American Cancer Society®

Cancer Facts & Figures
for Hispanics/Latinos   2018-2020

Contents

This publication attempts to summarize current scientific information about cancer. Except when specified, it does not represent the official policy of the American Cancer Society.

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Overview

Introduction

According to estimates from the US Census Bureau, 57.5 million Americans, or 18% of the total population in the continental US and Hawaii, identified as Hispanic or Latino in 2016.[1] In addition, more than 3 million Hispanic Americans live in Puerto Rico.[2] The terms "Hispanic" and "Latinx/o/a" are used to refer to a person of Hispanic origin. The word Hispanic is a socially and politically constructed US federal designation currently defined in national and state reporting systems as a separate concept from race; thus, persons of Hispanic origin may self-identify as any race. Latinx/o/a is a self-designated term of ethnicity. In this document, Hispanic and Latinx/o/a are used interchangeably without preference or prejudice.

Hispanics are the largest and youngest minority group in the US and are rapidly increasing in population size. The Hispanic population is expected to double over the next four decades, driven almost entirely by an increase in births rather than by immigration.[1] While approximately one-third of Hispanics in the US were foreign-born (i.e., born outside the US and its territories, including Puerto Rico) in 2016, the proportion is expected to drop to less than one-quarter by 2060. Immigration patterns have also shifted substantially since the early 2000s; over the past decade, migration declined by 6% from Mexico, but increased by 25% from the Central American countries of El Salvador, Guatemala, and Honduras.[3]

The US Hispanic population is concentrated in the West and South (Figure 1), with more than half of all Hispanics residing in California (27%), Texas (19%), and Florida (9%).[2] Nationally, the majority of US Hispanics are of Mexican origin (63.2%), followed by Puerto Rican (9.5%), Cuban (3.9%), Salvadoran (3.8%), and Dominican (3.3%),[4] although the distribution varies substantially by state.

Figure 1. Hispanic Population Distribution as a Percent of Total County Population

Percent
- More than 50.0
- 25.0 to 50.0
- 18.1 to 24.9
- 5.0 to 18.0
- Less than 5.0
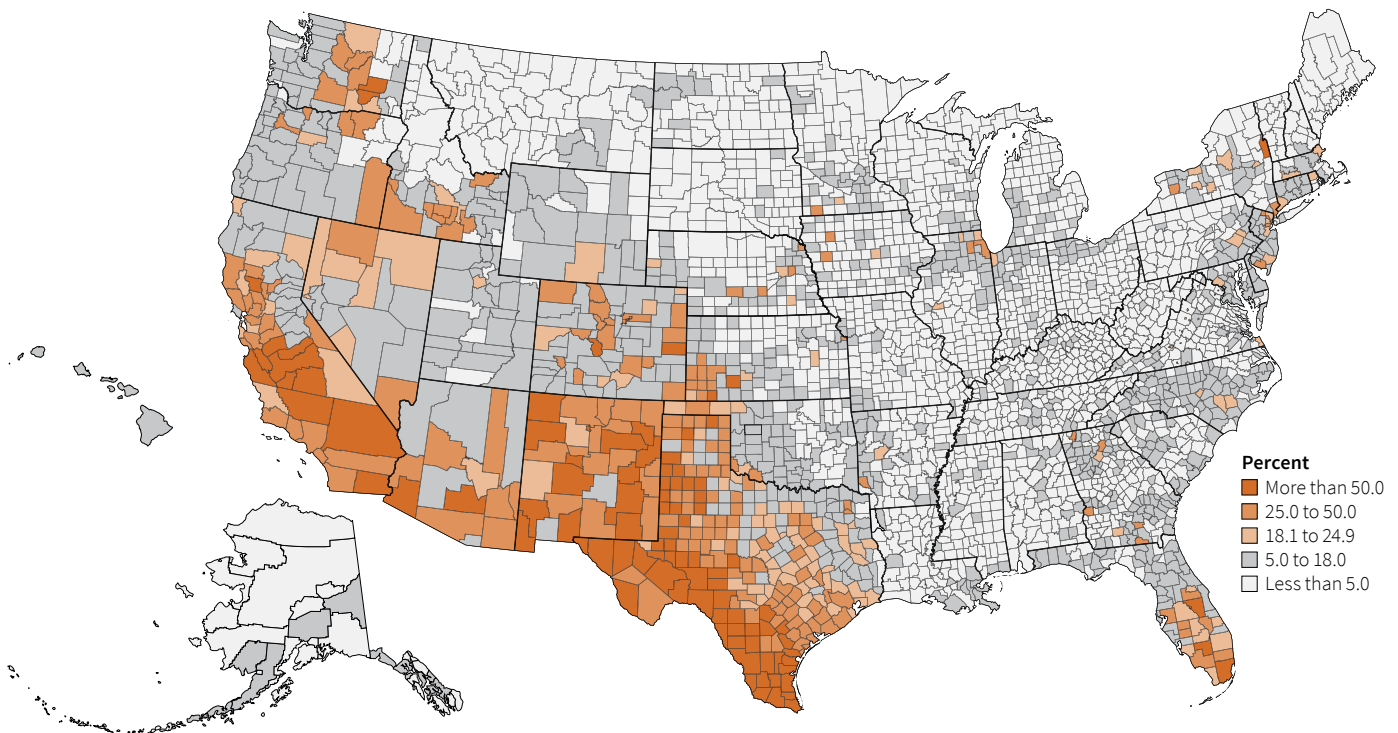
Source: US Census Bureau, Population Estimates, July 1, 2016. Released 2017.

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For example, Mexicans comprise more than 80% of the Hispanic population in both Texas and California, but only 15% in Florida, where more than half of the Hispanic population identifies as Cuban or Puerto Rican.

This report summarizes statistics on cancer occurrence, risk factors, and screening for Hispanics in the continental US and Hawaii, as well as incidence and mortality for the US territory of Puerto Rico, where 99% of the population identifies as Hispanic. It is intended to provide information to community leaders, public health and health care workers, and others interested in cancer prevention, early detection, and treatment for Hispanics. It is important to note that most cancer data in the US are reported for Hispanics as an aggregate group, masking important differences between Hispanic subpopulations according to nativity status (i.e., foreign- versus US-born), degree of acculturation, and country of origin.

What Is Cancer?

Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death. Cancer is caused by external factors, such as tobacco, infectious organisms, and an unhealthy diet, and internal factors, such as inherited genetic mutations, hormones, and immune conditions. These factors may act together or in sequence to cause cancer. Ten or more years often pass between exposure to external factors and detectable cancer. Treatment options for cancer include surgery, radiation, chemotherapy, hormone therapy, immunotherapy, and targeted therapy.

Can Cancer Be Prevented?

Among all racial/ethnic groups combined, an estimated 42% of cancer cases and 45% of cancer deaths in the US could potentially be prevented with the adoption of healthier lifestyles.[5] Specifically, about 1 in 5 cancer cases is attributable to smoking; a similar proportion

Table 1. Probability (%) of Developing Invasive Cancer during Selected Age Intervals by Race/Ethnicity and Sex, US, 2013-2015*

		<50 years		50+ years		All ages	
		Hispanic (%)	NH White (%)	Hispanic (%)	NH White (%)	Hispanic (%)	NH White (%)
All cancer types†	Male	2.6 (1 in 39)	3.8 (1 in 26)	36.3 (1 in 3)	40.3 (1 in 2)	36.1 (1 in 3)	39.9 (1 in 3)
	Female	4.6 (1 in 22)	6.2 (1 in 16)	32.3 (1 in 3)	36.6 (1 in 3)	34.6 (1 in 3)	39.2 (1 in 3)
Breast	Female	1.5 (1 in 65)	2.1 (1 in 48)	8.7 (1 in 12)	11.8 (1 in 8)	9.9 (1 in 10)	13.2 (1 in 8)
Colon & rectum	Male	0.3 (1 in 372)	0.4 (1 in 248)	4.5 (1 in 22)	4.3 (1 in 23)	4.5 (1 in 22)	4.3 (1 in 23)
	Female	0.3 (1 in 380)	0.4 (1 in 270)	3.7 (1 in 27)	3.8 (1 in 26)	3.9 (1 in 26)	4.0 (1 in 25)
Kidney & renal pelvis	Male	0.2 (1 in 497)	0.2 (1 in 410)	2.2 (1 in 45)	2.1 (1 in 48)	2.3 (1 in 43)	2.2 (1 in 46)
	Female	0.2 (1 in 628)	0.2 (1 in 647)	1.3 (1 in 76)	1.1 (1 in 91)	1.4 (1 in 70)	1.2 (1 in 83)
Liver & intrahepatic bile duct	Male	0.1 (1 in 1,206)	<0.1 (1 in 2,089)	2.4 (1 in 42)	1.2 (1 in 87)	2.3 (1 in 43)	1.1 (1 in 89)
	Female	<0.1 (1 in 3,037)	<0.1 (1 in 3,708)	1.2 (1 in 87)	0.5 (1 in 215)	1.1 (1 in 87)	0.5 (1 in 212)
Lung & bronchus	Male	0.1 (1 in 1,557)	0.2 (1 in 615)	4.6 (1 in 22)	7.4 (1 in 14)	4.4 (1 in 23)	7.0 (1 in 14)
	Female	0.1 (1 in 1,454)	0.2 (1 in 555)	3.5 (1 in 28)	6.7 (1 in 15)	3.5 (1 in 29)	6.5 (1 in 15)
Prostate	Male	0.1 (1 in 772)	0.2 (1 in 457)	10.9 (1 in 9)	11.2 (1 in 9)	10.4 (1 in 10)	10.6 (1 in 9)
Stomach	Male	0.1 (1 in 1,074)	<0.1 (1 in 2,166)	1.6 (1 in 64)	0.9 (1 in 117)	1.6 (1 in 64)	0.8 (1 in 119)
	Female	0.1 (1 in 1,111)	<0.1 (1 in 3,176)	1.1 (1 in 89)	0.4 (1 in 233)	1.2 (1 in 85)	0.4 (1 in 227)
Thyroid	Male	0.1 (1 in 768)	0.2 (1 in 408)	0.4 (1 in 255)	0.5 (1 in 190)	0.5 (1 in 200)	0.7 (1 in 137)
	Female	0.7 (1 in 139)	1.0 (1 in 104)	1.1 (1 in 90)	1.1 (1 in 95)	1.8 (1 in 56)	2.0 (1 in 51)
Uterine cervix	Female	0.3 (1 in 346)	0.3 (1 in 353)	0.5 (1 in 185)	0.3 (1 in 340)	0.8 (1 in 123)	0.6 (1 in 177)
Uterine corpus	Female	0.3 (1 in 316)	0.3 (1 in 347)	2.3 (1 in 43)	2.8 (1 in 36)	2.6 (1 in 39)	3.0 (1 in 34)

