shared decision-making involves the choice of techniques for colon cancer screening (Chap. 100). In controlled studies, the use of annual FOBT reduces colon cancer deaths by 15–30%. Flexible sigmoidoscopy reduces colon cancer deaths by ~60%. Colonoscopy offers the same benefit as or greater benefit than flexible sigmoidoscopy, but its use incurs additional costs and risks. These screening procedures have not been compared directly in the same population, but the estimated cost to society is similar: $10,000–25,000 per year of life saved. Thus, although one patient may prefer the ease of preparation, less time disruption, and the lower risk of flexible sigmoidoscopy, others may prefer the sedation and thoroughness of colonoscopy.

TABLE 4-6 PREVENTIVE COUNSELING RECOMMENDED BY THE USPSTF

Topic	Chapter Reference
Alcohol and drug use	467, 468e
Genetic counseling for *BRCA1/2* testing among women at increased risk for deleterious mutations	
Nutrition and diet	
Sexually transmitted infections	163, 226
Sun exposure	75
Tobacco use	470

COUNSELING ON HEALTHY BEHAVIORS

In considering the impact of preventive services, it is important to recognize that tobacco and alcohol use, diet, and exercise constitute the vast majority of factors that influence preventable deaths in developed countries. Perhaps the single greatest preventive health care measure is to help patients quit smoking (Chap. 470). However, efforts in these areas frequently involve behavior changes (e.g., weight loss, exercise, seat belts) or the management of addictive conditions (e.g., tobacco and alcohol use) that are often recalcitrant to intervention. Although these are challenging problems, evidence strongly supports the role of counseling by health care providers (Table 4-6) in effecting health behavior change. Educational campaigns, public policy changes, and community-based interventions have also proven to be important parts of a strategy for addressing these factors in some settings. Although the USPSTF found that the evidence was conclusive to recommend a relatively small set of counseling activities, counseling in areas such as physical activity and injury prevention (including seat belts and bicycle and motorcycle helmets) has become a routine part of primary care practice.

IMPLEMENTING DISEASE PREVENTION AND SCREENING

The implementation of disease prevention and screening strategies in practice is challenging. A number of techniques can assist physicians with the delivery of these services. An appropriately configured electronic health record can provide reminder systems that make it easier for physicians to track and meet guidelines. Some systems give patients secure access to their medical records, providing an additional means to enhance adherence to routine screening. Systems that provide nurses and other staff with standing orders are effective for smoking prevention and immunizations. The Agency for Healthcare Research and Quality and the Centers for Disease Control and Prevention have developed flow sheets and electronic tools as part of their "Put Prevention into Practice" program (*http://www.uspreventiveservicestaskforce.org/tools.htm*). Many of these tools use age categories to help guide implementation. Age-specific recommendations for screening and counseling are summarized in Table 4-7.

Many patients see a physician for ongoing care of chronic illnesses, and this visit provides an opportunity to include a "measure of prevention" for other health problems. For example, a patient seen for management of hypertension or diabetes can have breast cancer screening incorporated into one visit and a discussion about colon cancer screening at the next visit. Other patients may respond more favorably to a clearly defined visit that addresses all relevant screening and prevention interventions. Because of age or comorbidities, it may be appropriate with some patients to abandon certain screening and prevention activities, although there are fewer data about when to "sunset" these services. For many screening tests, the benefit of screening does not accrue until 5 to 10 years of follow-up, and there are generally few data to support continuing screening for most diseases past age 75. In addition, for patients with advanced diseases and limited life expectancy, there is considerable benefit from shifting the focus from screening procedures to the conditions and interventions more likely to affect quality and length of life.

TABLE 4-7 AGE-SPECIFIC CAUSES OF MORTALITY AND CORRESPONDING PREVENTIVE OPTIONS

Age Group	Leading Causes of Age-Specific Mortality	Screening Prevention Interventions to Consider for Each Specific Population
15–24	1. Accident	• Counseling on routine seat belt use, bicycle/motorcycle/ATV helmets (1)
	2. Homicide	• Counseling on diet and exercise (5)
	3. Suicide	• Discuss dangers of alcohol use while driving, swimming, boating (1)
	4. Malignancy	• Assess and update vaccination status (tetanus, diphtheria, hepatitis B, MMR, rubella, varicella, meningitis, HPV)
	5. Heart disease	• Ask about gun use and/or gun possession (2,3)
		• Assess for substance abuse history including alcohol (2,3)
		• Screen for domestic violence (2,3)
		• Screen for depression and/or suicidal/homicidal ideation (2,3)
		• Pap smear for cervical cancer screening after age 21 (4)
		• Discuss skin, breast awareness, and testicular self-exams (4)
		• Recommend UV light avoidance and regular sunscreen use (4)
		• Measurement of blood pressure, height, weight, and body mass index (5)
		• Discuss health risks of tobacco use, consider emphasis on cosmetic and economic issues to improve quit rates for younger smokers (4,5)
		• Chlamydia and gonorrhea screening and contraceptive counseling for sexually active females, discuss STD prevention
		• Hepatitis B, and syphilis testing if there is high-risk sexual behavior(s) or any prior history of sexually transmitted disease
		• HIV testing
		• Continue annual influenza vaccination

(*Continued*)