

HOSPITAL PHYSICIAN®

INTERNAL MEDICINE BOARD REVIEW MANUAL

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The *Hospital Physician Internal Medicine Board Review Manual* is a peer-reviewed study guide for residents and practicing physicians preparing for board examinations in internal medicine. Each manual reviews a topic essential to the current practice of internal medicine.

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Primary Care Prevention

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Primary Care Prevention

OVERVIEW OF PREVENTION AND SCREENING

An ounce of prevention is worth a pound of cure. Considering the remarkable health improvements that have taken place over the last century, it is easy to recognize the wisdom in Benjamin Franklin's oft-quoted aphorism. Since 1900, the average U.S. life span has increased by more than 30 years. Twenty-five of these added years are attributed to investments in prevention. Vaccines to protect children from polio and other infectious diseases, improvements in motor vehicle safety, safer and healthier foods, and clean drinking water have saved lives and prevented disability.¹ A more aggressive approach to the treatment of hypertension is at least in part responsible for the greater than 50% decrease in age-adjusted stroke mortality since the early 1970s,² and early detection and treatment of cervical carcinoma in situ has effectively reduced its associated morbidity and mortality.³

Despite the obvious need for clinical preventive services, there is significant underuse of effective preventive care in the United States, resulting in lost lives, unnecessary poor health, and inefficient use of health care dollars.⁴ Increasing the use of just 5 preventive services identified by the U.S. Preventive Services Task Force (USPSTF) would save more than 100,000 lives each year.⁴ Some of the leading causes of death in the United States are directly linked to personal health behaviors, such as substance use, diet and activity patterns, sexual behaviors, and motor vehicle safety habits. These behaviors may offer the most promising if not the most challenging role for prevention in current medical practice.^{5,6}

WHAT IS PREVENTIVE MEDICINE?

Preventive medicine as a discipline broadly focuses on promoting health and preventing disease in individuals and defined populations by helping them enhance their own health. This may be contrasted with public health, a discipline that attempts to promote health in the population at large through the application of organized community efforts. Despite these academic distinctions, there is in fact much overlap between the practice of preventive medicine by physicians, the at-

tempts of individuals and families to promote their own health and that of their communities, and the efforts of governments and voluntary agencies to achieve the same health goals.⁷

Preventive measures can be classified into 3 levels,⁸ although the clinical distinctions between these levels may blur at times:

1. *Primary prevention* is designed to prevent the occurrence of a disease or condition via behavioral, environmental, and/or nutritional modifications, eg, dedicated bicycle lanes to facilitate exercise and chlorination of water to limit water-borne disease outbreaks. It also includes offering smoking cessation counseling to reduce the incidence of COPD and barrier contraception to reduce the incidence of human papilloma virus exposure and subsequent cervical dysplasia.
2. *Secondary prevention* is the detection and treatment of "asymptomatic persons who have already developed risk factors or preclinical disease but in whom the condition is not clinically apparent."⁶ Screening for clinically occult disease (Pap smears for cervical cancer, mammography for breast cancer, and colonoscopy for colorectal carcinoma) is essentially a form of secondary prevention.
3. *Tertiary prevention* is the prevention and/or amelioration of disease complications after the disease has become clinically apparent. The goal here is to limit disability in those with early symptomatic disease and/or to provide rehabilitation in those with late symptomatic disease.⁷ Examples of the former include oral hypoglycemic agents for the management of diabetes and chemotherapy for patients with lymphoma. Examples of the latter include acute brain rehabilitation after a war-related head injury or pulmonary rehabilitation in those with emphysema.

SCREENING

Mass screening focuses on "the early detection of asymptomatic disease that occurs commonly and has significant risk for negative outcome without treatment and/or the identification of risk factors that increase the likelihood of developing the disease and use of this knowledge to prevent or lessen the disease by modifying the risk factors."⁹ Screening (which takes place in a community setting and is applied to a community population) should be differentiated from case finding (or