NH: Non-Hispanic. *For those who are free of cancer at beginning of each age interval. †Excludes basal cell and squamous cell skin cancers and in situ cancers except urinary bladder. NOTE: Percentages and "1 in" numbers may not be equivalent due to rounding. The probabilities presented here are based on the SEER registry areas and may not be representative of the probabilities for all mainland Hispanics or Puerto Rico. Please see section on Factors that Influence Cancer Statistics among Hispanics, page 36, for more information.

Source: Devcan: Probability of Developing or Dying of Cancer Software, Version 6.7.6.[6]

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Table 2. Leading Causes of Death among Hispanics and Non-Hispanic Whites, US, 2016

	Hispanic				NH White			
	Rank	Number of deaths	Percent of total deaths	Death rate*	Rank	Number of deaths	Percent of total deaths	Death rate*
Cancer	1	39,263	21	110.8	2	466,467	22	160.7
Heart diseases	2	37,799	20	116.5	1	500,631	23	168.5
Accidents (unintentional injuries)	3	15,711	8	31.3	4	121,641	6	53.8
Cerebrovascular diseases	4	10,283	5	32.3	5	107,491	5	36.1
Diabetes	5	8,546	5	25.0	7	53,399	3	18.5
Alzheimer's disease	6	6,833	4	24.4	6	97,779	5	31.8
Chronic liver disease & cirrhosis	7	6,141	3	14.7	12	29,432	1	11.0
Chronic lower respiratory diseases	8	5,287	3	17.3	3	135,268	6	46.0
Nephritis, nephrotic syndrome & nephrosis	9	3,775	2	11.5	10	35,246	2	11.9
Intentional self-harm (suicide)	10	3,668	2	6.7	9	36,531	2	17.0
All causes		188,254	100	528.6		2,133,463	100	748.3

NH: Non-Hispanic. Data exclude deaths in Puerto Rico. *Rates are per 100,000 and age adjusted to the 2000 US standard population. NOTE: Death rates are not directly comparable to those published in prior years due to updated population denominator data.
Source: National Center for Health Statistics, Centers for Disease Control and Prevention, 2018.

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is attributable to the combined effects of excess body weight, alcohol consumption, unhealthy diet, and physical inactivity. Many of the cancers caused by infectious organisms are also avoidable, either by preventing the infection through vaccination or behavioral changes, or by treating the infection. For more information on cancer risk factors, see page 19. Screening can prevent colorectal and cervical cancers through the detection and removal of precancerous growths, and can also detect cancers of the breast, colorectum, cervix, and lung (among current or former smokers) at an early stage, when treatment is usually more successful. For more information on cancer screening, see page 27.

What Is the Risk of Developing or Dying of Cancer?

The risk of being diagnosed with cancer increases with age because most cancers require many years to develop. Hispanic men and women are less likely to be diagnosed with cancer than non-Hispanic whites overall, although risk varies by cancer type (Table 1). About 1 in 3 Hispanic men and women will be diagnosed with cancer in their lifetime, while the lifetime probability of dying from cancer among Hispanics is about 1 in 5 for men and 1 in 6 for women.[6] Unlike non-Hispanic whites, cancer is the leading cause of death among Hispanics, accounting for 21% of deaths in 2016 (Table 2).

How Many New Cancer Cases and Deaths Are Expected in 2018?

New cases: About 67,400 new cancer cases in Hispanic men and 81,700 cases in Hispanic women are expected to be diagnosed in 2018 in the United States (Figure 2, page 4). These estimates do not include carcinoma in situ (noninvasive cancer) of any site except urinary bladder. They also exclude basal cell and squamous cell skin cancers, because these cases are not required to be reported to cancer registries. Cancers of the prostate (21%), colorectum (12%), and lung (8%) are the most commonly diagnosed cancers in Hispanic men, whereas breast (29%), thyroid (8%), and uterine corpus (8%) cancers are most common in women.

Deaths: Among Hispanics, about 22,300 men and 20,400 women are expected to die from cancer in 2018 (Figure 2, page 4). Lung cancer is expected to account for about 16% of cancer deaths in Hispanic men, followed by liver (12%) and colorectal (11%) cancers. Among Hispanic women, breast cancer will be the leading cause of cancer death (16%), followed by cancers of the lung (13%) and colorectum (9%). However, among US women overall, lung cancer is the leading cause of cancer death.
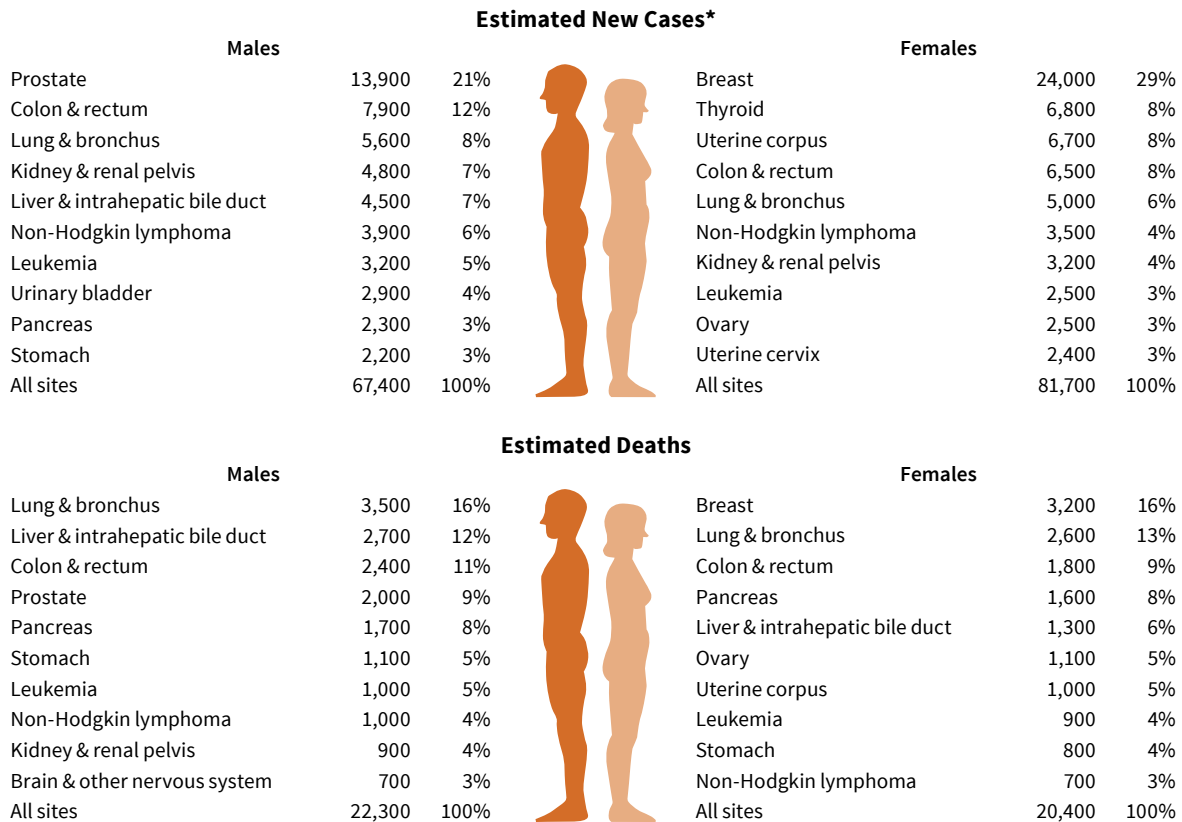
How Have Cancer Rates Changed over Time?

