

# Clinical Guidelines And Primary Care

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## Guidelines For Adolescent Preventive Services: A Critical Review

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The American Medical Association (AMA) Department of Adolescent Health, with the assistance of a scientific advisory board, developed and published *Guidelines for Adolescent Preventive Services*. This report consists of 24 recommendations regarding adolescent preventive services that focus on four general areas: (1) health care delivery, (2) health guidance, (3) screening, and (4) immunizations. A book describing the process and recommendations in detail was published this year.<sup>1</sup> It is the first comprehensive set of recommendations for adolescent preventive strategies and defines the scope and importance of adolescent health issues very well. The recommendations stress the prevention and treatment of risk behaviors responsible for most adolescent morbidity and mortality, as well as the traditional medical issues affecting this population. Unfortunately, the cornerstone of guideline implementation is an annual individual physician visit with each adolescent. As practitioners, basing implementation on an annual individual physician visit seems unrealistic with respect to time constraints, cost, and adolescent compliance with the recommendation. Most importantly, support for many of the recommendations depends on outreach and community-based interventions with no evidence that the individual physician can effect the desired changes. Implementation of many of the individual recommendations is left to vague "should" statements. References are supplied, but the strength of the evidence supporting the recommendations is not provided. The careful reader is left with an excellent synopsis of the scope of adolescent problems and the ur-

gent need to address them but little evidence of the efficacy of the proposed physician-based intervention.

### Developing the Guidelines

The recommendations were developed by an 11-person scientific advisory board, convened by the AMA Department of Adolescent Health, that consisted of experts from several disciplines: pediatric and adolescent medicine, child and adolescent psychiatry, health and developmental psychology, health education, and preventive medicine. A representative of the health insurance industry and experts in adolescent medicine screening were also consulted. Practitioner representatives from the American Academy of Pediatrics, the American Academy of Family Physicians, the American College of Obstetrics and Gynecology, the American College of Physicians, the American Psychiatric Association, the Society for Adolescent Medicine, and the American Academy of Child and Adolescent Psychiatry were added to the advisory board at a later stage. The role these representatives played in the process is not detailed. The advisory board met only four times, once in 1990, twice in 1991, and once in 1992.

The evidence used to develop the recommendations came from articles solicited from experts in the specific content area, a medical and social science computer literature search from 1980 to 1991, and key references published before 1980 cited in the above articles. The decision to create a guideline recommendation was based on the burden of suffering, the feasibility of diagnosing the condition, and the efficacy of preventive interventions. The recommendations were developed using a hierarchy of strength of evidence: level 1 data were drawn from experimental trials, level 2 data were drawn from cohort or epidemiological studies, and level 3 recommendations

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came from a major organization or panel of experts. The staff of the AMA Department of Adolescent Health analyzed the research on this basis and abstracted findings into charts describing setting, sample size, age of subjects, and levels of evidence. Advisory board members reviewed abstracted data to develop general, unofficial consensus guidelines. Guidelines that already existed, such as those for hyperlipidemia, were simply incorporated into the report without further review. The 32 organizations that participate in the AMA National Coalition on Adolescent Health (not specifically named) were asked for their input, as were a variety of organizations and government groups. How this input was incorporated is not described. It appears that the AMA professional staff developed the final guidelines using all the input gathered in the above processes.

The final guidelines are reproduced in their entirety in the appendix. The report was distributed to practitioners as a flyer in the *AMA News* in late 1992 and was followed by the publication of *AMA Guidelines for Adolescent Preventive Services (GAPS). Recommendations and Rationale* by Williams & Wilkins in 1994.<sup>1</sup>

### A Review of Adolescent Health Status

The major health problems experienced by adolescents are related to health risk behaviors. The statistics are staggering. One-third of high-school seniors smoke regularly; one-fifth are smoking by the age of 11 years. By the age of 15 years more than one-third of adolescents have been drunk at least once; 9 out of 10 seniors have used alcohol — two-thirds to excess. By the age of 18 years, 25 percent of young women have been pregnant. Twenty-five percent of high-school students have seriously considered suicide. Twenty-five percent of acquired immune deficiency syndrome cases are estimated to have been contracted during adolescence. Fifty percent of adolescent deaths are due to homicides, suicides, or motor vehicle accidents. The consequences of adolescent risk behaviors are devastating. Successful prevention strategies would provide enormous benefits. The book describing the guidelines does an excellent job of defining the problems adolescents face and presents a comprehensive review of adolescent health issues.

