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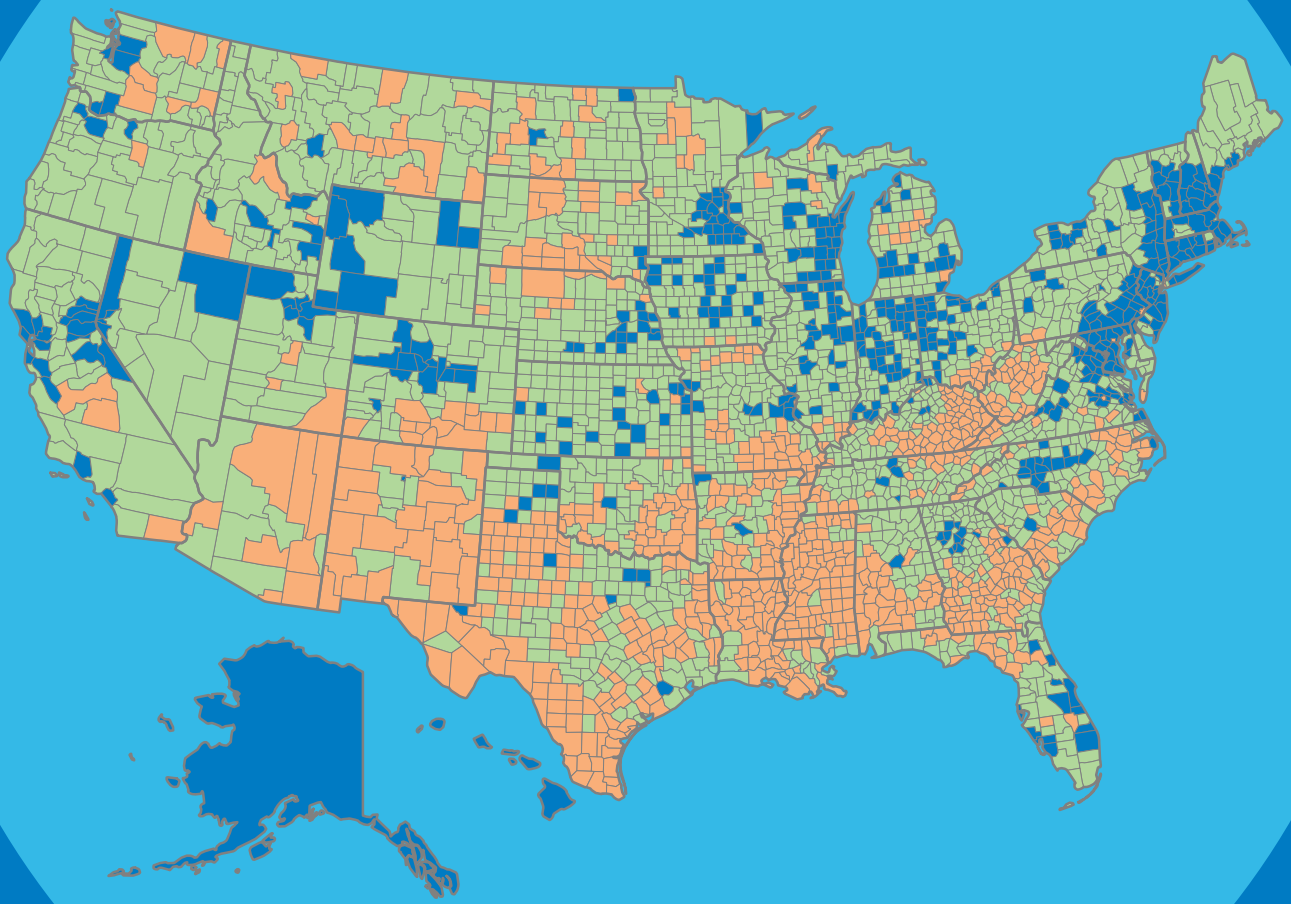
Area Socioeconomic Variations
in U.S. Cancer Incidence, Mortality, Stage, Treatment, and Survival, 1975–1999



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Area Socioeconomic Variations in U.S. Cancer Incidence, Mortality, Stage, Treatment, and Survival, 1975–1999

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Foreword

This monograph presents one of the most comprehensive analyses yet on socioeconomic patterns in cancer incidence and outcomes in the United States. The extensive amount of data assembled in this report will be extremely useful in furthering our understanding of the relationship of socioeconomic status to the overall cancer burden as well as to the magnitude and causes of current social inequalities in cancer between major racial and ethnic groups in the United States. Documenting and monitoring the extent of socioeconomic inequalities in cancer incidence, mortality, disease stage, treatment, and survival remain central to cancer surveillance research in terms of generating hypotheses for population health research and the evidence for comprehensive population-based strategies for cancer prevention and control. This monograph is an excellent example of how linkage of census-based area measures with the national mortality and SEER databases can be used to track socioeconomic trends in cancer rates and to improve our capacity to monitor progress toward reducing the cancer burden among various segments of the U.S. population.