Trends in cancer incidence rates: Cancer incidence data for Hispanics have been available since 1992; however, trends are somewhat difficult to interpret because of the changing composition of the population due to immigration. Declining rates in males coinciding with slowly increasing rates in females is resulting in a convergence over time (Figure 3), although rates remained about 14% higher in males during 2011-2015 (Table 3, page 6). During the most recent 10 years of data (2006-2015), incidence rates among Hispanic men decreased by an average of 2.3% per year, similar to declines among non-Hispanic white men; among Hispanic women, rates increased by 0.4% per year but may have leveled off in more recent years, comparable to the trend in non-Hispanic whites.[7] Longer-term trends in cancer incidence rates among Hispanics for selected cancers are shown in Figure 4, page 8.

Trends in cancer death rates: Although the decline in the cancer death rate in the US overall began in 1991, it did not begin in Hispanics until the late 1990s (Figure 3). Death rates for all cancers combined among Hispanics decreased from 2007 to 2016 by an average of 1.6% per year in men and by 1.0% per year in women, very similar to declines among non-Hispanic whites. Trends for selected cancers are shown in Figure 4, page 8.

Major Differences in the Cancer Burden by Race and Ethnicity

Incidence and Death Rates

Table 3, page 6 shows differences in cancer incidence and mortality rates between Hispanics and the other broadly defined major racial/ethnic groups in the US for selected cancers. Although there is large variation within these groups, cancer rates in Hispanics are most similar to those in Asians/Pacific Islanders,

who have the lowest rates overall. Compared to non-Hispanic whites, Hispanics have lower rates of the four most common cancers (female breast, colorectal, lung, and prostate) but higher rates of infection-related cancers (stomach, liver, cervical) and gallbladder cancer (Table 3, page 6), generally reflecting cancer risk in Latin American countries of origin.[8]

However, long-term US residents and descendants of Hispanic immigrants have rates for some cancer types that approach or surpass those of non-Hispanic whites due to acculturation,[9-11] which is the adoption of attitudes, values, customs, beliefs, and behaviors of the host country. The effects of acculturation can be associated with both positive and negative influences on health, and the extent to which it occurs varies by sex and Hispanic subgroup.[12, 13] Compared to their country of origin, immigrants may have improved access to health care and preventive services, but may also adopt unhealthy behaviors such as smoking, excessive alcohol consumption, and decreases in dietary quality. The average body mass index among Mexicans, for example, is highest among those who are US-born, intermediate among foreign-born long-term residents, and lowest among foreign-born persons who have lived in the US 15 years or less.[14] The effects of acculturation can lead to striking differences in cancer outcomes. One study found that overall cancer death rates among US-born Hispanic men in Texas were about 60% higher than those among their foreign-born counterparts (201 per 100,000 versus 125, respectively, during 2008-2012).[11] Even first-generation Hispanics often show evidence of acculturation, with higher cancer rates than those in their country of origin for the most common cancers.[9, 15]

Consequently, the cancer pattern in the US territory of Puerto Rico is more similar to that for non-Hispanic whites than other US Hispanics combined (Table 4, page 7). A notable exception is lung cancer, for which the rate in Puerto Rico is one-third that of non-Hispanic whites and two-thirds that of other US Hispanics. In contrast, prostate and colorectal cancer incidence rates among island Puerto Rican men were 44% and 18% higher, respectively, than those in non-Hispanic whites during 2011-2015.

Stage at Diagnosis and Survival

Stage of disease describes the extent or spread of cancer at the time of diagnosis. Local stage describes an invasive cancer that is confined to the organ of origin, whereas regional stage disease has spread into surrounding organs, tissues, or nearby lymph nodes and distant-stage cancer has spread to distant organs and/or distant lymph nodes. Hispanics are generally less likely than non-Hispanic whites to be diagnosed with cancer at a localized stage, particularly for melanoma of the skin and female breast cancer (Figure 5, page 10).

Figure 3. Trends in Incidence and Death Rates for All Cancers Combined among Hispanics, US, 1990-2016
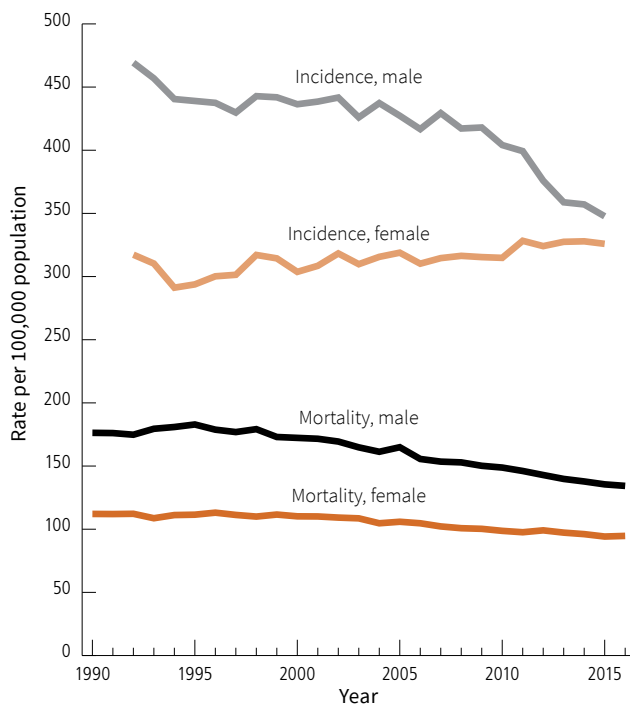
Rates are age adjusted to the 2000 US standard population. Incidence rates were adjusted for delays in case reporting. Deaths from Louisiana, New Hampshire and Oklahoma were excluded from mortality rates because these states did not collect data on Hispanic origin for some years.

Sources: Incidence – Surveillance, Epidemiology, and End Results (SEER) Program, National Cancer Institute, 2018. Mortality – National Center for Health Statistics, Centers for Disease Control and Prevention, 2018.

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Table 3. Incidence and Mortality Rates* for Selected Cancers by Race and Ethnicity, US, 2011-2016

	Hispanic/Latino	Non-Hispanic White	Non-Hispanic Black	Asian and Pacific Islander	American Indian and Alaska Native†
INCIDENCE, 2011-2015					
All sites					
Male	377.6	505.5	549.1	298.9	418.4
Female	329.9	438.4	407.0	290.3	386.9
Breast (female)	93.0	130.1	126.5	92.9	100.9
Colon & rectum					
Male	41.7	44.6	55.2	36.1	49.8
Female	28.8	34.2	40.7	26.4	40.1
Gallbladder					
Male	1.2	0.7	1.4	1.1	2.0
Female	2.5	1.1	2.0	1.5	2.9
Kidney & renal pelvis					
Male	21.1	22.5	25.4	11.1	29.9
Female	12.2	11.4	13.1	5.1	17.4
Liver & intrahepatic bile duct					
Male	19.7	10.3	17.6	19.9	20.9
Female	7.8	3.6	5.2	7.4	9.5
Lung & bronchus					
Male	39.2	74.3	85.4	44.5	69.3
Female	24.6	57.4	49.2	27.8	55.7
Prostate	91.6	101.7	179.2	56.0	73.1
Stomach					
Male	12.5	7.8	14.1	13.7	11.2
Female	7.7	3.5	7.7	8.0	6.1
Thyroid					
Male	5.4	8.2	3.9	7.3	4.6
Female	20.6	23.0	14.0	21.8	15.3
Uterine cervix	9.6	7.1	9.2	6.0	9.2
MORTALITY, 2012-2016					
All sites					
Male	138.2	197.3	239.8	119.1	178.8
Female	96.4	141.8	160.4	87.0	126.8
Breast (female)	14.3	20.6	28.9	11.3	14.5
Colorectum					
Male	14.4	16.6	24.5	11.7	19.5
Female	8.8	11.9	16.0	8.4	13.1
Gallbladder					
Male	0.6	0.4	0.7	0.6	1.1
Female	1.2	0.6	1.0	0.7	1.6
Kidney & renal pelvis					
Male	5.0	5.7	5.6	2.7	8.2
Female	2.3	2.4	2.3	1.1	3.8
Liver & intrahepatic bile duct					
Male	13.3	8.3	13.6	13.9	14.6
Female	6.0	3.4	4.8	5.8	7.5
Lung & bronchus					
Male	25.3	54.1	63.9	30.3	42.7
Female	13.1	37.9	33.3	17.4	29.9
Prostate	15.9	18.1	39.8	8.6	19.1
Stomach					
Male	6.5	3.3	8.4	6.8	7.0
Female	4.0	1.7	3.9	4.2	3.7
Thyroid					
Male	0.6	0.5	0.4	0.5	0.5
Female	0.7	0.4	0.6	0.6	0.4
Uterine cervix	2.6	2.1	3.6	1.7	2.8

Hispanic origin is not mutually exclusive from Asian/Pacific Islander or American Indian/Alaska Native. *Rates are per 100,000 population and age adjusted to the 2000 US standard population. Rates exclude data from Puerto Rico. †Data based on Indian Health Service Contract Health Service Delivery Area counties.

Source: Incidence – North American Association of Central Cancer Registries, 2018. Mortality – National Center for Health Statistics, Centers for Disease Control and Prevention, 2018.