### Recommendations

A summary of the recommendations by general topic follows. With respect to the delivery of health care services, the guidelines suggest annual routine health visits from age 11 to 21 years focusing on biomedical, psychosocial, health, and preventive services. Three of these visits should include a complete physical examination. These services should be age and developmentally appropriate and sensitive to individual and sociocultural differences. Physicians should establish office policies regarding confidentiality and how to involve parents. These policies should be made clear to adolescents and their parents.

Under the rubric of health guidance, the guidelines recommend that parents or adult caregivers should receive separate health guidance at least three times during their child's adolescence. Parent visits should occur early, middle, and late during this period and should include information about physical, sexual, and emotional development and the signs and symptoms of emotional distress. Parental behaviors that promote healthy adolescent adjustment and help in avoiding harmful behaviors should be emphasized. Adolescents should receive health guidance to help them understand their physical, psychosocial, and psychosexual development and the importance of their involvement in their own health care.

Specifically, the guidelines recommend that health guidance be provided on a variety of topics. The risk of injury should be discussed regarding alcohol and motor vehicle accidents. Also emphasized should be the use of such safety devices as seat belts, helmets, and athletic devices; the importance of conflict resolution without violence, including weapon avoidance and safety; and the importance of physical conditioning and regular exercise. Dietary counseling should include a healthy diet and safe weight management. Teaching responsible sexual behaviors, including abstinence, is recommended. Latex condoms and appropriate contraception should be made available, including counseling on how to use them. Adolescents should be advised to avoid tobacco, alcohol, and all abusable substances, as well as anabolic steroids.

Beyond anticipatory guidance as a form of primary prevention, the guidelines recommend specific screening for the presence of certain conditions as secondary prevention. A list of problems

to watch for includes: eating disorders and obesity by determining weight, stature, and concern about body image and dieting patterns; use of tobacco products, including cigarettes and smokeless tobacco; use of alcohol and other abusable substances, including prescription drugs and anabolic steroids; and sexual behaviors that might result in pregnancy and or sexually transmitted diseases, including human immunodeficiency virus (HIV) infection. Sexually active adolescents should be screened for sexually transmitted diseases; at-risk adolescents should be screened for HIV; a Papanicolaou smear is recommended for all sexually active girls and girls older than 18 years; attention should be paid to behavior or emotions that might indicate depression or risk of suicide, as should evidence of emotional, physical, and sexual abuse; learning or school problems should be assessed; and adolescents who live in homeless shelters, work in a health care setting, or come from high-prevalence areas should be screened for tuberculosis. The committee did not reassess the value of screening for hypertension or hyperlipidemia but rather accepted and incorporated existing guidelines.<sup>2,3</sup>

The guidelines follow the recommendations of the Centers for Disease Control Advisory Committee on Immunization Practices (ACIP). A tetanus booster and a second measles-mumps-rubella vaccine are recommended for this age group. Widespread use of hepatitis B vaccination is recommended because many adolescent risk behaviors increase the likelihood of exposure to hepatitis B. Routine immunization of all adolescents for hepatitis B is not presently an ACIP recommendation.

### **Focus on Substance Abuse: A Specific Example**

To illustrate better both the usefulness and the problems with the report, we focus on recommendations 10 and 15, which relate to abusable substances. Recommendation 10 suggests annual, individual health guidance from a physician on substance abuse. Recommendation 15 promotes annual inquiry by the physician about the adolescent's use of abusable substances with more in-depth history and referral for treatment if indicated. The physician is advised to recommend the adolescent stop the use of abusable substances.

