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An Overview of the Cancer Burden for Primary Care Physicians **439**

Michael Thun, Ahmedin Jemal, Carol DeSantis, Bonny Blackard,
and Elizabeth Ward

Primary care physicians and other caregivers are uniquely positioned to communicate with patients about their real risks of developing or dying from cancer and actions that can reduce these risks. This article discusses the statistics used to measure the cancer burden in a manner intended to help primary caregivers communicate more effectively with patients about cancer. The basic terms used to measure incidence, mortality, and relative survival, and considerations that influence the interpretation of cancer trends are described; opportunities to accelerate progress in reducing cancer incidence and death rates are identified. Although integrating effective prevention measures into standard clinical care will require changes in health care policy and in clinical practice, the combination of these approaches is essential to prevent the massive anticipated increase in the number of cancer cases, due to growth and aging of the population.

Cancer Control in Low- and Middle-income Countries: The Role of Primary Care Physicians **455**

Nathan Grey and Ana Garces

Cancer is among the most preventable and the most curable of the major chronic life-threatening diseases. As the cancer burden grows, it is evident that new approaches must be developed to more effectively manage the disease. Given their unique role, primary care physicians and health workers are critically important to these interventions and to the successful implementation of comprehensive cancer control strategies. In this article, an overview of the epidemiologic trends related to cancer is provided, several special circumstances affecting cancer control efforts in low- and middle-income countries are identified, and broad and specific approaches for primary care physicians and other primary care health workers to prevent and control cancer are recommended.

- Cancer Risk Assessment for the Primary Care Physician** 471
Larissa A. Korde and Shahinaz M. Gadalla
- Cancer is the second leading cause of death in the United States. Cancer risk assessment can be divided into two major categories: assessment of familial or genetic risk and assessment of environmental factors that may be causally related to cancer. Identification of individuals with a suspected heritable cancer syndrome can lead to additional evaluation and to interventions that can substantially decrease cancer risk. Special attention should also be paid to potentially modifiable cancer risk factors in the course of advising primary care patients regarding a healthy lifestyle. Clinical guidelines, targeting both genetic and modifiable cancer risk factors, are available and can facilitate the application of these health care principles in the primary care setting.
- Behavioral Interventions in Tobacco Dependence** 489
Frank T. Leone and Sarah Evers-Casey
- Patients who smoke represent a frustrating social paradox. The harmful effects of tobacco use have been well publicized in the past 50 years, yet more than one in five adults in the United States continue to smoke. A better understanding of the nature of nicotine addiction, of behavioral learning, and of common misconceptions regarding tobacco use treatment, can create new opportunities to impact smoking by offering clinicians novel methods of influence that have otherwise not be available within the traditional cessation approach. Understanding and dealing with the paradox can provide more productive and meaningful ways of improving not only health, but potentially also improving well-being.
- Obesity and Cancer** 509
Rickie Brawer, Nancy Brisbon, and James Plumb
- Obesity has become the second leading preventable cause of disease and death in the United States, trailing only tobacco use. Weight control, dietary choices, and levels of physical activity are important modifiable determinants of cancer risk. Physicians have a key role in integrating multifactorial approaches to prevention and management into clinical care and advocating for systemic prevention efforts. This article provides an introduction to the epidemiology and magnitude of childhood and adult obesity; the relationship between obesity and cancer and other chronic diseases; potential mechanisms postulated to explain these relationships; a review of recommended obesity treatment and assessment guidelines for adults, adolescents, and children; multilevel prevention strategies; and an approach to obesity management in adults using the Chronic Care Model.
- Screening and Prevention of Breast Cancer in Primary Care** 533
Jeffrey A. Tice and Karla Kerlikowske
- Mammography remains the mainstay of breast cancer screening. There is little controversy that mammography reduces the risk of dying from breast

cancer by about 23% among women between the ages of 50 and 69 years, although the harms associated with false-positive results and overdiagnosis limit the net benefit of mammography. Women in their 70s may have a small benefit from screening mammography, but overdiagnosis increases in this age group as do competing causes of death. While new data support a 16% reduction in breast cancer mortality for 40- to 49-year-old women after 10 years of screening, the net benefit is less compelling in part because of the lower incidence of breast cancer in this age group and because mammography is less sensitive and specific in women younger than 50 years. Digital mammography is more sensitive than film mammography in young women with similar specificity, but no improvements in breast cancer outcomes have been demonstrated. Magnetic resonance imaging may benefit the highest risk women. Randomized trials suggest that self-breast examination does more harm than good. Primary prevention with currently approved medications will have a negligible effect on breast cancer incidence. Public health efforts aimed at increasing mammography screening rates, promoting regular exercise in all women, maintaining a healthy weight, limiting alcohol intake, and limiting postmenopausal hormone therapy may help to continue the recent trend of lower breast cancer incidence and mortality among American women.

Screening and Prevention: Cervical Cancer

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Lara C. Weinstein, Edward M. Buchanan, Christina Hillson,
and Christopher V. Chambers

Cervical cancer is the leading cause of cancer death in women in developing countries and significant disparities in cervical cancer mortality rates persist in the United States. Improved recognition of the role of human papilloma virus (HPV) in cervical cancer pathogenesis has recently revolutionized screening and prevention strategies. Improved understanding and implementation of these advances will allow primary care physicians to significantly impact the cervical cancer mortality burden. This article reviews the basic physiology of the transformation zone, current understanding of cervical cancer pathogenesis, the history and evolution of cervical cancer screening in general and in specific populations of women, and an overview of the development and current use of the HPV vaccine.

New Screening Guidelines for Colorectal Cancer: A Practical Guide for the Primary Care Physician

575

James E. Allison and Michael B. Potter

Until recently, most clinical guidelines in the United States were in general agreement about the tests available for colorectal cancer screening, recommending fecal occult blood tests every year, flexible sigmoidoscopy every 5 years, both these tests together, double contrast barium enema every 5 years, or colonoscopy every 10 years. However, the release of two new sets of guidelines in 2008 has made it necessary for primary care physicians to update their knowledge of the recommended screening options. The most influential factor in determining whether a patient is screened is recommendation from a physician. The primary goal of this article is to review and critique the new guidelines for average-risk

screening in adults older than 50 years. Armed with this information, primary care physicians will be better educated as to the importance of offering screening to their patients, as well as the strength and weaknesses of each recommended test.

Risk Factors, Prevention and Early Detection of Prostate Cancer

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Stacy Loeb and Edward M. Schaeffer

Approximately one in six men in the United States will develop prostate cancer during their lifetime. Genetic and environmental variables play a role in determining prostate cancer risk. This article highlights the latest evidence regarding the risk factors for prostate cancer. The current screening strategies using prostate-specific antigen and digital rectal examination are also discussed, as well as the limitations of these protocols and potential methods for improving early detection.

The Future of Cancer Screening

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Lauren G. Collins, Daisy T. Wynn, and Joshua H. Barash

Lung and ovarian cancers are two of the most common and deadly cancers affecting men and women in the United States. The potential impact of an effective screening modality for early detection of these cancers is enormous. Yet, to date, no screening tool has been proven to reduce mortality in asymptomatic individuals, and no major organization endorses current modalities for screening for these cancers. Novel approaches, potentially relying on genomics and proteomics, may be the future for early detection of these deadly cancers.

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