Table 4. Cancer Incidence and Death Rates for Selected Cancers, Puerto Rico, 2011-2015

	Incidence	Mortality
All sites		
Male	412.8	152.7
Female	325.7	94.6
Breast (female)	93.2	17.9
Colorectum		
Male	52.5	19.7
Female	35.1	12.2
Kidney & renal pelvis		
Male	11.4	2.6
Female	5.5	1.1
Liver & intrahepatic bile duct		
Male	12.8	9.2
Female	4.2	3.6
Lung & bronchus		
Male	24.7	19.8
Female	12.3	8.9
Prostate	146.6	26.7
Stomach		
Male	10.6	6.8
Female	6.3	3.5
Uterine cervix	12.9	2.5

Rates are per 100,000 and age adjusted to the 2000 US standard population. NOTE: Caution should be used when comparing mortality rates for Puerto Rico with those for other US Hispanics because of different data years.

Sources: Incidence – North American Association of Central Cancer Registries, 2018. Mortality – National Center for Health Statistics, Centers for Disease Control and Prevention, 2017.

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A common measure for cancer survival is relative survival, which is the percentage of cancer patients alive at a specified time following diagnosis (typically 5 years), divided by the percentage expected to be alive in the absence of cancer based on normal life expectancy. However, because life expectancy data have historically been unavailable for Hispanics, a different measure, called cause-specific survival, is used in this report. It is the percentage of people who have not died from their cancer within 5 years of diagnosis. Survival statistics do not represent the proportion of people who are cured because cancer death can occur more than 5 years after diagnosis.

Figure 6, page 11, presents five-year cause-specific survival in Hispanics and non-Hispanic whites, which are similar for most cancers. The largest difference is for melanoma of the skin; among men, about 88% of non-Hispanic whites survive 5 years after diagnosis, compared to only 79% of Hispanics. This survival disparity may be due to a higher proportion of thicker tumors and later stage at diagnosis among Hispanics.[16] In addition to stage, other factors that cause disparities in cancer survival include differences in the use of screening tests and access to timely, high-quality treatment. Less accuracy of patient vital status follow-up, which artificially inflates survival, is an issue for populations with a large proportion of foreign-born individuals, like Hispanics.[17] Survival comparisons may also be influenced by differences in the age structure between populations because, unlike incidence and mortality, survival statistics herein are not adjusted for age. For more information, see Factors that Influence Cancer Statistics among Hispanics, page 36.

Major Cancer Sites

Female Breast

New Cases

Breast cancer is the most commonly diagnosed cancer among Hispanic women, with an estimated 24,000 cases expected to be diagnosed in 2018. The breast cancer incidence rate increased in Hispanic women from 2006 to 2015 (0.4% annually) while remaining stable in non-Hispanic whites, but remains 29% lower in Hispanics (Table 3). Within the Hispanic population, studies have shown that the risk of breast cancer is even lower in those who are foreign-born.[18] This pattern is largely attributed to a higher prevalence of reproductive factors associated with reduced breast cancer risk among Hispanics, including younger age at first birth, higher parity, and less use of menopausal hormone therapy.[19] Historically, Hispanic women were more likely than non-Hispanic whites to initiate breastfeeding, which

Figure 4. Trends in Incidence and Death Rates among Hispanics for Selected Cancers, US, 1990-2016
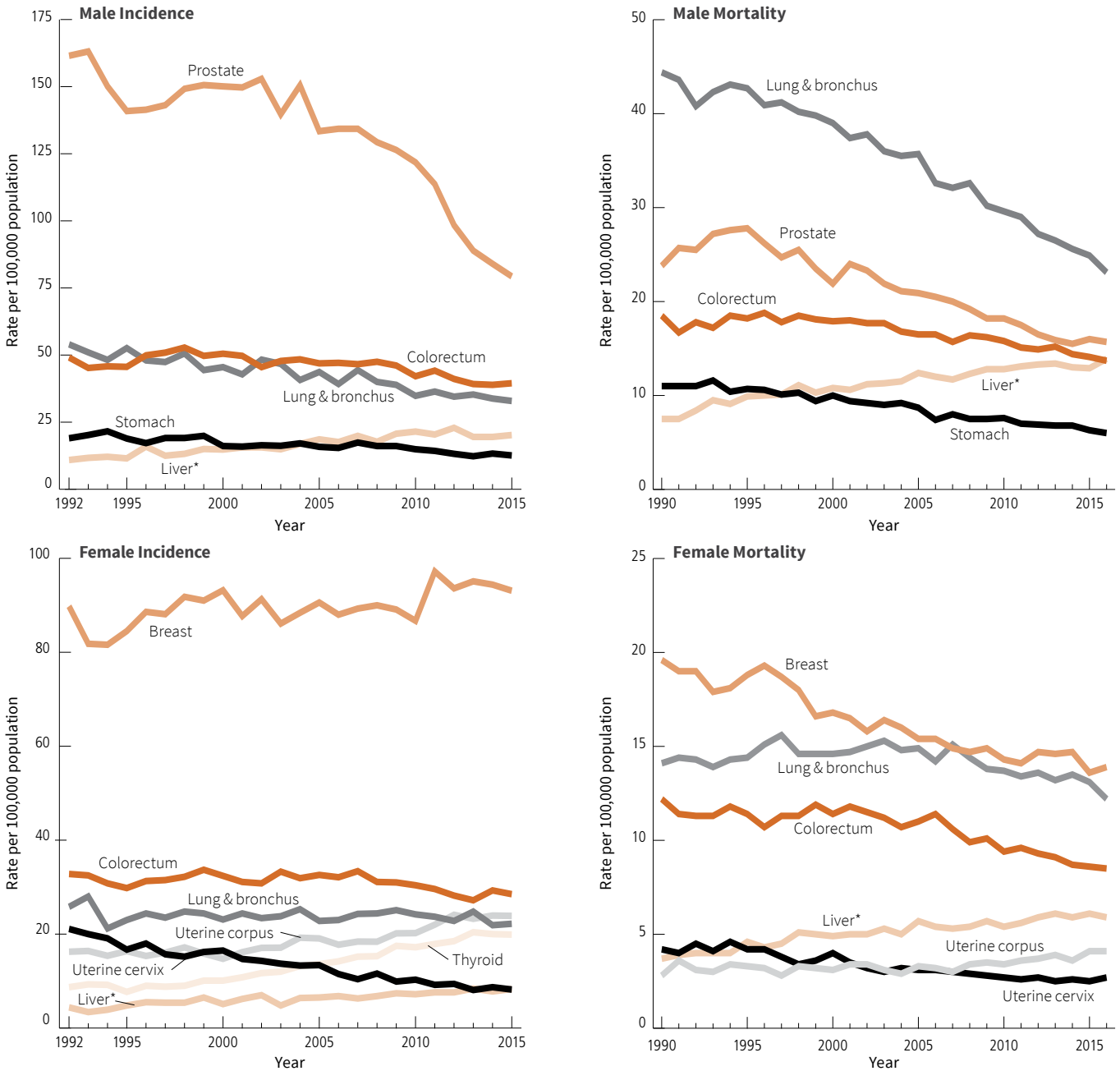
Male Incidence

Rate per 100,000 population

Prostate, Colorectum, Lung & bronchus, Stomach, Liver*

Male Mortality

Rate per 100,000 population

Lung & bronchus, Prostate, Colorectum, Liver*, Stomach

Female Incidence

Rate per 100,000 population

Breast, Colorectum, Lung & bronchus, Uterine corpus, Thyroid, Uterine cervix, Liver*

Female Mortality

Rate per 100,000 population

Breast, Lung & bronchus, Colorectum, Liver*, Uterine corpus, Uterine cervix

Rates are age adjusted to the 2000 US standard population. Incidence rates were adjusted for delays in case reporting. Deaths from Louisiana, Oklahoma and New Hampshire were excluded because these states did not collect data on Hispanic origin for some years. *Includes intrahepatic bile duct.

Sources: Incidence – Surveillance, Epidemiology, and End Results (SEER) Program, National Cancer Institute, 2018. Mortality - National Center for Health Statistics, Centers for Disease Control and Prevention, 2018.

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also reduces risk, although contemporary patterns are similar.[20] Lower mammography screening prevalence in Hispanics may also contribute to lower breast cancer incidence rates because of less detection of asymptomatic lesions in unscreened women.[21, 22]

Prevention and Early Detection

Potentially modifiable breast cancer risk factors include alcohol consumption, postmenopausal hormone use, physical inactivity, and weight gain after the age of 18 and/or being overweight/obese (postmenopausal

breast cancer).[23] Studies indicate that the relationship between excess body weight and breast cancer risk is generally similar between Hispanics and non-Hispanic whites after accounting for differences in menopausal hormone therapy use and tumor subtype, although further research in this area is needed.[24]

Screening mammography can detect breast cancer at an early stage, when treatment is usually less extensive and more likely to be successful. For more information on mammography, see page 27.

