

# Cancer in Native Americans in the U.S.

By Arthur M. Michalek, Ph.D.



**Native Americans** in the U.S. were once believed to be immune to cancer because of a low incidence of these diseases, but unfortunately these trends have been reversed. Native Americans have higher risks for certain types of cancer, are more likely to be diagnosed at a later stage, and more likely to die of cancer. The reasons for this are complex, involving cultural, economic, and genetic factors. The diversity of tribes in the U.S. presents challenges to the efficacy of epidemiological studies. More research is needed to improve access to healthcare for Native Americans, which will require providers to consider the varied cultural nuances specific to each tribe.

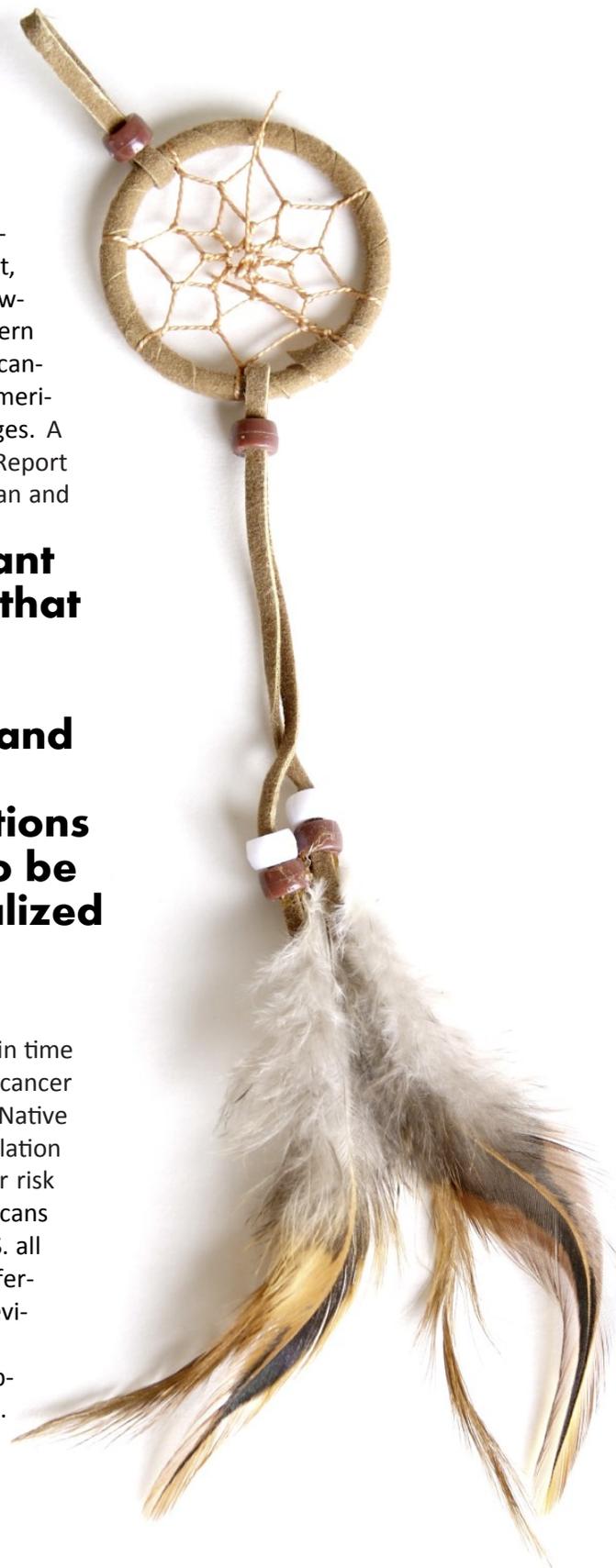
**A**t the turn of the past century, cancer was such a rare occurrence among Native Americans that, based largely on clinical observations, they were thought to be immune (1). Observers speculated that this was because of natural immunity, reliance on a more natural, healthy diet and lifestyle. Much has changed in these populations over the past 100 years. Today, cancer is the second-leading cause of death among these populations. Not only are incidence rates increasing, but so is their disparity in terms of survival. Native American populations suffer some of the poorest five-year survival rates from cancer. A number of factors are responsible for increasing cancer rates and disparities as will be briefly presented below.