Disparities documented here are not necessarily the experience of each individual. Rather, they indicate differences in cancer incidence and outcomes among population groups or geographic areas that are stratified with respect to key social and economic resources, such as education, income, or poverty level. These group- or area-based differences in cancer may be related to a variety of factors, including the social and physical environment, health behaviors (smoking and diet being two main cancer-related behaviors), and health care.

This monograph also makes a significant contribution to the burgeoning literature on social determinants of health. Although the role of socioeconomic factors as determinants of such major chronic diseases as heart disease, stroke, diabetes, and respiratory diseases are well established, their relationship with cancer is less well studied. As shown here, the relationship between socioeconomic position and cancer is a complex one and varies according to cancer type and secular time. Despite overall improvements in mortality and patient survival, socioeconomic inequalities in cancer persist, but in some instances they may be changing direction, lessening or widening over time. Like other diseases and health outcomes, differences in cancer incidence, mortality, disease stage, and survival are shown to exist across the entire range of social hierarchy, not just between rich and poor, privileged and disadvantaged. It is hoped that the data and findings of this report will stimulate future research aimed at identifying major social, environmental, health care, behavioral, and biologic determinants underlying these cancer disparities.

I would like to congratulate my former colleagues at the National Cancer Institute for completing this important work, which highlights the value of the SEER program as a national resource. It is an exciting example of the kinds of results we can expect from an expanded perspective on what can be accomplished by surveillance research. I, with the authors, hope that this publication will be a major stimulus for innovative work by cancer researchers, novel insights by policy makers, and ultimately improvement of the public health.

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Abstract

Objectives. This report analyzes area socioeconomic differentials and trends in incidence, mortality, stage of disease, treatment, and survival for all cancers combined and for six major cancers (lung, colon/rectum, prostate, breast, uterine cervix, and melanoma of the skin) by sex and race/ethnicity in the United States.

Methods. County and census tract poverty rates from the 1990 census were linked to U.S. mortality, SEER cancer incidence, stage, treatment, and survival data from 1975 to 1999. Age-adjusted incidence and mortality rates were calculated for each area poverty group, and differences in rates were tested for statistical significance at the 0.05 level.

Results. Substantial area socioeconomic gradients in both incidence and mortality were observed for various cancers. The association between area socioeconomic position and cancer mortality changed markedly over the past 25 years. Socioeconomic inequalities in male lung and prostate cancer mortality widened, while those in colorectal and breast cancer mortality narrowed over time and even appear to have reversed in the late 1990s. There was a marked increase in incidence for breast cancer and melanoma of the skin in all socioeconomic groups, with a positive gradient remaining throughout the study period. Socioeconomic inequalities in cervical cancer also persisted against a backdrop of declining incidence and mortality rates. For each of the cancers considered, regardless of race/ethnicity, both men and women in high poverty areas (poverty rates 20% or higher) had substantially higher rates of late-stage cancer diagnosis and lower rates of cancer survival than those in low poverty areas (poverty rates less than 10%). Cancer survival rates for residents of higher poverty areas remained lower even after controlling for differences in stage. Residents of higher poverty areas were also less likely to receive preferred treatment for lung and breast cancers and to undergo radical prostatectomy.

Conclusions. Area socioeconomic differentials in cancer incidence and mortality vary substantially by sex, race/ethnicity, and time period. Area socioeconomic disparities may be associated with similar disparities in the distribution of smoking, diet, physical activity, cancer screening, and treatment. Area socioeconomic measures, when linked to cancer registration and vital statistics data, enhance cancer surveillance research and monitoring.

Key Words. SEER, cancer, incidence, mortality, survival, stage of disease, treatment, area-based measure, socioeconomic status, poverty, deprivation, health disparities, race/ethnicity.