.[3]

The 1997 Youth Risk Behavior Surveillance[4] examined 16,262 United States high school students in grades nine through 12. The study revealed that 49% of the adolescent boys and 48% of the adolescent girls had had sexual intercourse; only 62.5% of boys and 50.8% of girls reported using a condom at last intercourse.[4] More than 28% of the girls and 37.3% of the boys reported having five or more drinks in a row on one or more occasions in 30 days prior to the survey.[4] Among 12th graders, 19% of girls and 20% of boys were current cigarette smokers.[4] Fifteen percent of boys and 27% of girls considered suicide in the 12 months prior to the survey, and 4.5% of boys and 11.6% of girls attempted suicide. The 60% of girls and 23% of boys who reported that they were trying to lose weight are a concern because disordered eating patterns may arise.

The adolescent patient, entangled in a time of major physical, emotional, social, and cognitive growth and development, poses a unique challenge to the practicing clinician. Often providers feel overwhelmed by or uncomfortable with counseling teenage patients about sensitive areas such as sexuality or drug and alcohol use. A 1989 position paper of the American College of Physicians[5] stated that internists need better training and more involvement in the care of adolescents; 25% of internists surveyed felt that they had insufficient training in many areas of adolescent health care.[5]

This article reviews adolescent development and various guidelines for assessment of the adolescent patient. The annual preventive service visit, immunizations, preventive counseling, reimbursement issues, and resource information are also discussed.

ADOLESCENT DEVELOPMENT

Adolescence is remarkable considering the major cognitive and emotional changes that occur. In early adolescence (ages 11 to 14 years), a teenager may have increasing awareness of body changes, a need for privacy, and intense same-sex relationships. Wide mood

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Table 1. Summary of Guidelines of Adolescent Preventive Services Recommendations

Health care delivery
Annual preventive service visits
Physican-patient confidentiality
Developmental and sociocultural sensitivity

Health guidance
Parenting—early adolescence, middle adolescence
Adolescent development
Safety practices
Dietary habits
Sexual behavior
Substance use—smoking, alcohol and drug use
Fitness

Screening
Hypertension—annually
Hyperlipidemia—early adolescence if patient is at risk,* late adolescence
Eating disorders—annually
Obesity—annually
Tobacco use—annually
Drug and alcohol use—annually
Sexual behavior—annually
Sexually transmitted diseases
- Gonorrhea—annually if patient is sexually active
- Chlamydia—annually if patient is sexually active
- Genital warts—annually if patient is sexually active
- Syphilis—if patient is at high risk†
- HIV infection—if patient is at high risk†

Cervical cancer—age 18 years or older or annually if patient is sexually active
Depression/suicide risk—annually
Physical, sexual, or emotional abuse—annually
Learning problems—annually
Tuberculosis—if patient is at high risk‡

Immunizations—appropriate for age

*High risk if the patient has a family history of hyperlipidemia or cardiovascular disease, or if family history is unknown

†High risk if the patient has had more than one sexual partner in the past 6 months, if the patient has exchanged sexual intercourse for drugs, if the patient is male and has engaged in sexual intercourse with other males, if the patient has used intravenous drugs, if the patient has had other sexually transmitted diseases, if the patient has lived in an area that was endemic for the infection, or if the patient had a sexual partner who is at risk for the infection

‡High risk if the patient has been exposed to active tuberculosis, if the patient has lived in a homeless shelter or an area endemic for tuberculosis, if the patient has been incarcerated, or if the patient is currently working in a health care setting

Adapted with permission from Graef JW: *Manual of Pediatric Therapeutics*, 6th ed. Boston: Little, Brown, and Company, 1997.

swings and lack of impulse control are common. During middle adolescence (ages 15 to 17 years), teenagers show an increased struggle for independence, which is demonstrated by escalating tensions between the teenagers and their parents. Middle adolescence is also the peak of peer conformity, and an increase in the teenager's feelings of omnipotence is manifested by risk taking. Sexual demands and pressures increase during this phase of development. Also, it is obvious how unintentional injury secondary to alcohol intake in a newly licensed driver can be common in this age group. Late adolescence (ages 18 to 21 years) is the period when adolescents often start to accept parental values again. Peer-group conformity becomes less important, and older adolescents spend more time in intimate relationships. Clearly, younger adolescents' inability to think abstractly and to anticipate future needs separates them from their older peers. Late adolescents have usually developed the ability to think abstractly and are more able to set limits and compromise.[6]

The clinician must understand these various stages of adolescent development in order to connect with the adolescent patient in a meaningful way. For example, counseling a younger teenager about cigarette cessation must be accomplished in a concrete fashion (eg, focus on bad breath, teeth staining, or the cost of cigarettes) and not with the distant threat of future cancer.

GUIDELINES FOR ASSESSMENT OF THE ADOLESCENT PATIENT

In recent years, many individuals have voiced the concern that adolescents as a group are medically underserved and, in turn, adolescent health advocates have developed new standards of care for this age group.

