Cancer Statistics for Hispanics, 2003

Kathryn O’Brien, MPH; Vilma Cokkinides, PhD, MSPH; Ahmedin Jemal, DVM, PhD; Cheryll J. Cardinez, MSPH; Taylor Murray; Alicia Samuels, MPH; Elizabeth Ward, PhD; Michael J. Thun, MD, MS

ABSTRACT In this article, the American Cancer Society (ACS) provides estimates on the number of new cancer cases and deaths, and compiles health statistics on the US Hispanic population. The compiled statistics include cancer incidence, mortality, and behaviors relevant to cancer using the most recent data on incidence from the National Cancer Institute’s (NCI) Surveillance, Epidemiology, and End Results (SEER) Program, mortality data from the National Center for Health Statistics, and behavioral information from the Behavior Risk Factor Surveillance System (Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System [BRFSS], Youth Risk Behavior Surveillance System [YRBSS], and National Health Interview Survey [NHIS].) An estimated 67,400 new cases of cancer and 22,100 cancer deaths will occur among Hispanics in 2003. Hispanics have lower incidence and death rates from all cancers combined and from the four most common cancers (breast, prostate, lung and bronchus, and colon and rectum) than non-Hispanic whites. However, Hispanics have higher incidence and mortality rates from cancers of the stomach, liver, uterine cervix, and gallbladder, reflecting in part greater exposure to specific infectious agents and lower rates of screening for cervical cancer, as well as dietary patterns and possible genetic factors. Strategies for reducing cancer risk among Hispanics include further development of effective interventions to increase screening and physical activity, reductions in tobacco use and obesity, and the development and application of effective vaccines. (CA Cancer J Clin 2003;53:208–226.) © American Cancer Society, 2003.

INTRODUCTION

In 2000, approximately 35.3 million Hispanics comprised about 12.5% of the total United States population,¹ having increased from 9% of the population in 1990, making Hispanics the nation’s fastest growing minority group.² Hispanics are a heterogeneous group who, in America, trace their ancestry primarily to Mexico, Puerto Rico, Cuba and other countries in Central and South America. Furthermore, Hispanics may differ by degree of acculturation or socioeconomic status. Cancer occurrence and risk factors can vary among Hispanics because of regional, behavioral, or genetic differences. The chief objective of this report is to provide current data for Hispanics on incidence and mortality rates from cancer, and on several behaviors relevant to cancer.

MATERIALS AND METHODS

Data Sources

Incidence data from the period 1992 to 1999 were obtained from the NCI’s SEER Program, covering about 22% of the US Hispanic population.³ SEER first began coding Hispanic ethnicity in 1992. Mortality data from 1992 to 1999 were
obtained from the National Center for Health Statistics.\textsuperscript{4} Population data were obtained from the US Census Bureau.\textsuperscript{5} Cancer cases were classified according to the International Classification of Diseases for Oncology.\textsuperscript{6} Causes of death were coded and classified according to the International Classification of Diseases (ICD-9 and ICD-10).\textsuperscript{7,8} Data on behavioral risk factors were obtained from state and national population-based surveillance systems: the BRFSS,\textsuperscript{9} YRBSS,\textsuperscript{10} and NHIS.\textsuperscript{11}

Racial and ethnic data are collected and coded in accordance with the Office of Management and Budget directive, which defines ethnicity as “Hispanic origin” or “not of Hispanic origin.”\textsuperscript{12} Further classification of Hispanics into subgroups is not yet possible and would be the topic of special studies. The term “Hispanic” describes ethnicity only and does not account for potential racial differences. Therefore, throughout this report, comparisons are made between Hispanics, who may be of any race, and non-Hispanic whites, unless otherwise specified.

**Estimated Cancer Deaths**

To estimate the number of cancer deaths expected to occur in the United States in 2003, we used the underlying cause-of-death data from death certificates among Hispanics as reported to the National Center for Health Statistics. Using an autoregressive quadratic model\textsuperscript{13} on the recorded number of cancer deaths occurring annually from 1993 through 1999, we forecast the number of cancer deaths expected to occur in 2003. By 1993, all states were coding Hispanic ethnicity on death certificates, with the exception of Oklahoma, which did not begin coding ethnicity until 1997 and was therefore excluded from the forecast procedure.

**Estimated New Cancer Cases**

Although registration of new cancer cases in the United States is increasingly more complete, it still requires several years for complete counts of new cases to be compiled. Therefore, to estimate the number of cases for 2003, statistical procedures have been used as an acceptable alternative. We first estimated the number of new cancer cases occurring annually in the United States among Hispanics from 1992 through 1999 using the age-specific cancer incidence data collected by NCI’s SEER Program, coupled with population data reported by the US Census Bureau. Using the previously mentioned regression model\textsuperscript{13} on estimated cases from those previous years, we forecast the number of cases expected to be diagnosed in the United States in 2003.