Deaths

Breast cancer is the leading cause of cancer death among Hispanic women, with an estimated 3,200 deaths expected in 2018. From 2007 to 2016, breast cancer death rates decreased by 1.1% per year among Hispanic women and by 1.8% per year among non-Hispanic white women. However, declines in Hispanic women younger than 50 years of age appear to have stabilized in recent years.[25]

Stage Distribution and Survival

Breast cancer is less likely to be diagnosed at a local stage in Hispanic women than in non-Hispanic white women, even after accounting for differences in age, socioeconomic status, and method of detection.[26, 27] During 2011-2015, 57% of breast cancers among Hispanic women were diagnosed at a local stage, compared to 65% among non-Hispanic white women (Figure 5, page 10). Lower rates of mammography utilization and delayed follow-up of abnormal screening results or self-discovered breast abnormalities among Hispanic women likely contribute to this difference.[28, 29]

Hispanic women are less likely than non-Hispanic whites to receive appropriate and timely breast cancer treatment,[30] although intervention programs that help enhance communication between the surgeon, oncologist, and patient have been shown to reduce disparities.[31] Hispanic women are also more likely to be diagnosed with tumors that are larger and are hormone receptor negative, both of which are more difficult to treat.[32, 33] However, it is uncertain whether Hispanic women have a survival disadvantage after accounting for these factors,[33-35] especially given larger difficulties in securing Hispanic patient vital status in population-based data (see section Factors that Influence Cancer Statistics among Hispanics, page 36). Five-year cause-specific survival for local, regional, and distant-stage breast cancer in Hispanic women is 96%, 85%, and 32%, respectively.

Visit cancer.org for additional information about breast cancer in the latest edition of *Breast Cancer Facts & Figures*.

Colon and Rectum

New Cases

An estimated 7,900 Hispanic men and 6,500 Hispanic women are expected to be diagnosed with cancer of the colon or rectum (colorectum) in 2018. Colorectal cancer (CRC) incidence rates among Hispanics are 7% and 16% lower, respectively, than those among non-Hispanic whites (Table 3, page 6), and have been declining since at least the mid-1990s. From 2006 to 2015, incidence rates decreased by 1.6% annually among Hispanics, similar to trends among non-Hispanic whites, although rates in recent years may be leveling off among women.[7] Notably, incidence rates are not declining in all states; for example, rates remain stable among Hispanic men in California, possibly in part due to underutilization of screening.[36]

Prevention and Early Detection

Modifiable factors that increase CRC risk include obesity (especially abdominal), high consumption of red or processed meat, physical inactivity (colon only), cigarette smoking, excess alcohol consumption, low calcium intake, and very low intake of fruits and vegetables.[37] Hereditary and personal history factors that increase risk include type 2 diabetes, chronic inflammatory bowel disease (e.g., ulcerative colitis or Crohn's disease), certain inherited syndromes (e.g., Lynch syndrome), and a personal or family history of adenomas or CRC.[38-41] Notably, Hispanics are disproportionately affected by excess body weight and type 2 diabetes (for more information on obesity and diabetes, see page 21 and page 23, respectively).

Figure 5. Stage Distribution for Selected Cancers in Hispanics and Non-Hispanic Whites, US, 2011-2015

● Hispanic   ● Non-Hispanic white
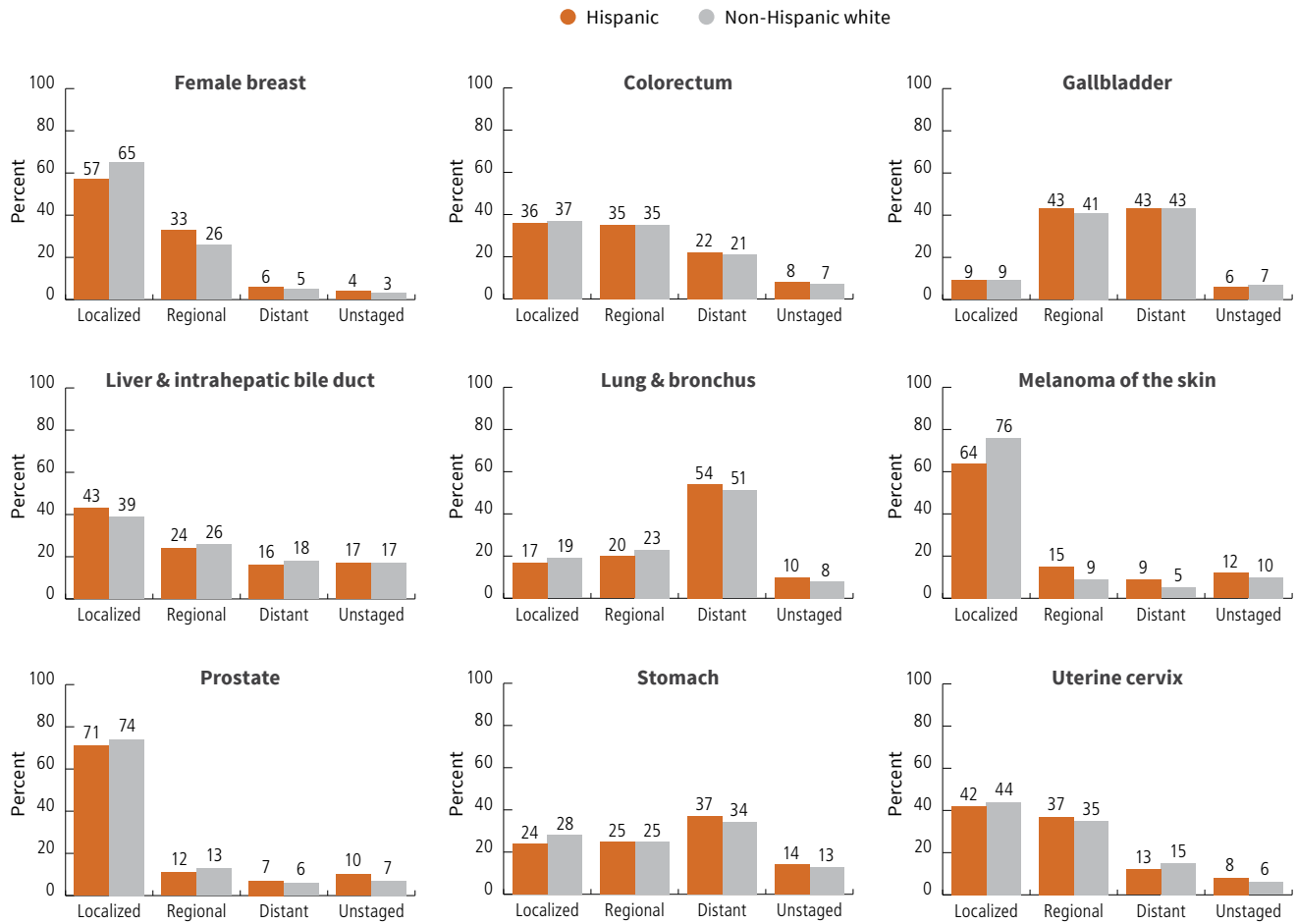
Percentages may not total 100 due to rounding. Data exclude Puerto Rico.
Source: North American Association of Central Cancer Registries, 2018.

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The detection and removal of adenomatous polyps through screening contributes to the prevention of CRC and is recommended to begin earlier for groups at increased risk, such as those with a family history of CRC or advanced adenomas in one or more first-degree relatives.[42] CRC screening rates are lower among Hispanics compared to non-Hispanic whites. For more information on CRC screening, see page 27.

Deaths

About 2,400 Hispanic men and 1,800 Hispanic women are expected to die from CRC in 2018. CRC is the third-leading cause of cancer death among both Hispanic men and women. From 2007 to 2016, death rates decreased by about 2% per year among Hispanics, similar to

declines among non-Hispanic whites. Hispanic men and women have CRC death rates that are 13% and 26% lower, respectively, than those in non-Hispanic whites, although there are striking disparities by geography and nativity status. For example, within California, the death rate in US-born Mexican men is nearly double that of their foreign-born counterparts (21 deaths per 100,000 versus 12, respectively, during 2008-2012).[10]

Stage Distribution and Survival

Five-year cause-specific survival among Hispanics for CRC diagnosed at a localized stage is 91%, declining to 71% and 16% for those diagnosed at regional and distant stages, respectively. A similar proportion of Hispanics and non-Hispanic whites are diagnosed

with localized disease (36% and 37%, respectively) (Figure 5), despite lower rates of screening and less access to timely medical care among Hispanics.[21]

Visit cancer.org for additional information about colorectal cancer in the latest edition of *Colorectal Cancer Facts & Figures.*

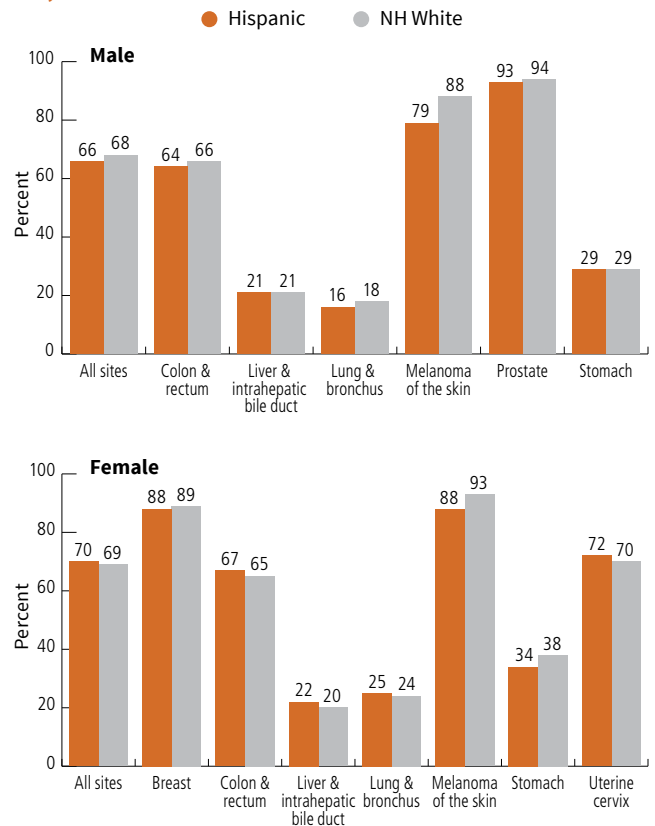## Lung and Bronchus

New Cases

About 5,600 Hispanic men and 5,000 Hispanic women are expected to be diagnosed with cancer of the lung and bronchus (lung) in 2018. Lung cancer incidence rates among Hispanics are about half those of non-Hispanic whites (Table 3, page 6) because of traditionally lower cigarette smoking prevalence and because Hispanic smokers are less likely to smoke daily and more likely to smoke fewer cigarettes overall.[43] Some studies have suggested lung cancer susceptibility may also differ by race/ethnicity, particularly at low levels of smoking,[44, 45] although in one study among women the differences in risk were largely reduced after fully adjusting for socioeconomic and clinical factors.[46]