To begin to understand this population, one should first be clear as to nomenclature. Native Americans represent both American Indian populations (those resident in the lower 48 States) and Alaska Natives. Not only does the term Native American represent two extremely broad groups, but it represents 565 federally recognized tribes. Each has its own distinct culture and cancer risk. There have been few studies regarding cancer patterns among individual U.S. American Indian populations for a variety of reasons. Many of the studies published to date have focused on American Indian populations residing in the southwestern regions of the U.S., with fewer on tribal groups residing outside these regions. Studies demonstrate increasing cancer incidence overall and some unique patterns of site-specific cancers. While cancer incidence rates have demonstrated a temporal rise, they remain, for the most part, lower or at the same level as rates in the general population. The Report to the Nation on the Status of Cancer (2) provided an update

on cancer among American Indians and Alaska Natives. It noted that overall rates for Native Americans were lower than for non-Hispanic whites from 1999 through 2004 for most cancers, but they were higher for cancers of the stomach, liver, cervix, kidney, and gallbladder. Not surprisingly the five most frequently diagnosed cancers among this population across the entire country included prostate, lung, colon and rectum, kidney, and bladder cancer. Among females the five most frequent cancers included breast, lung, colon and rectum, uterus, and kidney. Regional analyses, however, revealed higher rates of cancer in the northern and southern Plains and Alaska. Especially important was their finding that for cancers of the breast, colon and rectum, prostate, and cervix, Native American populations were less likely to be diagnosed at localized stages. A further example of population heterogeneity is the finding in the Report that colorectal cancers were half as common among American Indian and Alaska Native populations as the general population, whereas we (3) observed that they were equally as common among members of a North-eastern U.S. tribe. Despite an increasing number of publications describing cancer patterns among Native American populations over the past 20 years (4-7), a clear understanding remains somewhat elusive. As we had previously published (8), the reasons for this are many and include tribal heterogeneity, population size, racial misclassification within population/registry databases, and differences in time periods examined. One of the factors in temporal differences in cancer incidence rates amongst Native American populations is age. Native American populations tend to be younger than the general population and therefore, since cancer is primarily a disease of aging, at lower risk of cancer. According to the Indian Health Service, Native Americans born today have a life expectancy that is 4.1 years less than the U.S. all races population (73.6 years to 77.7 years, respectively) (9). This differential was even greater at the beginning and mid-points of the previous century.

A key research challenge in Native American communities is population size. According to the 2010 Census (10), “of the total U.S. population, 2.9 million people, or 0.9 percent, reported being American Indian and Alaska Native alone. In addition, 2.3 million people, or another 0.7 percent, reported American Indian and

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Alaska Native in combination with one or more other races.” Keep in mind that there are 565 federally recognized tribes, and that the 10 largest account for approximately 1.1 million. The vast majority of remaining tribes have populations below 5,000, and many more having populations numbered in the hundreds. Thus, many individual tribes do not have sufficient population size to conduct epidemiologic research. Solutions include extending periods of observation or combining tribes. The former solution leads to increased expense and time, while the latter ignores tribal heterogeneity.

Tribal heterogeneity is an important issue given that tribes have distinct languages and customs. As with any population, culture and customs have a significant influence on perceptions. These perceptions play a role in risk behavior, risk modification, prevention, and treatment. It is incumbent upon the health professional to be aware of these cultural nuances in the development and conduct of their work (11). Specific tribes need to be dealt with as unique entities with respect for customs, lineage (paternal versus maternal), linguistic nuances, region of the country, residence (urban versus rural), traditional versus “westernized” philosophy, economic and educational profiles, etc. Residence (reservation

versus non-reservation) is a significant influence on the tribal community. Despite the focus of most research, less than a third of all Native Americans reside on reservation land

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(12). Differences between Native Americans and the more general non-Hispanic white populations have also resulted in significant differences in health disparities.

According to data from Surveillance, Epidemiology and End Results (SEER), American Indian and Alaskan Native males and females, despite demonstrating similar to low incidence rates, had the lowest survival rates for cancers of the breast, lung, and prostate and for all cancers combined (13). Disparities are also evident for other diseases. According to the Indian Health Service (IHS) (14), Native Americans die at higher

rates from alcoholism (552% higher), diabetes (182% higher), unintentional injuries (138% higher), homicide (83% higher) and suicide (74% higher). IHS contends (14) that disparities exist for a variety of reasons including lower educational levels, disproportionate poverty, discrimination in the delivery of health services, and cultural differences. They further assert that these issues are rooted in economic adversity and poor social conditions. The National Cancer Institute (15) presents an excellent summary of ongoing research on cancer disparities among Native Americans. They cite that the reasons behind these disparities are varied and include cultural barriers, socioeconomic factors, perceived risk, access to and utilization of screening and clinical services, etc. A reoccurring factor in many disparity studies is "culture." Culture has been evaluated by numerous researchers as a factor of socioeconomic status, but it is a complex term consisting of numerous individual and community factors (16). Per Kaga-wa-Singer we need to "more accurately encompass its holistic and contextual nature." To understand these differences is to ensure successful interventions dealing with the continuum of cancer issues related to prevention, detection, treatment, and palliative care services. Native Americans are a truly unique group in these United States. They are the original inhabitants of our nation and repre-

sent an ancestry dating back thousands of years. For those working with Native American populations, success can best be assured by developing programs with significant input from native communities utilizing a community-based research participation model.

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