**Other Statistics**

Trends in cancer incidence and mortality for selected cancers are based on data from 1992 through 1999. Cancer incidence and death rates are standardized to the 2000 US standard population and expressed per 100,000 persons. Annual percent changes (APC) obtained from SEER describe the average annual decrease (or increase) in cancer incidence or mortality rates from 1992 through 1999.\textsuperscript{3} For this report, we provide the decrease or increase only when the APC is significant ($P < .05$). Incidence and mortality rate ratios for Hispanics relative to non-Hispanic whites are provided for selected cancer sites. These ratios are calculated by dividing the Hispanic cancer rates by the non-Hispanic rates, thereby demonstrating the magnitude of incidence and mortality differences between the ethnicities for the selected sites. This report also provides recent prevalence estimates of behavioral factors related to cancer (ie, cigarette smoking, physical activity, obesity, use of cancer screening); these estimates are derived from national and state population-based surveys of adults or youths. Complex sampling techniques in these surveys assure random selection of participants, and appropriately weighted estimates can be produced using SUDAAN, a software package for the statistical analysis of correlated data.\textsuperscript{14} Therefore, the resulting estimates are considered representative of the noninstitutionalized civilian population.

**SELECTED FINDINGS**

**Expected Numbers of New Cancer Cases**

In 2003, about 67,400 new cancer cases are expected to be diagnosed among Hispanics (Figure 1).
According to these estimates, the most commonly diagnosed cancers among Hispanic men will be prostate cancer (27%), followed by cancers of the colon and rectum (12%), and lung and bronchus (7%). The most common cancers among Hispanic women will be breast (30%), colon and rectum (9%), and lung and bronchus (6%).

**Expected Numbers of Cancer Deaths**

Approximately 22,100 cancer deaths are expected to occur among Hispanics in 2003 (Figure 1). Lung cancer is the leading cause of cancer death among Hispanic men (22%), followed by colon and rectum (11%), and prostate cancers (10% each). Among Hispanic women, the leading cause of cancer death is breast cancer (16%), followed by lung (13%), and colon and rectum cancers (11%).

**Comparative Cancer Rates in Hispanics and Non-Hispanic Whites**

For the most common cancer sites, incidence and mortality rates are lower in Hispanics than non-Hispanic whites (Table 1). In contrast, rates are higher in Hispanics for cancers of the stomach, liver, uterine cervix, and gallbladder.

**Trends in Cancer Incidence and Mortality**

Figure 2 shows trends in cancer incidence and mortality rates among Hispanics for all sites combined, by gender. During the years 1992 to 1999, incidence rates decreased by 2.8% and 0.6% among males and females, respectively; mortality rates declined by 1.5% among males and 1.1% among females. Figure 3 depicts trends in incidence or mortality for selected cancer sites by gender. The annual percent change of each of these trends is given in Table 2.

**Female Breast**

Breast cancer is the most commonly diagnosed cancer among Hispanic women, with an estimated 11,000 cases diagnosed in 2003. Although breast cancer incidence was approximately 40%
lower among women of Hispanic origin than in non-Hispanic whites (Table 1) during the years 1992 to 1999, it was more frequently diagnosed at a later stage (Figure 4).\textsuperscript{15-19} This time period may be too early to reflect improvements in stage at diagnosis from increased use of mammography among Hispanics, who now have about the same percent of recent mammograms as non-Hispanic whites (Table 3). Breast cancer is the leading cause of cancer death among Hispanic women (unlike non-Hispanic white women, among whom lung cancer is the most common).\textsuperscript{20} Among Hispanic women, breast cancer mortality rates dropped 1.8\% on average per year from 1992 to 1999, a somewhat smaller decline than was seen among non-Hispanic white women (2.6\% per year) (Table 2).\textsuperscript{3}

\textbf{Colon and Rectum}

An estimated 7,000 Hispanic men and women are expected to be diagnosed with cancers of the colon and rectum in 2003. Colorectal cancer is the third most commonly diagnosed cancer in Hispanics. It is the third leading cause of cancer death among Hispanic women, but ranks second among Hispanic men, causing as many annual deaths as prostate cancer. Compared with non-Hispanic whites, from 1992 to 1999, Hispanics were less likely to be diagnosed with colon and rectum cancer at a localized stage (Figure 4). Although effective colorectal cancer screening methods are available, the current level of utilization is lower in Hispanics compared with other groups (Table 3). The death rates due to colorectal cancer in Hispanic men and women combined decreased 0.7\% each year during 1992 to 1999, compared with a 1.8\% annual decline among non-Hispanic whites (Table 2).\textsuperscript{3}