From 2006 to 2015, lung cancer incidence rates in men declined by 2.0% annually among Hispanics, similar to declines among non-Hispanic whites. Although data from SEER registries suggest that rates among Hispanic women were stable over this time period, a recent report based on more complete population coverage reported a decline of about 1% annually over the past five years, similar to the trend in non-Hispanic white women.[7] Notably, lung cancer incidence rates among young Hispanic and non-Hispanic white women now exceed those among young men due to the steeper declines among men.[47]

Prevention and Early Detection

Cigarette smoking is the major risk factor for lung cancer, accounting for about 80% of lung cancer deaths in the US among all races/ethnicities combined.[5] Most lung cancers could be prevented by increasing cessation among adult smokers and decreasing smoking initiation among adolescents. After 10 years

Figure 6. Five-year Cause-specific Survival Rates (%), US, 2008-2014

● Hispanic   ● NH White

Male

Site	Hispanic	NH White
All sites	66	68
Colon & rectum	64	66
Liver & intrahepatic bile duct	21	21
Lung & bronchus	16	18
Melanoma of the skin	79	88
Prostate	93	94
Stomach	29	29

Female

Site	Hispanic	NH White
All sites	70	69
Breast	88	89
Colon & rectum	67	65
Liver & intrahepatic bile duct	22	20
Lung & bronchus	25	24
Melanoma of the skin	88	93
Stomach	34	38
Uterine cervix	72	70

NH: Non-Hispanic. Survival is unadjusted for age and based on cases diagnosed in the SEER 18 areas (excluding the Alaska Native Registry) from 2008 to 2014, followed through 2015. NOTE: Hispanic survival rates should be interpreted with caution. Please see section on Factors that Influence Cancer Statistics among Hispanics, page 36, for more information. **Source:** Surveillance, Epidemiology, and End Results (SEER) Program, National Cancer Institute, 2018.

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of cessation, the risk of lung cancer in former smokers is about half the risk in continuing smokers.[48] While smoking prevalence in Hispanics overall is substantially lower than in non-Hispanic whites, in Puerto Ricans living in the States, it is currently similar (for more information on smoking, see page 19). Screening with low-dose spiral computed tomography has been shown to reduce mortality among high-risk smokers.[49] For information about lung cancer screening, see page 29.

Deaths

Among Hispanics, about 3,500 lung cancer deaths in men and 2,600 in women are expected to occur in 2018. Lung cancer is the leading cause of cancer death among Hispanic men and the second-leading cause

among Hispanic women. Lung cancer death rates within Hispanic subpopulations vary substantially by country of origin, particularly among men, reflecting differences in historical smoking patterns. For example, in one study in Florida, lung cancer death rates in Cuban men, who have the heaviest smoking history among Hispanic subgroups, were nearly 50% higher than those in Puerto Rican men during 2008-2012 (49 per 100,000 versus 33, respectively).[50]

From 2007 to 2016, death rates for lung cancer declined by 3.5% per year among Hispanic men, very similar to declines among non-Hispanic white men, and by 1.4% per year among Hispanic women, compared to 2.3% per year among non-Hispanic white women. The steeper decline among men reflects earlier and larger reductions in smoking compared to women, who took up smoking in large numbers about 20 years after men.

Stage Distribution and Survival

Most patients with lung cancer are diagnosed at an advanced stage. Only 17% of Hispanics are diagnosed with localized disease (Figure 5, page 10), for which the 5-year cause-specific survival is 63%, dropping to 34% and 6% for regional and distant stage disease, respectively. Similar to non-Hispanic whites, Hispanic women have higher 5-year lung cancer survival than Hispanic men (25% versus 16%, respectively; Figure 6, page 11), partly because women are more frequently diagnosed at an early stage. However, women have higher survival rates than men for every stage of diagnosis.

Prostate

New Cases

Prostate cancer is the most commonly diagnosed cancer among Hispanic men, with about 13,900 new cases expected in 2018. Among the major racial/ethnic groups in the United States, Hispanic men have intermediate prostate cancer incidence rates that are slightly lower than those in non-Hispanic whites (92 versus 102 per 100,000, respectively) (Table 3, page 6). Prostate cancer incidence rates decreased by about 6% per year in both Hispanics and non-Hispanic whites from

2006 through 2015, although declines have accelerated in both groups in recent years,[7] likely reflecting recommendations against routine PSA screening by the US Preventive Services Task Force in 2008 for men 75 and older and in 2012 for all ages. For more information on prostate cancer screening, see page 28.

Prevention and Early Detection

The only well-established risk factors for prostate cancer are increasing age, African ancestry, certain inherited genetic conditions (e.g., Lynch syndrome), and a family history of the disease. Increasing evidence suggests that obesity may be associated with an increased risk of aggressive disease.[51] Currently, no organization recommends routine prostate-specific antigen (PSA) testing for early prostate cancer detection. The American Cancer Society recommends that men who might benefit from testing have an opportunity to make a shared decision with their health care provider about whether to undergo screening. For more information on prostate cancer screening, see page 28.

Deaths

An estimated 2,000 deaths from prostate cancer are expected among Hispanic men in 2018. The death rate during 2012-2016 was slightly lower in Hispanic men (15.9 per 100,000) than in non-Hispanic white men (18.1) (Table 3, page 6). However, a Florida study reported substantial variation within the Hispanic subpopulations, with rates among Dominicans twice those of Mexicans, Puerto Ricans, and non-Hispanic whites.[50] From 2007 to 2016, the death rate decreased among Hispanics by 2.7% per year and among non-Hispanic whites by 2.1% per year.

Stage Distribution and Survival

About 83% of prostate cancer cases in Hispanics versus 87% of those in in non-Hispanic whites are diagnosed at a localized or regional stage (Figure 5, page 10), for which 5-year cause-specific survival is similar in both groups (98% for localized and 96% regional stage). Five-year cause-specific survival for distant-stage disease declines to 35% among Hispanics and 30% among non-Hispanic whites.

Cancer Sites with Higher Rates among Hispanics

While Hispanics have comparatively low rates for the most common cancers, they have disproportionately high rates of cancers that are associated with infectious agents (e.g., cancers of the liver, stomach, and uterine cervix) and of gallbladder cancer compared to non-Hispanic whites. Except for liver cancer, incidence and mortality for these cancers are generally higher in Latin America than in the US.[52, 53]

Liver and Intrahepatic Bile Duct

New Cases

In 2018, approximately 6,500 Hispanics will be diagnosed with liver and intrahepatic bile duct (liver) cancer, with more than two-thirds of cases occurring in men. Similar to other racial/ethnic minority groups, Hispanics have liver cancer incidence rates that are nearly double those in non-Hispanic whites (Table 3, page 6). Recent studies have suggested that acculturation plays a complex role in the disproportionate burden of liver cancer among Hispanic men. While US-born Hispanic men have higher liver cancer incidence rates than their foreign-born counterparts, rates are similar among Hispanic women, regardless of nativity.[54] The long-term rise in liver cancer incidence appears to be tapering off in Hispanic men; from 2006 to 2015, rates were stable in Hispanic men but increased annually by 2.8% in Hispanic women and by 3.0% and 4.0% among non-Hispanic white men and women, respectively. A recent analysis indicates that overall rates for all races combined may be approaching a peak.[55]

Prevention

Chronic infection with hepatitis C virus (HCV) and/or hepatitis B virus (HBV) substantially increases the risk of developing liver cancer. Hispanics who have chronic HCV infection may be particularly vulnerable to developing cirrhosis (scarring of the liver that can promote liver cancer development).[56] Although primary prevention of infection is achievable through vaccination only for HBV, treatment of chronic HBV and/or HCV infection may reduce the risk of developing liver cancer.[57, 58]

Transmission of both infections is potentially preventable through public health measures, such as screening of blood, organ, tissue, and semen donors and needle/syringe exchange programs. In addition, one-time screening for chronic HCV infection is recommended for individuals born between 1945 and 1965. For more information about HBV and HCV, see page 24.