Excellent and useful background information is provided. The authors point out the controversies in terminology about substance abuse, particu-

larly as all abusable substances are illegal in this age group. They also suggest a developmental framework that differentiates casual experimental use, which is found in the presence of healthy psychosocial adjustment, from abuse, which involves underlying psychological distress, heavy use, adverse consequences for functioning, and psychological or physical dependence. This framework is useful in dealing with an adolescent age group.

The burden of suffering and the magnitude of the problem involving alcohol, other psychoactive drugs, and anabolic steroids are well described. The relation between substance use and other risk behaviors is emphasized. Correlations between abuse of one substance leading to abuse of other substances, to accidents involving injury or death, or to unplanned sexual activity and its associated risks are detailed.

The section justifying the recommendations on substance abuse states:

Justification to support the utility of health guidance for the prevention of alcohol and drug use comes from the belief that health messages provided by physicians, as sources of credible information, can effect behavioral change in drinking and other drug use.

Most of the data-based evidence is from community settings. It is assumed that these findings can be generalized to physician encounters.

Justification of specific recommendations is reviewed. Supporting evidence is given for the physician's role in obtaining histories of substance use in adolescents.<sup>4-6</sup> Friedman, et al.<sup>4</sup> reported that 80 percent of adolescents who abused substances stated they would discuss this behavior with a physician if they were assured confidentiality. Marks, et al.<sup>5</sup> found similar findings in a nonabusing population. Needle, et al.<sup>7</sup> reported approximately 91 percent test-retest reliability for self-reported substance abuse. On the other hand, a study comparing self-report with the history obtained by a physician in an office encounter found that only 1 in 22 self-reported drug users was exposed by the physician interview.<sup>8</sup> Further evidence is given on the ability of standard questionnaires to give more information than what is obtained by physicians from a face-to-face encounter.<sup>9</sup> Having reported this evidence, however, the authors conclude, "Health professionals generally agree, however, that although questionnaires may promote screening for sensitive infor-



mation, they should not substitute for a face-to-face interview." No supporting evidence is provided for this statement.

The use of screening and diagnostic questionnaires is further described, and the following set of practical questions to help distinguish experimental use from abuse or dependency is provided<sup>10</sup>:

1. Does the adolescent ever use drugs when alone?
2. Does the adolescent ever use alcohol when alone?
3. Does the adolescent ever get drunk or high at social events or have friends who do?
4. Does the adolescent ever consume alcohol on school grounds?
5. Does the adolescent ever miss school because of drinking or hangovers?
6. When truant, does the adolescent ever go drinking or get high on drugs?

Adolescents known to be abusing drugs have given at least one positive response to these questions 88 to 94 percent of the time, whereas adolescents who were not abusing drugs have answered one or more questions positively only 6 to 15 percent of the time.

The guidelines recommend against urine testing to screen for substance abuse. This recommendation is based on expense and lack of reliability and validity unless the conditions of testing are carefully controlled and the concern that urine testing runs the risk of undermining trust between adolescent and physician.

## Discussion

Although levels of evidence were determined and used in guideline development, they are not available either in the guidelines themselves or in the book that supports the guidelines. For example, the book chapter on alcohol and other substance abuse cites 75 references; however, there is no indication of the strength of evidence provided by these references. In the appendix of the book the authors state, "It is important to note that guideline recommendations are justified by varying strengths of scientific information." The benefit of information on the strength of the evidence is not shared with the reader. The result is an expert panel, not an evidence-based report. The practi-

tioner cannot form an independent judgment about the quality of evidence for each recommendation, which hinders consistent implementation of the guidelines in one's own practice. Without information about the strength of evidence, it is also difficult to weigh new evidence as it becomes available. It would have been far better to specify the type of evidence clearly so the need for more information, particularly about physician-based interventions, would be more readily apparent.