\textbf{Lung and Bronchus}

Lung cancer is the leading cause of cancer death among Hispanic men and the second lead-

\begin{table}[h]
\centering
\caption{Cancer Incidence and Mortality Rates and Ratios Among Hispanics and Non-Hispanics}
\label{tab:cancer-incidence-mortality-rates-ratios}
\begin{tabular}{llllllll}
\hline
 & \multicolumn{3}{c}{Male} & \multicolumn{3}{c}{Female} \\
 & Hispanic & Non-Hispanic & Ratio & Hispanic & Non-Hispanic & Ratio \\
\hline
\textbf{Incidence}\textsuperscript{†} & & & & & & & \\
Prostate & 120.5 & 159.2 & 0.8 & - & - & - \\
Female breast & - & - & - & 83.5 & 147.3 & 0.6 \\
Lung and bronchus & 42.0 & 81.5 & 0.5 & 22.2 & 54.0 & 0.4 \\
Colon and rectum & 43.8 & 64.1 & 0.7 & 29.4 & 47.2 & 0.6 \\
Stomach & 16.6 & 10.2 & 1.6 & 9.2 & 4.3 & 2.1 \\
Liver and intrahepatic & - & - & - & 5.0 & 2.4 & 2.1 \\
Bile duct & 12.0 & 5.9 & 2.0 & 5.0 & 2.4 & 2.1 \\
Uterine cervix & 1.2 & 0.8 & 1.5 & 3.4 & 1.3 & 2.6 \\
Gallbladder & - & - & - & 16.3 & 7.8 & 2.1 \\
\textbf{Mortality}\textsuperscript{§} & & & & & & & \\
Prostate & 21.6 & 31.6 & 0.7 & - & - & - \\
Female breast & - & - & - & 17.2 & 28.7 & 0.6 \\
Lung and bronchus & 36.9 & 81.7 & 0.5 & 13.7 & 43.3 & 0.3 \\
Colon and rectum & 16.4 & 26.2 & 0.6 & 10.3 & 18.3 & 0.6 \\
Stomach & 9.1 & 6.1 & 1.5 & 5.2 & 2.9 & 1.8 \\
Liver and intrahepatic & - & - & - & 4.3 & 2.6 & 1.7 \\
Bile duct & 9.4 & 5.6 & 1.7 & 4.3 & 2.6 & 1.7 \\
Uterine cervix & 0.7 & 0.5 & 1.4 & 1.7 & 0.9 & 1.9 \\
Gallbladder & - & - & - & 3.7 & 2.6 & 1.4 \\
\hline
\end{tabular}
\textsuperscript{†}Rates are per 100,000 persons; ratios calculated as Hispanic incidence (or mortality) divided by non-Hispanic incidence (or mortality).
\textsuperscript{‡}Rates are per 100,000 persons; ratios calculated as Hispanic mortality divided by non-Hispanic mortality.
\textsuperscript{§}Age adjusted to the year 2000 population standards; mortality rates calculated using SEER\textsuperscript{*} Stat software; rates include data from all states except Oklahoma due to incomplete death certificates.
\end{table}
ing cause of cancer death among Hispanic women. However, because of traditionally lower rates of cigarette smoking among Hispanics, lung cancer incidence and mortality rates were approximately 50% lower than those in non-Hispanic whites from 1995 to 1999 (Table 1). There was a significant 3.1% annual decrease in the rates of new lung cancer cases among Hispanic men and women combined. Death rates from lung cancer declined by 1.9% per year among Hispanic men, whereas the death rates for Hispanic women did not decrease significantly (Table 2). The decline in death rates among men most likely resulted from decreases in the prevalence of smoking over the past 30 years. Declines were not as pronounced in women because the smoking patterns of women lag behind those of men.

Prostate

Prostate cancer is the most commonly diagnosed cancer among Hispanic men. Although incidence rates during 1995 to 1999 among Hispanics were approximately 20% lower than the rates among non-Hispanic whites (Table 1), Hispanic men were diagnosed with a greater proportion of distant stage prostate cancer from 1992 to 1999 (Figure 4). Prostate cancer is the second leading cause of cancer death among Hispanic men causing as many deaths as colorectal cancer. The death rates from prostate cancer decreased by an average of 3.8% per year in Hispanic men, compared with an average annual decrease of 3.5% in white non-Hispanics (Table 2).