American Medical Association Guidelines for Adolescent Preventive Services

In recognition of the major changes in adolescent morbidity and mortality, the American Medical Association (AMA) (Chicago, IL) published *Guidelines for Adolescent Preventive Services (GAPS)*[7] in 1993. These guidelines are based on the premise that today's adolescents face a number of health problems (eg, alcohol and drug abuse, unintended pregnancy, sexually transmitted disease [STD], and depression) that differ from health threats to teenagers of previous eras and that these current problems could be lessened by counseling, prevention, and anticipatory guidance. *GAPS* provides 24 recommendations organized into four separate categories (**Table 1**): three recommendations deal with the system of health care delivery, seven recommendations revolve around health guidance for ado-

lescents and their parents, 13 recommendations deal with specific areas of screening, and one recommendation calls for immunization. Of paramount importance, *GAPS* recommends annual clinical preventive service visits for all individuals age 11 to 21 years.[8–10]

Some practitioners find the *GAPS* recommendations difficult to follow in practice because of limited time and inadequate reimbursement. Outcomes studies are currently examining the cost-effectiveness of such strategies, and certain recommendations have already proven cost-effective. For example, screening for chlamydia in adolescent girls has been found to lower the risk of pelvic inflammatory disease and reduce costs.[11]

The *GAPS* guidelines provide an ideal framework for comprehensive, preventive adolescent care; implementation differs depending on the particular practice setting. Depending on the number of risks detected for a patient, providers may not be able to completely counsel the patient in a single visit. Providers must prioritize health issues depending on an adolescent's risk status and whether the risks are immediate or long term. In addition, all practitioners must continue to advocate on behalf of preventive services reimbursement.

Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents

In 1994, the Maternal and Child Health Bureau (Arlington, VA), Health Resources and Services Administration (Rockville, MD), Medicaid, and other agencies sponsored a review of health care guidelines for children and adolescents. The results of this review produced a handbook for primary care providers about children and adolescents entitled *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*.[1] *Bright Futures* provides a contextual approach, which includes family and community, to the longitudinal health supervision of children and adolescents. While emphasizing individualization of family needs (eg, culture, ethnicity, socioeconomic background), *Bright Futures* summarizes pertinent developmental themes and suggests concrete examples of questions that a provider might ask when taking a history from an adolescent patient. *Bright Futures* also recommends annual visits for adolescents. In addition, this handbook provides specific guidelines for screening and intervention.

Similar to the *GAPS* guidelines, *Bright Futures* emphasizes the need for longitudinal screening and counseling for teenagers. However, screening and counseling for all the areas identified in *Bright Futures* can be a major undertaking requiring great time and effort from primary care clinicians.

United States Preventive Services Task Force: Guide to Clinical Preventive Services

The United States Preventive Services Task Force (USPSTF) issued an original report entitled *Guide to Clinical Preventive Services* in 1989; a second edition of these recommendations was published in 1996.[12] The USPSTF evaluated preventive service interventions in terms of their effectiveness in improving outcomes. The USPSTF recommends 26 clinical interventions for adolescents and young adults up to age 24 years (**Table 2**).

ANNUAL PREVENTIVE SERVICE VISIT

As previously stated, annual clinical preventive service visits are recommended for all adolescents. When providing primary care to adolescent patients, the entire medical office staff must be knowledgeable concerning issues that may arise for this patient age-group. The staff should be aware of the unique physician-patient relationship and the limits of confidentiality. Adolescent patients must also be comfortable with their surroundings. Appropriate posters and literature can enhance dialogue between the clinician and patient, and increase the adolescent's comfort and confidence in the provider. While waiting for their appointments, adolescents can fill out screening questionnaires. Provided that the adolescent has the privacy to complete the questionnaire and understands the necessity of the information, the answers can help the physician focus the interview on the salient features of the patient's history. Examples of such questionnaires can be obtained through the AMA as well as other organizations.

The Patient Interview and History

The clinician may wish to spend the first few minutes of a younger adolescent patient's initial visit with the parents, which can easily be accomplished while a nurse is taking the patient's measurements and checking vital signs. This time offers a chance for the parents to mention any particular issues that they may not feel comfortable discussing in front of their child. After this discussion, the adolescent can join the interview. The joint interview is a perfect time for the clinician to discuss confidentiality. The parent and patient must both understand that any discussion between the physician and patient is confidential unless the patient is in danger or at risk of dying or harming someone else. The physician should initiate the conversation about

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confidentiality at the patient's first visit or when the patient is between age 11 and 12 years. The discussion must be broached in a nonconfrontational manner so that the parents understand the benefits of confidentiality to the health of their child. For example, the physician might address the adolescent and parents in the following manner:[8]

> Our conversation will be private and confidential. I will spend a few minutes talking to you privately about your health issues and do the same with your parents. In cases where we identify a very serious problem, we will talk about how to let others know about it.