Chronic HCV infection is a more common cause of liver cancer than chronic HBV infection in both the US (among all races/ethnicities combined) and Latin America, with the exception of the Andean region.[52, 59] Exposure to aflatoxin (a poison produced by a fungus that can grow in foods stored in moist, warm conditions) further increases liver cancer risk among individuals with chronic HBV/HCV infection and is also an important risk factor independent of HCV/HBV infection in some Latin American countries such as Mexico.[60]

Although chronic HBV/HCV infection is the strongest risk factor for liver cancer, a larger proportion of cases in the US among all races/ethnicities combined are due to more prevalent risk factors such as excess body weight, heavy alcohol use, smoking, and metabolic disorders.[5, 61] However, the causes of liver cancer among Hispanics likely differ substantially by sex, birthplace, and subgroup. For example, while overall chronic HCV prevalence is similar between non-Hispanic whites and Hispanics,[62] one study found that Puerto Ricans living in the continental US or Hawaii had substantially higher chronic HCV infection prevalence than other Hispanic subgroups (for more information about HCV infection, see page 24).[63] A recent study found that liver cancer likely associated with the chronic HCV infection epidemic among the 1945-1965 birth cohort disproportionately burdens Puerto Rican men living in New York.[64] In addition, obesity and type 2 diabetes prevalence among Hispanics have increased over the past several decades, particularly among US-born Mexicans and Puerto Ricans born in the continental US or Hawaii, and are currently higher than those in non-Hispanic whites (for more information about obesity and diabetes, see page 21 and page 23, respectively).[14, 65]

Deaths

About 4,000 liver cancer deaths are expected to occur among Hispanics in 2018, with liver cancer ranking as the second-most common cause of cancer death in Hispanic men. From 2007 to 2016, liver cancer death rates increased by about 1.4% annually in Hispanics and by 2.5% annually in non-Hispanic whites. Disparities in liver cancer mortality by Hispanic nativity largely mirror those for incidence due to the disease's high fatality rate.[10, 11, 50]

Stage Distribution and Survival

Five-year liver cancer survival among Hispanics is about 21%, similar to that among non-Hispanic whites (Figure 6, page 11). About 43% of cases among Hispanics are diagnosed at a localized stage, for which 5-year survival is only 34%.

Stomach

New Cases

In 2018, approximately 3,900 Hispanics in the US will be diagnosed with stomach cancer. The stomach cancer incidence rate in Hispanic men is more than 60% higher than in non-Hispanic white men, and among women the rate in Hispanics is double, similar to the disparity for other racial/ethnic minority groups (Table 3, page 6). Although incidence rates decreased by about 1.5% per year in Hispanics and non-Hispanic whites from 2006 to 2015, recent analyses suggest increasing incidence in young adults.[66, 67] Importantly, Hispanics have a higher risk of early-onset stomach cancer (age at diagnosis younger than 50 years) than non-Hispanic whites, non-Hispanic blacks, and Asians/Pacific Islanders.[68]

Prevention

Prevention strategies for reducing stomach cancer risk include not smoking; reducing consumption of alcohol, foods preserved with salt, and processed meat; and reducing *Helicobacter pylori (H. pylori)* prevalence through improved hygiene practices.[69, 70] Some studies have shown that fruits and non-starchy vegetables, particularly allium vegetables (e.g., garlic, onions, leeks), protect against stomach cancer.[69]

Although chronic infection with *H. pylori* is the strongest known risk factor for stomach cancer,[71, 72] screening for the infection is not recommended in countries such as the US because of limited evidence of benefit at the population level in low-incidence countries and due to concerns regarding antibiotic resistance and other potential negative effects.[73] The prevalence of *H. pylori* infection is higher in lower-income countries and among individuals of lower socioeconomic status. In one study, *H. pylori* infection in the US was about three times higher among Mexicans than among non-Hispanic whites.[74] For more information about *H. pylori*, see page 24.

Deaths

An estimated 1,900 Hispanic men and women will die from stomach cancer in 2018. Similar to incidence trends, death rates decreased from 2007 to 2016 by 3% per year in Hispanic men and non-Hispanic whites and by about 2% per year in Hispanic women.

Stage Distribution and Survival

Five-year stomach cancer survival in Hispanics is 29% among men and 34% among women (Figure 6, page 11), largely reflecting the high proportion of late-stage diagnoses. Most cases (62%) among Hispanics are diagnosed at a regional or distant stage (Figure 5, page 10), for which 5-year survival is 33% and 4%, respectively.

Uterine Cervix

New Cases

In 2018, 2,400 Hispanic women in the US will be diagnosed with cancer of the uterine cervix, more commonly referred to as cervical cancer. The cervical cancer incidence rate among US Hispanic women is nearly 40% higher than among non-Hispanic whites (Table 3, page 6). Incidence rates in Hispanic and non-Hispanic white women have declined for decades, but appear to have stabilized in recent years.[7]

Prevention

Cervical cancer is caused by persistent infection with certain types of human papillomavirus (HPV). Primary prevention is available through vaccination, which protects against the most common types of cancer-causing HPV. Among adolescents ages 13-17, HPV vaccination is higher in Hispanics than in non-Hispanic whites (for more information about HPV vaccination, see page 25). Cervical cancer can also be prevented through the removal of precancerous lesions detected via screening (for more information about cervical cancer screening, see page 27). Smoking increases the risk of both persistent HPV infection and cervical cancer and accounts for 1 in 5 new cervical cancer cases and deaths in the US among all races/ethnicities combined.[5]

Deaths

About 600 Hispanic women will die from cervical cancer in 2018. Death rates decreased by 2.3% per year in Hispanics and were stable in non-Hispanic whites from 2007 to 2016. Despite steady declines, death rates in Hispanic women during 2012-2016 remained 26% higher than those in non-Hispanic whites (Table 3, page 6). Notably, cervical cancer mortality rates among women in Mexico and Central and South America are more than threefold those among women in the US, largely due to less access to screening and higher prevalence of HPV infection.[7]

Stage Distribution and Survival

The proportion of Hispanic women with cervical cancer who are diagnosed with localized disease is slightly lower than that in non-Hispanic whites (42% versus 44%, respectively). Five-year survival for cervical cancer is 72% among Hispanic women and 70% among non-Hispanic whites (Figure 6, page 11).

Gallbladder

New Cases

Gallbladder cancer is one of the few cancers that occurs more often in women than in men. An estimated 1,000 Hispanic women will be diagnosed with gallbladder cancer in 2018. In the US, incidence rates in Hispanic women are higher than those of men and women in every racial/ethnic group except American Indian/Alaska Native women, who have similar rates (Table 3, page 6). Reasons for the high rates in Hispanic women are not well-understood, but may include inherited and/or other factors associated with gallbladder disease development,[75-77] such as gallstone formation. Incidence rates of gallbladder cancer decreased by 1.2% per year in Hispanics and were stable in non-Hispanic whites from 2006 to 2015.

Prevention

Potentially modifiable factors that increase risk of gallbladder cancer include excess body weight and use of hormone replacement therapy.[75, 78, 79]

Deaths

About 500 gallbladder cancer deaths in Hispanic men and women are expected to occur in 2018. From 2007 to 2016, death rates declined by 2.6% and 1.7% per year among Hispanics and non-Hispanic whites, respectively.

Stage Distribution and Survival

Gallbladder cancer has nonspecific symptoms that typically result in a late stage at diagnosis and poor survival.[77] Five-year cause-specific survival among Hispanics for all stages combined is about 23%.

Cancer in Children and Adolescents

Overview

The types of cancer that most commonly occur in children (ages 0-14) and adolescents (ages 15-19) are different from those in adults. Risk factors for cancer in childhood and adolescence are not well understood. Some known causes include genetic changes that can be passed down from parent to child, radiation exposure, and certain viral infections. For reasons that are not clearly understood, childhood cancer (herein also referred to as pediatric cancer) is generally more common in economically developed than developing countries.[80]

New Cases

An estimated 2,700 Hispanic children (ages 0-14) in the US will be diagnosed with cancer in 2018, accounting for about 2% of cancer cases in Hispanics. In contrast, childhood cancer accounts for 0.5% of new cancer cases in non-Hispanic whites because of differences in the age distribution; children account for 27% of the Hispanic population, compared with 16% of the non-Hispanic white population.[2] From 2006 to 2015, incidence rates for childhood and adolescent cancer increased, on average, by 0.8% and 1.8% per year, respectively, among Hispanics and by 0.8% and 0.9% per year among non-Hispanic whites.

Among Hispanic children, leukemia is the most common cancer, followed by cancers of the brain/central nervous system and lymphoma (Table 5), whereas among adolescents, cancers of the brain/nervous system are the most common, followed by leukemia and germ cell tumors. Although incidence rates for most cancer types are slightly lower in Hispanics than non-Hispanic whites, rates are higher in Hispanics for leukemia and germ cell tumors for reasons that remain largely unknown. Hispanic children and adolescents have higher rates of leukemia than all other racial and ethnic groups in the US, nearly double those of non-Hispanic black children, who experience the lowest rates (Figure 7, page 18).

Deaths

An estimated 300 to 400 Hispanic children younger than 15 years of age will die from cancer in 2018. Childhood cancer is the second-leading cause of death among both Hispanic and non-Hispanic white children ages 1-14, following accidents. Among adolescents, cancer is the fourth-leading cause of death among Hispanics and the third-leading cause among non-Hispanic whites. Death rates for all cancers combined declined from 2007 to 2016 by 1% to 2% per year among both Hispanic and non-Hispanic white children and adolescents.