Cancer Sites With Higher Rates in Hispanics

Cancers of the stomach, liver, and uterine cervix are more common in developing countries, including countries in Central and South America. In the United States, the incidence and mortality rates of stomach, uterine cervix, liver, and gallbladder cancers are higher among Hispanics than non-Hispanic whites (Table 1) and are particularly high among first generation migrants to the United States.
In the United States, Hispanics experience 60% higher incidence rates and 50% higher mortality rates from stomach cancer compared with non-Hispanic whites (Table 1). Stomach cancer continues to be common throughout much of Central and South America, whereas it has become rare in the United States. There is, however, considerable variability in stomach cancer risk, even within Central and South America. Costa Ricans have very high rates, whereas Nicaraguans and Hondurans have lower rates. In general, mountainous or volca-
FIGURE 3
Hispanic Cancer Incidence Rates and Trends, 1991 to 1999, Continued

C. Hispanic Cancer Mortality, 1992 to 1999*, Males

D. Hispanic Mortality Trends, 1992 to 1999*, Females

* Age-adjusted to the year 2000 population standards; incidence and mortality rates calculated using SEER*Stat software; incidence rates include data from the following SEER registries: San Francisco, Connecticut, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, and Los Angeles, and mortality rates include data from all the states with the following exclusion due to incomplete death certificates in Oklahoma (1992 to 1997).
nic land, such as the Andes, displays high rates, whereas the low tropical lands display low rates. Variations in incidence of stomach cancer worldwide are related to prevalence of *Helicobacter pylori* infection and to diets rich in smoked foods, salted meat or fish, and pickled vegetables and low in fresh vegetables. H pylori infection is common in developing countries, including many countries in Central and South America. A study of *H pylori* prevalence rates in Colombia found that the prevalence of *H pylori* infection was about 50% by age 2, about 90% by age 9, and remained 90% in adulthood. In contrast, in a low risk area of Australia, infection rates were less than 5% in children, and the prevalence of infection in adults increased with age but peaked at about 40%. Although dietary patterns throughout Central and South America are diverse, studies have demonstrated an increased risk of stomach cancer associated with consuming highly salted foods in Puerto Rico and with consumption of chili peppers in Mexico.

Higher prevalence of *H pylori* infection has also been documented among Hispanics in the United States. Based on data from the third National Health and Nutritional Examination Survey (NHANES) (1998–1991), the age-adjusted prevalence of *H pylori* infection was 61.6% among Mexican Americans, 26.2% among non-Hispanic whites, and 52.7% among non-Hispanic African Americans. The prevalence of *H pylori* infection among foreign-born Mexican Americans was 68.2%, compared with 53.4% in US-born Mexican Americans. It is unclear to what extent dietary factors among Hispanics may play a role in the elevated stomach cancer risk, given that dietary patterns in the United States are not strongly associated with stomach cancer and studies comparing dietary patterns such as fruit and vegetable consumption between Hispanics and other population groups in the United States do not show consistent differences. From 1992 to 1999, among Hispanic men and women combined, stomach cancer incidence

| Cancer Site       | Male (% Change) | Female (% Change) | Both Sexes (% Change) |
|-------------------|-----------------|-------------------|-----------------------|
|                   | Hispanic        | Non-Hispanic      | Hispanic              | Non-Hispanic | Hispanic | Non-Hispanic |
| Lung and bronchus |                 |                   |                       |             |         |             |
| Incidence         | −4.0*           | −2.2*             | −2.2                  | 0.4         | −3.1*   | −0.9*       |
| Death             | −1.9*           | −1.8*             | −0.6                  | 1.0*        | −1.3*   | −0.4*       |
| Prostate          |                 |                   |                       |             |         |             |
| Incidence         | −3.4*           | −4.6*             | −3.8*                 | −3.5*       |         |             |
| Death             |                 |                   |                       |             |         |             |
| Female breast     |                 |                   |                       |             |         |             |
| Incidence         | −0.5            | 1.3*              |                       |             |         |             |
| Death             | −1.8*           | −2.6*             |                       |             |         |             |
| Colon and rectum  |                 |                   |                       |             |         |             |
| Incidence         | −0.3            | −1.0*             | −0.7                  | −0.3        | −0.4    | −0.6        |
| Death             | −0.6            | −2.1*             | −0.9                  | −1.6*       | −0.7*   | −1.8*       |
| Stomach           |                 |                   |                       |             |         |             |
| Incidence         | −2.7            | −2.8*             | −2.4                  | −1.5        | −2.5*   | −2.1*       |
| Death             | −3.6*           | −3.3*             | −2.6                  | −3.0*       | −3.1*   | −3.0*       |
| Liver and intrahepatic bile duct |     |                   |                       |             |         |             |
| Incidence         | 1.1             | 3.2*              | 5.7*                  | 4.8*        | 2.9     | 4.0*        |
| Death             | 1.6             | 2.3*              | 2.1*                  | 1.6*        | 2.0*    | 2.3*        |
| Cervix            |                 |                   |                       |             |         |             |
| Incidence         | −4.3*           | −2.0*             |                       |             |         |             |
| Death             | −4.4*           | −1.9*             |                       |             |         |             |

*The annual percent change is significantly different from zero (p < 0.05).
FIGURE 4
Stage at Diagnosis Distribution, by Hispanic Ethnicity, SEER, 1992 to 1999