Parents can be reminded that they are privy to all important medical information and encouraged to call with any concerns. The patient should also understand that suspicion of abuse or neglect must be reported. Laws of confidentiality vary from state to state, but discussions concerning STD treatment, pregnancy, and contraception are, in general, confidential. An initial open discussion of the issues pertaining to confidentiality should help to avoid difficult situations with parents in the future and allows the clinician to establish an honest and trusting rapport with the adolescent patient.

Depending on the age of the adolescent patient, medical history, family history, medicines, and allergies can be obtained with parents in the room (for younger patients) or without parents in the room (for older patients). Even for older adolescent patients, the family history can be obtained with the help of the parents at the end of the visit or through a jointly completed questionnaire. The adolescent should have some time alone with the practitioner; most parents and patients are comfortable with this arrangement. In the case of the patient whose parents refuse to leave the room, it often helps for the practitioner to leave the room with the parents to give the patient a chance to change into a gown privately. The parent can then be asked to wait outside while the practitioner speaks with the patient privately. At this time, the practitioner can take a brief social history and initiate counseling before and/or during the examination. If the patient wants a parent present for the physical examination, the practitioner can ask the confidential questions and then the parent can return for the examination.

In addition to the routine history, special attention must be given to the history of growth, development, and dietary intake; in girls, menstrual history should be taken as well. Social history should also be emphasized. Physicians must remember not to make the patient

Table 2. The United States Preventive Services Task Force Clinical Interventions

Screening
Height and weight
Blood pressure
Papanicolaou test (females)
Chlamydia screen (females < 20 yr)
Rubella serology or vaccination history (females > 12 yr)
Assess for problem drinking
Counseling
Injury prevention
Lap/shoulder belt use
Bicycle/motorcycle/all-terrain vehicle helmet use
Smoke detector
Safe storage/removal of firearms
Substance use
Avoidance of tobacco use
Avoidance of underage drinking and illicit drug use
Avoidance of alcohol/drug use while driving, swimming, boating, etc
Sexual behavior
Sexually transmitted disease prevention; abstinence; avoidance of high risk behavior; use of condoms/female barrier with spermicide
Unintended pregnancy: use of contraception
Diet and exercise
Limitation of fat and cholesterol; maintenance of caloric balance, emphasis on grains, fruits, vegetables
Adequate calcium intake (girls)
Regular physical activity
Dental health
Regular visits to dental care provider
Daily dental hygiene (ie, floss and brush teeth with fluoride toothpaste)
Immunizations
Tetanus-diphtheria boosters (11–16 yr)
Hepatitis B
Measles-mumps-rubella (11–12 yr)
Varicella (11–12 yr)
Rubella (females > 12 yr)
Chemoprophylaxis
Multivitamin with folic acid (female adolescents planning/capable of pregnancy)

Adapted from United States Preventive Services Task Force: *Guide to Clinical Preventive Services*, 2nd ed. Baltimore: Williams & Wilkins, 1996.

Table 3. Recommended Questions for Elicitation of Sexual History in an Adolescent Patient

1) Do you date? One person or a lot of people? Are you with a steady partner? Are you happy with dating? Are you happy in this relationship?
2) Have you begun having sexual intercourse? If so, do you have sex with men, women, or both?
3) Do you have any worries or questions about sex or sexual orientation?
4) Have you ever been pregnant (or gotten someone pregnant)?
5) Would you like to have a baby? What do you think it means to have a baby?
6) Have you ever had any sexually transmitted diseases such as gonorrhea, chlamydia, herpes, syphilis, or genital warts?
7) Do you use birth control? What kind(s)?
8) Do you use condoms? What percentage of the time?
9) Has anyone every touched you in a way you didn't like? Has anyone ever forced you to have sex?
10) Have you thought about what you might do if you ever felt pressure to have sex?

Adapted with permission from Green M, ed: *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*. Arlington, VA: National Center for Education In Maternal and Child Health, 1994.

feel singled out and should precede questions with the statement "I ask all my patients these questions" to put the patient at ease. One method that has been helpful to many primary care providers when eliciting a history is the HEADSS mnemonic. The HEADSS survey proceeds from less sensitive to more sensitive subject areas, which may increase the comfort level of an adolescent patient during the interview.