The most striking aspect of the report to the practitioner is the physician-based nature of the recommendations. While the burden of suffering is well demonstrated, it is not clear that these problems are amenable to intervention in the setting proposed. Indeed, the data presented to support some recommendations come from community-based interventions, i.e., gun control, seat belt and helmet laws, and curfew regulations. The physician's time might be better spent in the community providing leadership on these topics. For some recommendations physician input might be more effective, but the challenges in distinguishing those adolescents at risk could be a limiting factor. Helping adolescents cope with peer pressure to take risks could be the most important component in physician efforts to reduce adolescent risk behaviors. Unless an adolescent's peers endorse wearing seat belts, using condoms, or taking a taxi home, this effort will be an uphill battle for physicians. In the same way, the internal and external pressures on young women to be thin are not simply a matter of inadequate knowledge of healthy eating habits.

In addition to concerns about the efficacy of physician intervention, the logistics of implementing the recommendations are problematic. In our resource-limited health care environment, an annual comprehensive health guidance visit with each adolescent would not be possible for most primary care physicians. To contemplate this level of physician resource utilization, the evidence of efficacy would need to be compelling.

The book supporting the recommendations provides a comprehensive and readable overview of adolescent health issues. It documents well that this neglected segment of our population deserves more resources and attention. The recommendations themselves are those of an expert panel. Evidence-based guidelines are very difficult to produce, but they provide essential information

about the state of knowledge in clinical areas and suggest fruitful areas for further research. By presenting results based on current expert opinion, the guidelines fail to provide this kind of direction for the future.

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## Appendix

### *Guidelines for Adolescent Preventive Services\**

#### I. RECOMMENDATIONS FOR DELIVERY OF HEALTH SERVICES

**Recommendation 1:** From ages 11 to 21, all adolescents should have an annual routine health visit.

- These visits should address the biomedical and psychosocial aspects of health, and they should focus on preventive services.

Adolescents should have a complete physical examination during three of these preventive service visits. One should be performed during early adolescence (age 11-14), one during middle adolescence (age 15-17), and one during late adolescence (age 18-21) unless more frequent examinations are warranted by clinical signs or symptoms.

**Recommendation 2:** Preventive services should be age and developmentally appropriate, and they should be sensitive to individual and sociocultural differences.

**Recommendation 3:** Physicians should establish office policies regarding confidential care for adolescents and how parents will be involved in that care. These policies should be made clear to adolescents and their parents.

#### II. RECOMMENDATIONS FOR HEALTH GUIDANCE

**Recommendation 4:** Parents or other adult caregivers of adolescents should receive health guidance at least once during early adolescence, once during middle adolescence, and, preferably, once during late adolescence.

This includes providing information about:

- Normative adolescent development, including information about physical, sexual, and emotional development.
- Signs and symptoms of disease and emotional distress.

- Parenting behaviors that promote healthy adolescent adjustment.
- Benefits parents can realize by discussing health-related behaviors with their adolescent, planning family activities, and acting as role models for health-related behaviors.

Methods for helping their adolescent avoid potentially harmful behaviors, such as:

- Monitoring and managing the adolescent's use of motor vehicles, especially if he or she is a new driver.
- Avoiding having weapons in the home. Parents who have weapons in the home should be advised to make them inaccessible to adolescents. If adolescents have weapons, parents and other adult caregivers should ensure that adolescents follow weapon safety procedures.
- Removing weapons and potentially lethal medications from the homes of adolescents who have suicidal intent.
- Monitoring the adolescent's social and recreational activities to restrict sexual behavior and use of tobacco, alcohol, and other drugs.

**Recommendation 5:** All adolescents should receive health guidance annually to promote a better understanding of their physical growth, psychosocial and psychosexual development, and the importance of becoming actively involved in decisions regarding their health care.