Cancer Statistics for Hispanics, 2003
Liver

Hispanics experience twice the incidence rate and a 70% higher death rate from liver cancer compared with non-Hispanics (Table 1). Among Hispanic women, liver and intrahepatic bile duct cancer incidence rates increased 5.7% per year from 1992 to 1999, and mortality rates increased 2.1% per year; significant increases were not seen among Hispanic men (Table 2). There is a 10-fold variation in the incidence rates of liver cancer worldwide, with the highest incidence in Eastern Asia and Middle Africa and the lowest incidence in North America, Australia, and New Zealand. Incidence rates in the Caribbean and Central America are almost double those in the North America, while rates in South America are only slightly higher.\(^3\)

Liver cancer is strongly associated with chronic infection by hepatitis B virus (HBV) or hepatitis C virus (HCV).\(^36\) International studies have found significant correlations between incidence of liver cancer and the prevalence of hepatitis B antigen and antibodies to hepatitis C.\(^35\) Within Central and South America and the Caribbean, the prevalence of hepatitis B antigen varies, with high prevalence in parts of Brazil, Ecuador, and Venezuela.\(^37\) In the United States, studies of blood samples from NHANES III participants (1988 to 1994) found an age-adjusted prevalence of hepatitis B infection of 4.4% among Mexican Americans and 2.6% among non-Hispanic whites,\(^38\) and an age-adjusted prevalence of antibodies to hepatitis C of 2.1% among Mexican Americans and 1.5% among non-Hispanic whites.\(^39\) In contrast, however, a study of hepatitis B antigen positivity among pregnant women in four urban areas in the United States found a lower prevalence of hepatitis B antigen positivity (0.14%) among Hispanics compared with non-Hispanic whites (0.60%).\(^40\)

Infection with HBV is preventable through vaccination, but there is not yet a vaccine for HCV. In the United States, vaccination against

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**TABLE 3**

Cancer Screening Examinations,\(^*\) Adults, by ACS Guidelines, 2000 and 2001

| Cancer Type                        | % Hispanic | % White, Non-Hispanic | % African American, Non-Hispanic |
|-----------------------------------|------------|-----------------------|----------------------------------|
| Breast cancer, 2000               |            |                       |                                  |
| Mammogram†                        | 65.4       | 62.9                  | 66.7                             |
| Clinical breast exam (CBE)‡        | 65.1       | 68.8                  | 69.9                             |
| Mammogram and CBE§                 | 53.5       | 56.0                  | 54.8                             |
| Cervical cancer, 2000              |            |                       |                                  |
| Pap test|                           | 83.4       | 87.2                  | 88.8                             |
| Colon and rectum cancer, 2001      |            |                       |                                  |
| Fecal occult blood test¶           | 15.4       | 24.1                  | 21.6                             |
| Flexible sigmoidoscopy or colonoscopy# | 31.2   | 39.2                  | 35.3                             |
| Prostate cancer, 2001              |            |                       |                                  |
| Prostate-specific antigen test**   | 46.0       | 58.2                  | 57.6                             |
| Digital rectal exam††              | 41.4       | 57.4                  | 49.5                             |

*Based on median value of participating states (50 US states, District of Columbia, and Puerto Rico) with 50 or more respondents in a racial or ethnic group. Estimates exclude missing, don't know/not sure, or refused responses.

†A mammogram within the past year for women 40 and older.
‡A CBE within the past year for women 40 and older.
§Both a mammogram and CBE within the past year for women 40 and older.
¶A Pap test within the past three years for women 18 and older.
‖A fecal occult blood test using a home kit within the past year for adults 50 and older.
#A flexible sigmoidoscopy or colonoscopy within the past five years for adults 50 and older.
**A prostate-specific antigen test within the past year for men 50 and older.
††A digital rectal exam within the past year for men 50 and older.

Source: Behavioral Risk Factor Surveillance System Public Use Data File 2000, 2001, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2001, 2002.
hepatitis B is now recommended for all newborns, for all children under the age of 18 who have not been vaccinated, and for adult members of high risk groups (intravenous drug users, persons with multiple sexual partners, health care workers). Risk of hepatocellular carcinoma is particularly high among those infected with hepatitis B at birth. Therefore, screening of pregnant women is recommended, and newborns of infected women are given hepatitis B immune globulin and vaccinated within 12 hours after birth. Heavy alcohol intake and consumption of aflatoxin-contaminated grains are also risk factors for liver cancer. Most studies show lower rates of alcohol consumption among Hispanics compared with US whites, although Hispanics have a higher rate of mortality from cirrhosis of the liver.