- **H** refers to the patient's **home** life, including where and with whom the patient lives, familial relationships within the home, and exposures in the home (eg, smoke, pets, violence).
- **E** stands for **education** and includes questions relating to scholastic achievement, grade level, and learning disabilities. Poor school performance and functioning may be related to other high risk behaviors.
- **A** is for **activities** and includes the patient's extracurricular activities, athletic participation, exercise, and friendships.
- **D** stands for **drugs**, including tobacco, alcohol, marijuana, cocaine, inhalants, anabolic steroids, and other illegal substances. This topic must be broached in a neutral fashion with the understanding that tobacco and alcohol are the most commonly used substances. Clinicians can open the discussion by asking about the experiences of the patient's friends or peer groups; this tactic may help the adolescent feel more comfortable discussing his or her own habits.
- **S** refers to **sexuality**, which includes sexual experiences, gender of partners, contraceptive use and experiences, history of undesired sexual advances or abuse, and history of STDs or pregnancy. Questions about sexual history can be difficult for both patients and providers. Examples of good ways to approach the subject are detailed in *Bright Futures* (**Table 3**).[1]
- **S**—the second S is for **suicide**. A significant number of adolescents who have attempted suicide have visited a health care provider within 1 month prior to their attempt.[13,14] All adolescents should be asked about symptoms of depression. Common symptoms in adolescents, which may differ from symptoms seen in adults, include change in sleeping patterns, weight loss or weight gain, feelings of hopelessness, irritability, and acting out. Some clinicians have found that a good screening question is to ask adolescent patients to remember the last time that they had fun. If the patient cannot remember or relates an episode months prior to the presentation, the patient may be depressed. Adolescents must be questioned about previous suicide attempts, gun availability in the home, and family history of alcoholism, depression, or suicide.

Physical Examination

The physical examination completed during the adolescent preventive health visit should be similar to an adult physical examination but with special emphasis on pubertal development and growth. Height and weight measurements are of particular interest as the developing adolescent grows from a prepubertal to a skeletally mature size; measurements should be plotted on a growth chart.

Assessment of eating disorders and body mass index. Eating disorders are commonly seen in adolescent patients. An inappropriate drop or increase in weight with regard to the patient's height is often the first sign of an eating disorder. Obesity also develops during the adolescent years. Recent research has shown that overweight adolescents often become obese adults.[15] *Bright Futures* and *GAPS* recommend calculating the body mass index (BMI), or kilograms/meters^2, for all adolescent patients annually. Adolescents should

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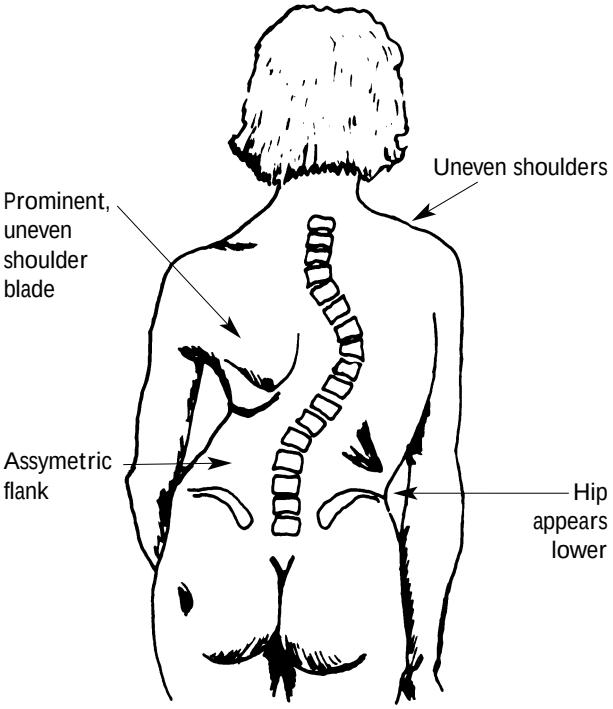

Figure 1. Illustration of the physical findings associated with severe scoliosis. Illustration courtesy of Dr. John Emans (Children's Hospital, Boston, MA).

Figure 2. Photograph of a clinician examining the adolescent spine for asymmetry. Photograph courtesy of Dr. John Emans (Children's Hospital, Boston, MA).

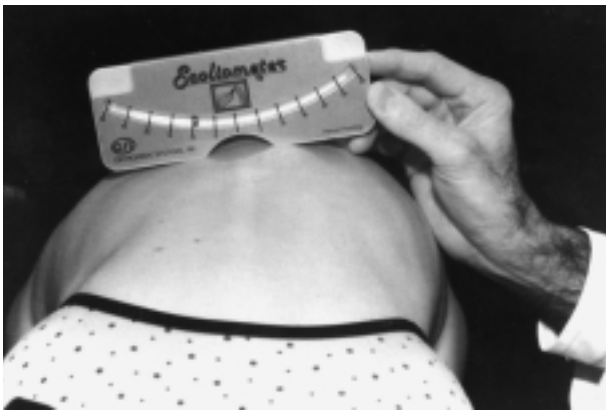

Figure 3. Photograph of an adolescent patient bending forward with a scoliosometer (inclinometer) reading of 9 degrees, indicating the need for radiography of the spine in the growing adolescent. Photograph courtesy of Dr. John Emans (Children's Hospital, Boston, MA).

be referred for nutritional counseling if they have a BMI that is 95% or greater for age and gender. Patients with a BMI between 85% and 94% in addition to a family history of obesity, premature heart disease, hypertension, diabetes, or an increase in BMI of 2 in the past year should also be referred.