**Recommendation 6:** All adolescents should receive health guidance annually to promote the reduction of injuries.

Health guidance for injury prevention includes:

- Counseling to avoid the use of alcohol or other substances while using motor or recreational vehicles or where impaired judgment may lead to injury.
- Counseling to use safety devices, including seat belts, motorcycle and bicycle helmets, and appropriate athletic protective devices.
- Counseling to resolve interpersonal conflicts without violence.
- Counseling to avoid the use of weapons and/or promote weapon safety.
- Counseling to promote appropriate physical conditioning before exercise.

**Recommendation 7:** All adolescents should receive health guidance annually about dietary habits, including the benefits of a healthy diet and ways to achieve a healthy diet and safe weight management.

**Recommendation 8:** All adolescents should receive health guidance annually about the benefits of exercise and should be encouraged to engage in safe exercise on a regular basis.

**Recommendation 9:** All adolescents should receive health guidance annually regarding responsible sexual behaviors, including abstinence. Latex condoms to prevent sexually transmitted diseases (STDs) (including HIV infection) and appropriate methods of birth control should be made available with instructions on how to use them effectively.

Health guidance for sexual responsibility includes:

- Counseling that abstinence from sexual intercourse is the most effective way to prevent pregnancy and STDs, including HIV infection.
- Counseling on how human immunodeficiency virus (HIV) is transmitted, on the dangers of the disease, and on the effectiveness of latex condoms in preventing STDs, including HIV infection.
- Counseling to reinforce responsible sexual behavior in adolescents who are not currently sexually active and in those who are using birth control and condoms appropriately.
- Counseling on the need for adolescents to protect themselves and their partners from pregnancy, STDs (including HIV infection), and sexual exploitation.

**Recommendation 10:** All adolescents should receive health guidance annually to promote avoidance of tobacco, alcohol and abusable substances, and anabolic steroids.

### III. RECOMMENDATIONS FOR SCREENING

**Recommendation 11:** All adolescents should be screened annually for hypertension according to the protocol developed by the National Heart, Lung and Blood Institute Second Task Force on Blood Pressure Control in Children.

- Adolescents with either systolic or diastolic pressures at or above the 90th percentile for gender and age should have blood pressure (BP) measurements repeated at three different times within one month, under similar physical conditions, to confirm baseline values.
- Adolescents with baseline BP values greater than the 95th percentile for gender and age should have a complete biomedical evaluation to establish treatment options. Adolescents with BP values between the 90th and 95th percentile should be assessed for obesity and their blood pressure monitored every six months.

**Recommendation 12:** Selected adolescents should be screened to determine their risk of developing hyperlipidemia and adult coronary heart disease, following the protocol developed by the Expert Panel on Blood Cholesterol Levels in Children and Adolescents.

- Adolescents whose parents have a serum cholesterol level greater than 240 mg/dl and adolescents who are over 19 years of age should be screened for a total blood cholesterol level (non-fasting) at least once.
- Adolescents with an unknown family history or who have multiple risk factors for future cardiovascular disease (e.g., smoking, hypertension, obesity, diabetes mellitus, excessive consumption of dietary saturated fats and cholesterol) may be screened for total serum cholesterol level (non-fasting) at least once at the discretion of the physician.
- Adolescents with blood cholesterol values less than 170 mg/dl should have the test repeated within five years. Those with values between 170 and 199 mg/dl should have a repeated test. If the average of the two tests is below 170 mg/dl, total blood cholesterol level should be reassessed within five years. A lipoprotein analysis should be done if the average cholesterol value from the two tests is 170 mg/dl or higher or if the result of the initial test was 200 mg/dl or greater.
- Adolescents who have a parent or grandparent with coronary artery disease, peripheral vascular disease, cerebrovascular disease, or sudden cardiac death at age 55 or younger should be screened with a fasting lipoprotein analysis.
- Treatment options are based on the average of two assessments of low-density lipoprotein cholesterol. Values below 110 mg/dl are acceptable; values between 110 and 129 mg/dl are borderline. The lipoprotein status should be re-evaluated in one year. Adolescents with values of 130 mg/dl or greater should be referred for further medical evaluation and treatment.