**Uterine Cervix**

Women in Mexico, Central America, and South America experience approximately triple the incidence of and mortality rates from cervical cancer compared with women in the United States. Hispanic women residing in the United States have twice the incidence rate of and 1.4 times the mortality rate from cervical cancer compared with non-Hispanic whites (Table 1). The major cause of cervical cancer is chronic infection with human papillomavirus (HPV), especially types HPV 16 and HPV 18. HPV is the most common sexually transmitted infection in women worldwide, with prevalence ranging from 10 to 40%, depending on the population studied and method of detection. There is not, however, clear evidence for a correlation between incidence of invasive cervical cancer and prevalence of HPV infection or infection with HPV 16 or 18 among populations worldwide. Factors other than prevalence of HPV infection that may contribute to the divergence of invasive cervical cancer internationally include availability of cervical cancer screening, HPV type variants and environmental cofactors, including parity, use of oral contraceptives, tobacco smoking, infection with other sexually transmitted diseases, and dietary and nutritional factors.

It is unclear whether the increased incidence of cervical cancer among Hispanics compared with non-Hispanic whites is due to higher prevalence of HPV or oncogenic HPV types. A study conducted in New Mexico found that Hispanic women had a lower overall prevalence of HPV infection compared with non-Hispanic white women (9.7% versus 13.7%) but that the percent of infections that were of the 16/18 types were higher among Hispanics (61.5% versus 34.1%). A few studies have examined risks of HPV infection among Mexicans and Mexican Americans. One study found that, among Mexican American women in Arizona, those born in Mexico had almost a twofold increased risk of having an HPV infection compared with those born in the United States, even though they had a lower behavioral risk profile. In contrast, a study of women (90% Mexican or Mexican American) residing near the US-Mexico border found similar rates of HPV infection and infection with HPV 16 and 18 among US and Mexican residents. Lower utilization of Pap screening may have contributed to higher rates of cervical cancer among Hispanic women historically. The similarity of distributions of stage at diagnosis between Hispanic and non-Hispanic white women during the years 1992 to 1999 (Figure 4) may reflect increased use of cervical cancer screening by Hispanic women during the 1990s (see Risk Factor section). Cervical cancer incidence rates declined 4.3% per year from 1992 to 1999 among Hispanics, and mortality rates dropped 4.4% per year; these declines more than doubled the declines seen in non-Hispanic white women.

A promising approach to the primary prevention of cervical cancer is the development of a vaccine against HPV 16. Recently, a double-blind trial of a human HPV Type 16 vaccine among 2,392 young women found no cases of persistent HPV 16 infection or HPV 16-related cervical intraepithelial neoplasia among vaccine recipients, with 3.8 infections per 100 woman followed one year and nine cases of HPV 16-related cervical intraepithelial neoplasia in the placebo group after a median of 17 months of follow-up. Educational programs to reduce transmission of sexually trans-
mitted diseases through behavioral changes and use of condoms also have a role in primary prevention. Secondary prevention through cervical cancer screening is an important strategy that has the potential to reduce overall incidence and late stage diagnosis. Continued efforts to enhance the use of screening by Hispanics are an important part of the public health strategy to reduce the excess risk of cervical cancer incidence and mortality.

**Gallbladder**

Worldwide, the highest incidence rates of gallbladder cancer are found among Mexican Americans, and the highest mortality rates are in South America. Among those populations with elevated rates, women are diagnosed more often than men. In the United States, Hispanic females experience over twice the incidence compared with non-Hispanic white women and Hispanic men; among men, Hispanics have a 50% higher incidence rate (Table 1). An important risk factor for gallbladder cancer is chronic gallstones, which can result from hereditary factors affecting cholesterol secretion in the bile, and this genetic susceptibility may be more common among Hispanics. Obesity, hormonal factors relating to a high number of pregnancies, and a high caloric diet may also be associated with increased risk of gallbladder cancer. Hispanics are more likely to be obese or overweight than non-Hispanic whites (see section on risk factors). Furthermore, Hispanic women have a higher fertility rate compared with other racial/ethnic groups.

**Behavioral and Social Risk Factors**

In this section, current data on tobacco use, physical activity, overweight and obesity, and screening are presented in broad populations so as to provide a comparative snapshot and to point toward the need for further enhancing efforts in cancer control targeted at Hispanic subgroups. Variations in cancer risk factors or screening behaviors between Hispanics and other population groups may be due to cultural differences or socioeconomic factors, and within the Hispanic population, there may be large variations in health-related behaviors. Tobacco use is the most preventable cause of premature death in the United States and is responsible for about 30% of all cancer deaths. Most lung cancers, as well as a large fraction of cancers of the lip, oral cavity, pharynx, larynx, esophagus, pancreas, uterine cervix, urinary bladder, and kidney can be attributed to cigarette smoking.

Among adults aged 18 and older, Hispanics have a lower smoking prevalence than non-Hispanic whites. In 2002, approximately 22.5% of all adults were current cigarette smokers; among Hispanic adults, 15.2% were identified as current cigarette smokers. The percentage of Hispanic smokers has decreased since 1978 (Figure 5), although a slight increase is shown in the most recent period for males.