Blood pressure examination. All adolescent patients should have an annual blood pressure examination to screen for hypertension in accordance with the guidelines of the National Heart, Lung, and Blood Institute (Bethesda, MD).

Thyroid disorders. The thyroid should also be examined in the adolescent patient. The thyroid gland doubles in size during the adolescent years, and asymptomatic goiter may be detected. Hypothyroidism and hyperthyroidism can manifest as menstrual irregularity, growth disturbance, change in emotional status, or poor school performance.

Scoliosis. Patients who are still growing should be assessed for scoliosis, a common disorder in the young adolescent. The health care provider should initially inspect the adolescent's back and hips for asymmetry (**Figure 1**). Symmetry of the scapulae and levelness of the back must also be examined (**Figure 2**). A scoliosometer can be a useful device to measure the specific amount of asymmetry (**Figure 3**). In a growing adolescent, a scoliosometer reading greater than 5 degrees should be followed with a standing posterior-anterior spine film.

Genital examination and Tanner stages. A complete genital examination is essential for the adolescent patient. Premenarchal girls should be examined for degree of estrogenization, abnormalities (eg, an imperforate hymen), clitoromegaly, and vulvovaginitis. Adolescent boys should be checked for hernia, varicocele, and testicular volume; patients should also be taught how to perform a testicular self-examination. Breast examinations should be completed on all adolescents. In adolescent girls, the clinician should evaluate stage of development and check for masses. The clinician may take this opportunity to educate teenage girls about breast self-examination. Adolescent boys are examined for gynecomastia. If gynecomastia is

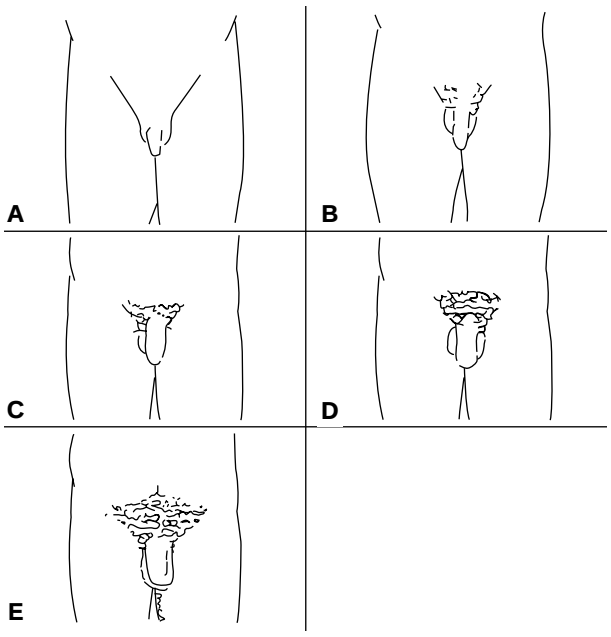

Figure 4. Tanner stages of pubertal development: male genital and pubic hair development. Ratings for pubic hair and for genital development can differ in a typical boy at any given time because pubic hair and genitalia do not necessarily develop at the same rate.

A) Tanner stage 1: prepubertal; no pubic hair; genitalia unchanged from early childhood

B) Tanner stage 2: light, downy hair develops laterally and later becomes dark; penis and testes may be slightly larger; scrotum becomes more textured

C) Tanner stage 3: pubic hair has extended across the pubis; testes and scrotum are further enlarged; penis is larger, especially in length

D) Tanner stage 4: more abundant pubic hair with curling; genitalia resemble those of an adult; glans has become larger and broader; scrotum is darker

E) Tanner stage 5: adult quantity and pattern of pubic hair, with hair present along the inner borders of the thighs; the testes and scrotum are adult in their size

Adapted from Neinstein LS: *Adolescent Health Care: A Practical Guide*, 3rd ed. Baltimore: Williams and Wilkins, 1996:19–21.

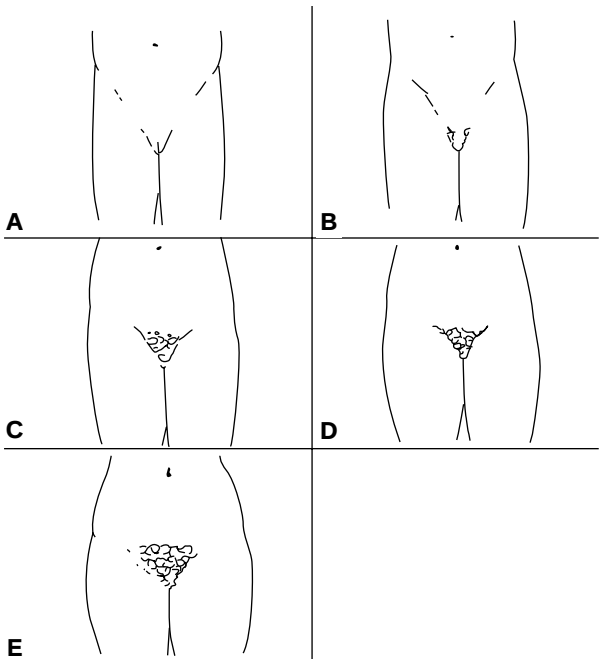

Figure 5. Tanner stages of pubertal development: female pubic hair development.