**Recommendation 13:** All adolescents should be screened annually for eating disorders and obesity by determining weight and stature and asking about body image and dieting patterns.

Adolescents should be assessed for organic disease, anorexia nervosa, or bulimia if any of the following are found:

- Weight loss greater than 10% of previous weight;
- Recurrent dieting when not overweight;
- Use of self-induced emesis, laxatives, starvation, or diuretics to lose weight;
- Distorted body image;
- Body mass index (weight/height<sup>2</sup>) below fifth percentile.
- Adolescents with a body mass index (BMI) equal to or greater than the 95th percentile for age and gender are considered overweight and should have a more in-depth dietary and health assessment to determine psychosocial morbidity and risk for future cardiovascular disease.



- Adolescents with a BMI between the 85th and 94th percentile are at risk for becoming overweight. A dietary and health assessment to determine psychosocial morbidity and risk for future cardiovascular disease should be performed on such youths if any one of the following is identified:
- Their BMI has increased by two or more units during the previous 12 months;
- There is a family history of premature heart disease, obesity, hypertension, or diabetes mellitus;
- They express concern about their weight;
- They have elevated serum cholesterol levels or blood pressure.

If this assessment is negative, these adolescents should be provided general dietary and exercise counseling and monitored annually.

**Recommendation 14:** All adolescents should be asked annually about their use of tobacco products, including cigarettes and smokeless tobacco.

- Adolescents who use tobacco products should be assessed further to determine their pattern of use.

A cessation plan should be provided for adolescents who use tobacco products.

**Recommendation 15:** All adolescents should be asked annually about their use of alcohol and other abusable substances and about their use of over-the-counter or prescription drugs for nonmedical purposes, including anabolic steroids.

Adolescents who report any use of alcohol or other drugs or inappropriate use of medicines during the past year should be assessed further regarding family history; circumstances surrounding use; amount and frequency of use; attitudes and motivation about use; use of other drugs; and the adequacy of physical, psychosocial, and school functioning.

- Adolescents whose substance use endangers their health should be referred for counseling and mental health treatment as appropriate.
- Adolescents who use anabolic steroids should be counseled to stop.
- Use of urine toxicology for the routine screening of adolescents is not recommended.
- Adolescents who use alcohol or other drugs should also be asked about their sexual behavior and their use of tobacco products.

**Recommendation 16:** All adolescents should be asked annually about involvement in sexual behaviors that may result in unintended pregnancy and STDs, including HIV infection.

- Sexually active adolescents should be asked about their use and motivation to use condoms and contraceptive methods, their sexual orientation, the number of sexual partners they have had in the past six months, if they have exchanged sex for money or drugs, and their history of prior pregnancy or STDs.
- Adolescents at risk for pregnancy, STDs (including HIV), or sexual exploitation should be counseled on how to reduce this risk.
- Sexually active adolescents should also be asked about their use of tobacco products, alcohol, and other drugs.

**Recommendation 17:** Sexually active adolescents should be screened for STDs.

STD screening includes:

- A cervical culture (females) or urine leukocyte esterase analysis (males) to screen for gonorrhea.
- An immunologic test of cervical fluid (female) or urine leukocyte esterase analysis (male) to screen for genital chlamydia.
- A serologic test for syphilis if they have lived in an area endemic for syphilis, have had other STDs, have had more than one sexual partner within the last six months, have exchanged sex for drugs or money, or are males who have engaged in sex with other males.



- An evaluation for human papilloma virus by visual inspection (males and females) and by Pap test (females).
- If a presumptive test for STDs is positive, tests to make a definitive diagnosis should be performed, a treatment plan should be instituted according to guidelines developed by the Centers for Disease Control and Prevention, and the use of condoms should be encouraged.
- The frequency of screening for STDs depends on the sexual practices of the individual and the history of previous STDs.