Hispanic youths are just as likely to try smoking, at least for one or two puffs (69.3%), as non-Hispanic youths (64.8%). However, only 7.3% of Hispanic youths smoke cigarettes frequently, while 17.2% of the white non-Hispanic youths report frequent smoking. Factors influencing the differing smoking habits may include cultural factors as well as the affordability and accessibility of cigarettes. Smoking prevalence among Hispanic youths who had smoked on one or more of the thirty days preceding the survey since 1991 is shown in Figure 6. The current smoking prevalence peaked in 1995 and 1997 for females and males, and significantly declined by 2001.

Although several statistics suggest that Hispanics smoke less than non-Hispanic whites, Hispanics should be a priority for smoking prevention programs since several factors may make Hispanics susceptible to increased smoking. Members of lower socioeconomic groups are more likely to smoke; one-fifth of all Hispanics live in poverty, which is almost twice the national poverty rate. Furthermore, in an effort to market to minority populations, tobacco companies promote and advertise their products disproportionately to certain racial/ethnic groups, including Hispanics, often with the use of cultural symbols and designs. Country of birth may also play a role, as Hispanics born in the United States are more likely to smoke than those who are foreign-
born. For cessation programs to succeed among Hispanics, they should be language appropriate, considerate of cultural values, and mindful of potential pressures facing Hispanics, such as a lack of routine medical care.

Obesity and Physical Activity

Obesity is associated with an increased risk of several chronic diseases, including cancers of the endometrium, breast, kidney, colon and rectum, liver, gallbladder, pancreas, and esophagus. Obesity is on the rise among Hispanics, particularly for Hispanic women. According to self-reported data from 1997 to 1998, 22.6% of Hispanics were obese, compared with 18.2% of non-Hispanic whites. Furthermore, among Hispanics, 66.2% of men and 56.6% of women were overweight, compared with 62.7% and 43.4% of non-Hispanic white men and women, respectively.

Studies have shown that participation in regular physical activity helps to control body weight and may decrease the risk of colon and breast cancers. In 2001, 35.8% of Hispanic adults did not have any form of leisure time physical activity, compared with only 22.9% of white non-Hispanic adults (Table 4). Among Hispanic high school students, 68.8% of the males and 52.4% of the females participated in vigorous physical activity on three or more days a week in 2001 (Table 5); these proportions were significantly lower than among non-Hispanic white high school students.

Use of Screening Tests

Screening tests can detect some types of cancer early, at a stage when the disease is more likely to be treated successfully. Early detection can actually prevent some cancers from occurring, through the identification and removal of precancerous lesions. Screening can greatly improve the chances of cure, extend life, reduce the extent of treatment needed, and improve quality of life for cancer patients.

While in the early 1990s, the prevalence of cancer screening was lower in Hispanics relative to non-Hispanic whites, from 1987 to 2000, screening proportions have become
more comparable (Figure 7). Among Hispanic women aged 40 and older, 65.4% reported receiving a mammogram in the past year, compared with 62.9% of non-Hispanic white women (Table 3). Although the prevalence of Hispanic women receiving Pap tests in the past three years (83.4%) was comparable to that of non-Hispanic white women (87.2%), low utilization has been associated with lack of insurance and recent immigrant status across all population groups. In addition to the higher risk for cervical cancer among Hispanic women, understanding such socioeconomic factors can allow for targeted intervention.

The implementation of screening programs, such as the National Breast and Cervical Cancer Early Detection Program of the Centers for Disease Control, has resulted in increased use of screening tests among women who would otherwise not have access to screening. Barriers to breast and cervical cancer screening among Hispanics include fear of cancer, embarrassment, or a lack of knowledge about cancer. However, cultural differences may not be as important as originally thought; lack of insurance and low income create greater obstacles to screening than does ethnicity.

The estimated percentage of Hispanics aged 50 and older being screened for colon and rectum cancer was low in 2001. Only 15.4% were estimated to have had a fecal occult blood test in the past year, compared with 24.1% of whites and 21.6% of African Americans; 31.2% of Hispanics were estimated to have had a sigmoidoscopy or colonoscopy in the past 5 years, compared with 39.2% of whites and 35.3% of African Americans. Less than one-half of Hispanic men received screening for prostate cancer, either through a prostate-specific antigen (PSA) test or a digital rectal exam (DRE). In comparison, at least 50% of white men had received a PSA test or DRE in the past year.