A) Tanner stage 1: prepubertal; no hair

B) Tanner stage 2: straight hair extends along the labia and, between Tanner stages 2 and 3, begins on the pubis

C) Tanner stage 3: pubic hair has increased in quantity, is darker, and is present in the typical female triangle but in smaller quantity

D) Tanner stage 4: pubic hair is more dense, curled, and adult in distribution but less abundant

E) Tanner stage 5: abundant, adult-type pattern; hair may extend onto the medial aspect of the thighs

Adapted from Neinstein LS: *Adolescent Health Care: A Practical Guide*, 3rd ed. Baltimore: Williams and Wilkins, 1996:19–21.

present, the patient must be reassured of the commonality of this developmental variant.

Providers should refer to the Tanner stages (Sexual Maturity Rating) of younger adolescents to confirm proper continued development. The Tanner stages are divided into genital development (in males), breast development (in females), and pubic hair stages (both males and females). Attainment of axillary hair is separate from Tanner staging. The various Tanner stages are described in **Figures 4–6**. Average adolescent girls begin breast budding between ages 10 and 11 years and progress one Tanner stage every 6 to 12 months. Adolescent boys experience initial testicular enlargement between ages 11 and 12 years on average. The peak growth spurt in girls occurs prior to menarche (Tanner stage 2 to 3); boys experience the peak growth spurt later (Tanner stage 4) when compared with girls.

Delayed development in the adolescent patient may be caused by various endocrine abnormalities and systemic illnesses. In addition, different racial and ethnic groups demonstrate significant differences in onset of puberty. For example, black and Hispanic girls commonly begin puberty earlier than white girls.

Pelvic examination. A pelvic examination is recommended for all sexually active girls in order to test for STDs and to complete an annual Papanicolaou (PAP) smear. Adolescent patients with gynecologic complaints (ie, dysmenorrhea, amenorrhea, irregular menses) or unexplained pelvic pain should undergo pelvic examination. Pelvic examinations are also recommended for all patients who are age 18 years or older.

The first pelvic examination can be the source of great anxiety and apprehension. An adolescent may be more comfortable if a parent, friend, or nurse is in the room with them during the pelvic examination. The three-part examination—external inspection; speculum examination for STD testing, PAP smear, and wet preparations (if indicated); and internal bimanual examination to assess uterine and ovarian size—should be clearly explained to the patient. The examiner should proceed slowly, frequently reassuring the patient about the process. In the patient who has never been sexually active, a smaller Huffman speculum can usually be inserted. If not, the patient can be encouraged to use tampons, if acceptable to the patient, and may return to have the examination.[16] Primary care providers must pay attention to cultural issues when recommending pelvic examinations to non–sexually active young patients; in certain cultures, pelvic examinations are forbidden in the virginal patient.

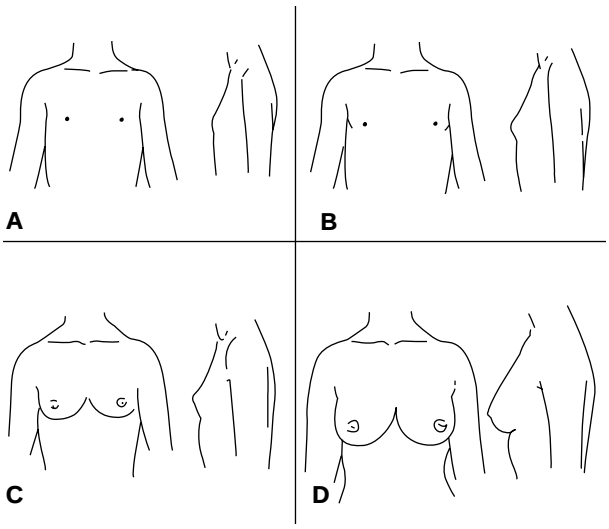

Figure 6. Tanner stages of pubertal development: female breast development. Tanner stage 1 (not shown): prepubertal; elevations of papilla only.
A) Tanner stage 2: breast buds appear; areola is slightly widened and projects as a small mound
B) Tanner stage 3: enlargement of the entire breast with no protrusion of the papilla or of the nipple
C) Tanner stage 4: enlargement of the breast and projection of the areola and papilla as a secondary mound
D) Tanner stage 5: adult configuration of the breast with protrusion of the nipple; areola no longer projects separately from the remainder of the breast
Adapted from Neinstein LS: *Adolescent Health Care: A Practical Guide*, 3rd ed. Baltimore: Williams and Wilkins, 1996:19–21.