**Recommendation 18: Adolescents at risk for HIV infection should be offered confidential HIV screening with the ELISA and confirmatory test.**

- Risk status includes having used intravenous drugs, having had other STD infections, having lived in an area with a high prevalence of STDs and HIV infection, having had more than one sexual partner in the last six months, having exchanged sex for drugs or money, being male and having engaged in sex with other males, or having had a sexual partner who is at risk for HIV infection.
- Testing should be performed only after informed consent is obtained from the adolescent.
- Testing should be performed only in conjunction with pretest and post-test counseling.
- The frequency of screening for HIV infection should be determined by the risk factors of the individual.

**Recommendation 19: Female adolescents who are sexually active or any female 18 or older should be screened annually for cervical cancer by use of a Pap test.**

Adolescents with a positive Pap test should be referred for further diagnostic assessment and management.

**Recommendation 20: All adolescents should be asked annually about behaviors or emotions that indicate recurrent or severe depression or risk of suicide.**

- Screening for depression or suicidal risk should be performed on adolescents who exhibit cumulative risk as determined by declining school grades, chronic melancholy, family dysfunction, homosexual orientation, history of physical or sexual abuse, alcohol or other drug use, previous suicide attempt, and suicidal plans.
- If suicidal risk is suspected, adolescents should be evaluated immediately. They should be referred to a psychiatrist or other mental health professional or they should be hospitalized.
- Nonsuicidal adolescents with symptoms of severe or recurrent depression should be referred to a psychiatrist or other mental health professional for treatment.

**Recommendation 21: All adolescents should be asked annually about a history of emotional, physical, and sexual abuse.**

- If abuse is suspected, adolescents should be assessed to determine the circumstances surrounding abuse and the presence of physical, emotional, and psychosocial consequences, including involvement in health-risk behaviors.
- Health providers should be aware of local laws about the reporting of abuse to appropriate state officials, in addition to ethical and legal issues regarding how to protect the confidentiality of the adolescent patient.
- Adolescents who report emotional or psychosocial sequelae should be referred to a psychiatrist or other mental health professional for evaluation and treatment.

**Recommendation 22: All adolescents should be asked annually about learning or school problems.**

- Adolescents who report a history of truancy, repeated absences, or poor or declining performance should be assessed for the presence of conditions that could interfere with school success. These include learning disability, attention-deficit hyperactivity disorder, medical problems, sexual abuse, family dysfunction, mental disorders, or alcohol or other drug use.

This assessment, and the subsequent management plan, should be coordinated with school personnel and with the adolescent's parents or caregivers.

**Recommendation 23:** Adolescents should receive a tuberculin skin test if they have been exposed to active tuberculosis, have lived in a homeless shelter, have been incarcerated, have lived in or come from an area with a high prevalence of tuberculosis, or currently work in a health care setting.

- Adolescents with a positive tuberculin test should be treated according to treatment guidelines developed by the Centers for Disease Control and Prevention.

The frequency of testing depends on risk factors of the individual adolescent.

**Recommendation 24:** All adolescents should receive prophylactic immunizations according to the guidelines established by the federally convened Advisory Committee on Immunization Practices.

- Adolescents should receive a bivalent TD vaccine 10 years after their previous DPT vaccination.

All adolescents should receive a second trivalent MMR vaccination, unless there is documentation of two vaccinations earlier during childhood. An MMR should not be given to adolescents who are pregnant.

Susceptible adolescents who engage in high-risk behaviors should be vaccinated against hepatitis B virus. This includes adolescents who have had more than one sexual partner during the previous six months, have exchanged sex for drugs or money, are males who have engaged in sex with other males, or have used intravenous drugs. Widespread use of the hepatitis B vaccine is encouraged because risk factors are often not easily identifiable among adolescents. Universal hepatitis B vaccination should be implemented in communities where intravenous drug use, adolescent pregnancy, and/or STD infections are common.

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