FIGURE 6

*Trends in the Percentage of Current Cigarette Smokers,* Hispanic High School Students, US, 1991 to 2000

*Smoked cigarettes on 1 or more of the 30 days preceding the survey.
Source: Youth Risk Behavior Surveillance System, 1991, 1993, 1995, 1997, 1999, 2001.
National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.
### TABLE 4

**Participation in Physical Activity,* Adults, by Race and Gender, US, 2001**

| Participation in Physical Activity | % Hispanic | % White, Non-Hispanic | % African American, Non-Hispanic |
|-----------------------------------|------------|-----------------------|----------------------------------|
| No leisure-time physical activity |            |                       |                                  |
| Total                             | 35.8       | 22.9                  | 33.2                             |
| Male                              | 32.5       | 20.5                  | 29.1                             |
| Female                            | 38.3       | 24.9                  | 38.8                             |
| Moderate physical activity†       |            |                       |                                  |
| Total                             | 43.6       | 47.9                  | 38.8                             |
| Male                              | 44.8       | 50.9                  | 41.4                             |
| Female                            | 40.6       | 45.2                  | 33.1                             |
| Vigorous physical activity‡       |            |                       |                                  |
| Total                             | 23.9       | 25.0                  | 21.2                             |
| Male                              | 28.3       | 30.6                  | 27.2                             |
| Female                            | 16.7       | 20.5                  | 15.1                             |

*Based on median value of participating states (50 US states, District of Columbia, and Puerto Rico) with 50 or more respondents in a racial or ethnic group. Estimates exclude missing, don’t know/not sure, or refused responses.
†Activity (such as brisk walking, bicycling, vacuuming, or gardening) that caused small increases in breathing or heart rate at least 30 minutes five times a week or activity (such as running, aerobics, or heavy yard work) that caused large increases in breathing or heart rate at least 20 minutes three times a week.
‡Activity (such as running, aerobics, or heavy yard work) that causes large increases in breathing or heart rate at least 20 minutes three or more times per week.

Source: Behavioral Risk Factor Surveillance System Public Use Data Tape 2001, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2002.

### TABLE 5

**Participation in Physical Activity Among Hispanic and Non-Hispanic High School Students in the United States, by Gender, 2001**

| Participation in Physical Activity | Hispanic (%) | White, Non-Hispanic (%) | African American, Non-Hispanic (%) |
|-----------------------------------|--------------|-------------------------|-----------------------------------|
| Participation in vigorous physical activity* | 60.5         | 66.5                    | 59.7                              |
| Total                             |              |                         |                                   |
| Males                             | 68.8         | 73.7                    | 72.4                              |
| Females                           | 52.4         | 59.8                    | 47.8                              |
| Participation in moderate physical activity† | 22.1         | 27.3                    | 20.1                              |
| Total                             |              |                         |                                   |
| Males                             | 25.9         | 29.8                    | 23.7                              |
| Females                           | 18.5         | 24.7                    | 16.5                              |
| No vigorous or moderate physical activity‡ | 11.2         | 8.2                     | 12.9                              |
| Total                             |              |                         |                                   |
| Males                             | 9.3          | 6.2                     | 8.4                               |
| Females                           | 13.0         | 10.2                    | 16.9                              |

*Activities that caused sweating and hard breathing for ≥20 minutes on ≥3 of the 7 days preceding the survey.
†Activities that did not cause sweating or hard breathing for ≥30 minutes on ≥5 of the 7 days preceding the survey.
‡Had not participated in either vigorous physical activity for ≥20 mins or moderate physical activity for ≥30 minutes on any of the 7 days preceding the survey.

Source: Youth Risk Behavior Surveillance System, 2001, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.
DATA LIMITATIONS AND FUTURE CHALLENGES

Estimates of the expected numbers of new cancer cases and cancer deaths should be interpreted with caution. These estimates may vary considerably over time, particularly for less common cancer sites. Unanticipated changes may occur that are not captured by our modeling effort. The estimates of new cancer cases are based on incidence rates for the geographic locations that participate in the SEER Program and, therefore, may not be representative of the United States as a whole. For these reasons, we discourage the use of the estimates to track changes in the number of cancer cases and deaths over time. The recorded numbers of cancer deaths and death rates from the National Center for Health Statistics and cancer incidence rates from SEER are generally the preferred data sources for tracking cancer trends, even though these data are three and four years old, respectively, at the time that the estimates are calculated.

Data on cancer incidence and mortality rates in Hispanics have only become available recently. Uniform coding of ethnicity in SEER registries began in 1992; many states began reporting Hispanic origin on death certificates in 1984, but not all states did so until 1997. In SEER registries, Hispanic ethnicity is coded according to medical records or through a match to a Spanish surname list. This method may be less accurate than using self-reported ethnicity and may result in undercounting Hispanics. Mortality data for Hispanics should be interpreted with caution because of potential inconsistencies in reporting ethnicity on death certificates. Furthermore, “Hispanic” is a term that encompasses a wide range of people, with varying cancer risks and behaviors. Because data do not exist for specific groups within the Hispanic category (ie, Cubans, Puerto Ricans, Mexicans), statistics regarding these groups cannot be presented.

Behavioral data used in this report were obtained from BRFSS, YRBSS, and NHIS surveys that rely on participants’ self-reported information. Results using BRFSS data are only representative of the civilian population.
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