Laboratory Tests

Recent guidelines have stated that adolescent girls should receive hemoglobin and/or hematocrit screening 1 year after menarche and follow-up screening every 5 to 10 years.[17] Adolescent girls with risk factors for iron deficiency (ie, moderate to heavy menses or other blood loss, low iron intake or other nutritional deficiency, vegetarian diet, athletic participation, or previous diagnosis of iron deficiency anemia) should be screened annually.[17] These authors also recommend a hemoglobin and/or hematocrit screening for teenage boys once during the postpubertal years, especially for patients with a history of iron deficiency anemia, special health care needs, or low iron intake.

Recommendations for cholesterol and high-density lipoprotein (HDL) cholesterol screening in adolescents and adults are varied. Because patients younger than age 40 years tend not to present for preventive screening, and family histories are often unreliable or unobtainable, these authors favor the completion of a cholesterol and HDL-cholesterol screen once during adolescence. The Expert Panel on Blood Cholesterol Levels in Children and Adolescents[18] has suggested selective screening with a fasting lipid panel for children of patients with a cholesterol level greater than 240 mg/dL and for children and grandchildren of patients with coronary artery disease or vascular disease presenting prior to age 55 years. A patient with an unknown family history or multiple risk factors for cardiac disease should be screened with a nonfasting cholesterol and HDL cholesterol. Most guidelines also call for initiating routine adult cholesterol screening at age 19 years.

In sexually active males, a first-catch urine (12 mL) can be prescreened with the leukocyte esterase (LE) dipstick; patients found to have +1 or +2 positive on the LE dipstick should be further tested for *Neisseria gonorrhoeae* and *Chlamydia trachomatis*. As previously mentioned, sexually active girls should receive an annual PAP smear; these patients should also be screened for urine or endocervical *C. trachomatis* as well

Table 4. Guidelines for Adolescent Preventive Services Mnemonic for Institution of Counseling Intervention

Gather information (via interviews or questionnaire)
Assess further (ie, determine the level of involvement or risk)
Problem identification (What is the teenager's perception of risk? What is the teenager willing to do?)
Solutions, self-efficacy (Can the teenager make a change?)

Adapted from Levenberg PB, Elster AB, eds: *AMA Guidelines for Adolescent Preventive Services (GAPS): Clinical Evaluation and Management Handbook*. Chicago: American Medical Association, Department of Adolescent Health, 1995.

as *N. gonorrhoeae* once per year or more often, depending on the sexual practices of the patient or patient history of previous STD. Universal urine screening with newer chlamydia tests (eg, ligase chain reaction) may become practical as costs decrease. Urine testing for *C. trachomatis* and *N. gonorrhoeae* should soon be more widely available. A purified protein derivative should be administered to adolescent patients who have had exposure to tuberculosis, have immigrated from an area of high prevalence for tuberculosis, or have a history of incarceration or living or working in a homeless shelter or a health care setting. Syphilis testing should be performed on high-risk individuals and adolescent patients with another STD. HIV counseling and testing should be offered to at-risk youth.

IMMUNIZATIONS

According to current immunization guidelines, all adolescents should receive a second measles-mumps-rubella combination vaccine at entry to middle school if not done prior to entrance to kindergarten. A diphtheria tetanus update is given at age 11 to 12 years if the patient has not received a tetanus update immunization within the previous 5 years. A three-dose series of the hepatitis B vaccine is currently recommended for all boys and girls between ages 11 and 12 years who have not been immunized. All other adolescents not previously immunized should be offered the hepatitis B vaccine. Varicella (chicken pox) vaccine should be offered to any adolescent patient who has not been infected. Because of the high rate of seropositive adolescents who do not report ever having chicken pox, serology screening prior to immunization is a reasonable approach before vaccination.[19,20]

PREVENTIVE COUNSELING

Adolescent patients must be advised concerning the issues or habits that could cause them harm. Counseling issues should be individualized and addressed at annual visits. *GAPS*, *Bright Futures*, and the USPSTF *Guide to Clinical Preventive Services* all offer recommendations for preventive counseling.

All patients should be educated about the risks of tobacco use as well as drug and alcohol use. Adolescents who are identified as having significant problems with substance abuse should be referred for intervention. Adolescent patients should be educated about the risks associated with sexual activity and be advised about all methods of contraception including abstinence. HIV and STD education must also be included; in addition, issues surrounding the confusion and stress sometimes associated with sexual orientation and identity must be addressed. Counseling should be handled in a neutral, culturally sensitive manner.

