

## Cancer and First Nations and Native American Populations

### Introduction

Cancer was once thought of as the great equalizer, a disease that would strike indiscriminately across boundaries of race, class, and gender. In fact, throughout North America, cancer mortality rates and rates of new cancer mortality rates and rates of new cases of cancer - cancer incidence - show considerable variation by such factors as race and ethnicity, income level, gender, and geographic location. Incidence and mortality rates also vary by type of cancer and its locations in the body. These patterns have implications, of course for our understanding of the cases of cancer and for interventions to prevent it and to reduce mortality rates. The patterns of cancer rates also turn out to be particularly important for minority populations, both in Canada and the United States [1,2,3,4].

Native populations in both Canada and the United States are the lowest-income sectors of their country's total populations. According to the 1991 Aboriginal Peoples Survey, First Nations adults have Canada's highest unemployment rates (more than twice that of the national average); they have the highest poverty rates (54% had a total annual income below Cdn. \$10,000); and few communities have adequate water supplies or waste disposal. In some First Nations communities where people eat traditional foods, including fish and seafood, they may face considerably higher exposures to environmental contaminants including heavy metals and organic chemicals such as PCBs [6,7].

In the United States, Native Americans and Alaska Natives - who belong to more than 500 federally recognized tribes living in 35 states - are similarly the lowest-income part of the population. In the 2000 U.S. census, about 2.5 million people identified themselves as "American Indian or Alaska Native alone," and 4.1 million (about 1.5 percent of the U.S. population) classified themselves as "American Indian or Alaska Native alone or in combination with another race." This sector of the population has a poverty rate of about 26%, or twice the national rate. These pronounced income disparities are accompanied by health disparities; Native Americans and Alaska Natives also often have less access to health care and screening [1,4,8].

Historically, rates of cancer incidence and mortality among populations of First Nations peoples, Native Alaskans, and Native Americans were believed to be lower overall than those for white populations. More recent studies, however, suggest that the burden of cancer among the native populations, which often have far less access to basic health services than other ethnic groups, is greater than was previously believed. Because of racial misclassification in public health data sets, the earlier studies underestimated cancer mortality rates by 20 percent and in some cases by as much as 40 percent [9,10]. These rates also vary considerably by region, by site or type of cancer, and by gender; in Northern Plains (MRR=1.7). Males in the Northern Plains similarly showed elevated mortality rates for prostate can-

cer (MRR=1.5), while the other regions showed rates lower than the U.S. rate overall. Finally, both men and women showed far more elevated rates of mortality rates for cancers that were "ill defined and unspecified" in the Northern Plains (MRR=1.7 and 2.3, respectively) [2].

Other studies have looked at the difficulties of estimating cancer incidence and mortality rates for Native Americans [3,8,9,11]. Partin et al. looked at how cancer incidence estimates for Native Americans could be improved in Minnesota population [3].

Public health data sets in Canada have similar limitations. In Manitoba, for example, the Health Registry does not fully identify First Nations individuals [12]. Efforts to link the Manitoba Health Registry with the Indian Registry's Status Verifications System created more accurate information about First Nations health status and use of health care services. In Ontario, to determine cancer incidence and mortality rates among First Nations people and compare them with the general population, Marrett and Chaudry linked registration files from the Canadian government with the provincial cancer registry and mortality file. The results showed increased incidence rates for all cancers and for major cancers between 1968-1975 and 1984 and 1991, suggesting a population in transition to higher rates of chronic disease [13].

### Screening and Prevention

Emerging patterns of cancer incidence and mortality rates among First Nations, Native American, and Alaska Native peoples have important implications for cancer prevention and screening programs. The regional and gender differences and variations among cancers means that various sub-populations would benefit from targeted intervention programs to increase their access to health care and screening and to address risk factors related to diet, obesity, tobacco use, and alcoholism.

Along with rising rates in cancer incidence and mortality, native populations also have rising rates of diabetes and heart disease. More research needs to be done on the interplay between diabetes, obesity, cancer, and heart disease - diseases of modern society that have all appeared in native populations within the last generation - and genetic predisposition to these diseases. There also needs to be more research done on the exposure of these native populations to environmental contaminants, whether through diet or through geographic locations. Finally, prevention and intervention efforts would benefit from research into strategies that could prove most effective with these varied populations.

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