Major safety issues that should be covered during counseling include the use of safety belts in automobiles, use of bike helmets, risk of household weapons, risks of drinking and driving, and violence prevention. Healthy eating habits should be reviewed and the need for increased calcium intake, especially for adolescent girls, should be stressed. The *Guide to Clinical Preventive Services* recommends that all young women of childbearing age be started on multivitamins containing folic acid to reduce risk of neural tube defects during unintended pregnancies. Counseling adolescents about future goals and educational endeavors should be included as well.

As part of the preventive service visits, anticipatory guidance should be provided to parents. Parental education concerning normal adolescent development, the adolescent's need for privacy, and effective parenting skills can help alleviate major parent-child conflicts.

The suggested counseling is time consuming and thus requires creative use of extra minutes in the waiting room, pamphlets and brochures, and paraprofessionals. Incorporating counseling and prevention guidance into the interview when questioning the patient about sensitive issues can save time. This method follows a logical pattern and makes intervention more relevant. The *GAPS* program proposes the GAPS mnemonic (**Table 4**) to institute counseling intervention during the interview.

Providers may feel uncertain about whether a brief intervention can help patient behavior. Prochaska and DiClemente[21] have described a transtheoretical model of how substance abusers change addictive behaviors with or without formal treatment. This model (**Figure 7**) is important when considering the efficacy of any counseling intervention to change behaviors in adolescents.

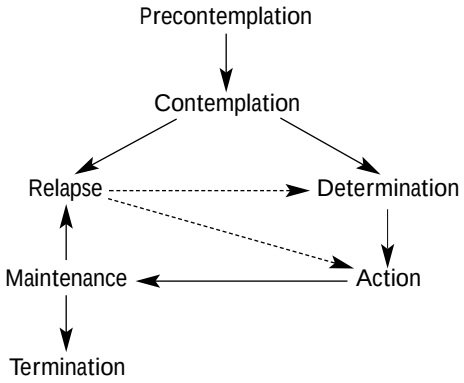

Figure 7. Stages of change. Adapted from Prochaska JO, DiClemente CC: Transtheoretical therapy: toward a more integrative model of change. *Psychotherapy: Theory, Research, and Practice*. 1982;19:276.

The goal in counseling any patient is to move her or him from one stage to the next stage over a series of office visits. Several authors have also described motivational enhancement techniques to improve the chances of changing a behavior; these techniques include the following: 1) listening reflectively, 2) asking open-ended questions, 3) eliciting self-motivation statements, and 4) summarizing. In addition, DARES is a mnemonic designed to help develop effective dialogue.[22] **D** stands for developing a discrepancy; **A** is avoiding argumentation; **R** is for rolling with resistance; **E** stands for empathizing; and **S** is for supporting self-efficacy (optimism).

REIMBURSEMENT

The adolescent preventive service visit presents a number of questions concerning clinician reimbursement. Full institution of preventive service visits would seemingly result in an enormous cost to the health care system. However, this cost could be significantly offset by the tremendous savings from the decreased morbidity that may result from minimal change in an adolescent's behavior. Early screening and intervention for STDs, hypertension, smoking cessation, and injury prevention could result in marked savings over time.

Billing presents another potential source of conflict for health care providers who perform adolescent preventive service examinations. The health care provider must seek creative billing solutions with third-party payers to ensure confidentiality concerning sensitive issues such as PAP smears or STD testing. Clinicians need to be adequately reimbursed for the amount of time that they invest while counseling adolescent patients if quality preventive services are to be assured.

WORLD WIDE WEB SITES PROVIDING ADOLESCENT HEALTH RESOURCES

http://www.teenwire.com/index.asp
http://www.ncpc.org/teens.htm
http://www.hhs.gov/kids
http://www.glsen.org
http://www.talkwithkids.org
http://www.healthfinder.org/justforyou/teens.htm

RESOURCES

Providers of health maintenance for adolescents must have access to a number of resources in order to refer their patients for services. Identification of skilled mental health providers in the community who are comfortable working with this age-group is important. Local hospitals and mental health clinics can serve as resources as well as the state departments of human services and public health. Organizations such as Alcoholics Anonymous and Narcotics Anonymous as well as Alateen and Al-Anon can be helpful for adolescents with issues involving drug and alcohol use. Patients with eating disorders should be sent to an experienced nutritionist. Local organizations (eg, Massachusetts Eating Disorders Association [Newton, MA]) are extremely helpful in locating resources for adolescents. Providers should also be fully versed in their state laws pertaining to pregnancy in minors as well as an adolescent's right to obtain a termination of pregnancy. Local Planned Parenthood agencies can be resources for such information. World Wide Web sites providing adolescent health resources and information for both adolescents and parents are listed in the **Sidebar**.

SUMMARY

Providing primary care for the adolescent patient can be an extremely rewarding, yet certainly challenging, endeavor. *GAPS* and *Bright Futures* have made efforts to educate clinicians about appropriate screening and anticipatory guidance for adolescents. The goal is to improve outcomes for adolescents and help them establish good health practices as they move into their adult years. **HP**

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