Signs and Symptoms

Childhood cancers often have nonspecific symptoms. Parents should ensure that children have regular medical checkups and be alert to any unusual signs or symptoms that persist. These include an unusual mass or swelling; unexplained paleness or loss of energy; a sudden tendency to bruise; localized pain or limping; unexplained fever or illness; frequent headaches, often with vomiting; sudden eye or vision changes; and excessive, rapid weight loss.

Survival

Over the past 30 years, there have been substantial improvements in 5-year survival for most childhood cancers,[25] largely attributable to advances in treatment and the high proportion of patients participating in clinical trials. However, some childhood cancers continue to have lower survival rates, and survival in general among Hispanics remains lower than among non-Hispanic whites for all cancers combined and for many cancers. Five-year cause-specific survival for all cancers combined among children and adolescents diagnosed during 2008-2014 was 83% among Hispanics and 87% among non-Hispanic whites. The largest survival disparities are for brain/other nervous system tumors among children (67% in Hispanics versus 79% in non-Hispanic whites) and for leukemia

Table 5. Childhood and Adolescent Cancer Incidence Rates and Rate Ratios Comparing Hispanics to Non-Hispanic Whites, US, 2011-2015

	Ages 0-14 years			Ages 15-19 years		
	Hispanic	**NH White**	**Rate Ratio**	**Hispanic**	**NH White**	**Rate Ratio**
All sites*	179.9	195.4	0.92	253.6	284.1	0.89
Leukemia	62.6	52.2	1.20	44.8	32.5	1.38
Lymphoid leukemia	48.6	40.4	1.20	27.3	15.6	1.75
Acute myeloid leukemia	8.4	7.1	1.17	10.2	9.9	1.03
Brain & other central nervous system*	40.1	54.8	0.73	50.1	60.9	0.82
Astrocytomas	14.0	22.5	0.62	9.8	16.3	0.60
Lymphomas	22.3	22.1	1.01	39.0	59.3	0.66
Hodgkin lymphoma	5.8	5.5	1.06	22.5	37.6	0.60
Non-Hodgkin lymphoma (except Burkitt lymphoma)	7.0	7.1	0.98	12.9	16.1	0.80
Burkitt lymphoma	1.7	3.0	0.55	1.4	2.6	0.52
Soft-tissue sarcomas	10.1	11.4	0.89	14.6	14.6	1.00
Neuroblastoma	7.7	14.1	0.54	†	1.0	-
Bone tumors	7.6	7.8	0.97	12.6	15.3	0.83
Osteosarcoma	4.6	3.7	1.22	7.5	8.1	0.93
Renal tumors	7.3	9.6	0.76	1.4	2.3	0.58
Germ cell tumors	5.9	5.2	1.14	43.6	27.4	1.59
Malignant gonadal germ cell tumor	2.9	1.8	1.59	35.4	22.0	1.61
Retinoblastoma	4.6	4.1	1.10	†	†	-
Hepatic tumors	3.6	3.0	1.22	†	1.3	-

NH: Non-Hispanic. Rates are per 1,000,000 and age adjusted to the 2000 US standard population; rates exclude data from Puerto Rico. Rate ratios are the unrounded rates in Hispanics divided by the unrounded rates in NH whites. *Includes benign and borderline brain. †Data suppressed due to fewer than 25 cases. NOTE: Cancer types are listed in descending order by Hispanic childhood cancer (age 0-14 years) incidence rate.

Source: North American Association of Central Cancer Registries, 2018.

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among adolescents (68% versus 80%). Treatment for childhood cancer depends on the type and stage of disease and involves a team that includes pediatric oncologists, nurses, social workers, and psychologists.
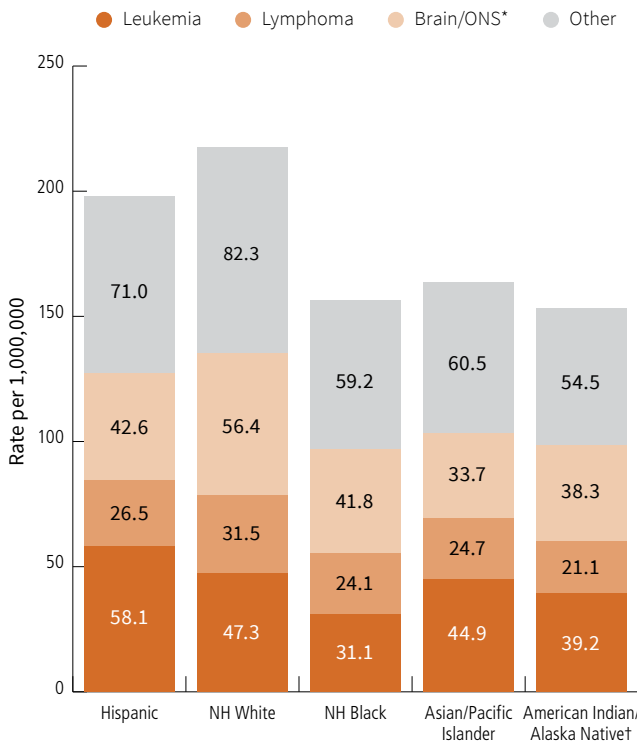
Selected Cancers

Leukemia

Leukemia is a condition in which too many underdeveloped white blood cells are present in the blood and bone marrow. It is the most common cancer in children, representing about one-third of all childhood cancers. Acute lymphocytic leukemia (ALL) is the predominant subtype in children, accounting for 78% of pediatric leukemia cases in Hispanics, followed by acute myeloid leukemia (AML; 13%). Both ALL and AML incidence rates are higher among Hispanic than non-Hispanic white children (Table 5). While the distribution of leukemia

subtypes is similar in Hispanic and non-Hispanic white children, ALL accounts for a larger proportion of leukemia cases among Hispanic adolescents (61%) than non-Hispanic whites (48%). Though genetic abnormalities appear to be responsible for some proportion of childhood leukemia, few risk factors other than radiation exposure are well established.[18, 81]

Five year survival for leukemia has improved substantially over the past two decades for all children,[82] but remains lower among Hispanics than non-Hispanic whites for both ALL (90% versus 95%) and AML (68% versus 74%). Although less access to high-quality treatment likely accounts for some of the disparity, these differences are also apparent in clinical trials, in which everyone receives equal treatment.[82, 83] Lower survival among Hispanics may be due in part to differences in disease subtype,[81] although one recent analysis suggested that differences in drug absorption may also play a role.[83]

Figure 7. Comparison of Common Childhood and Adolescent Cancer Incidence Rates by Race/Ethnicity, Ages 0-19 Years, US, 2011-2015

Legend: Leukemia, Lymphoma, Brain/ONS*, Other

Rate per 1,000,000

	Hispanic	NH White	NH Black	Asian/Pacific Islander	American Indian/Alaska Native†
Other	71.0	82.3	59.2	60.5	54.5
Brain/ONS*	42.6	56.4	41.8	33.7	38.3
Lymphoma	26.5	31.5	24.1	24.7	21.1
Leukemia	58.1	47.3	31.1	44.9	39.2

NH: Non-Hispanic. ONS: other nervous system. Rates are age adjusted to the 2000 US standard population and exclude cases from Puerto Rico. *Includes benign and borderline brain tumors. †Data based on Indian Health Service Contract Health Service Delivery Area counties. Rates should be interpreted with caution due to small case numbers.
Source: North American Association of Central Cancer Registries, 2018.
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Brain and Other Nervous System

Brain and other nervous system (ONS) cancers, including benign and borderline tumors, account for about 1 in 5 cancers in both Hispanic children and adolescents. Incidence rates of these tumors are about 27% and 18% lower in Hispanic children and adolescents, respectively, compared to non-Hispanic whites, among whom rates are highest (Table 5, page 17). Most of this difference is explained by incidence rates for astrocytoma, which are about 38%-40% lower in Hispanic children and adolescents than in non-Hispanic whites. Although reasons for the lower incidence in Hispanics are not understood, a recent study reported differences in risk among Hispanic children by maternal birthplace, suggesting that behavioral and/or environmental factors may play a role.[84]

Survival for cancers of the brain/ONS is highly dependent on age at diagnosis, tumor type and location, and treatment.[85] Overall 5-year cause-specific survival for malignant tumors in children is 67% among Hispanics and 79% among non-Hispanic whites, and in adolescents is 74% and 82%, respectively.

Lymphoma

Among children and adolescents, lymphoma incidence rates are highest in ages 10 to 19. Lymphomas are broadly classified as Hodgkin lymphoma or non-Hodgkin lymphoma (NHL). Incidence rates among Hispanic and non-Hispanic white children are similar for Hodgkin lymphoma and NHL, while among adolescents, incidence rates in Hispanics are 40% lower for Hodgkin lymphoma and 20% lower for non-Hodgkin lymphoma (excluding Burkitt lymphoma, for which rates are 48% lower). However, variations in risk have been reported among Hispanic subpopulations and by nativity status.[84, 86]

Survival for pediatric lymphoma is similar in Hispanics and non-Hispanic whites. Among Hispanics, 5-year cause-specific survival for Hodgkin lymphoma is 98% for children and adolescents, and for NHL is 91% and 93%, respectively.

Risk Factors for Cancer

Abstaining from tobacco use, maintaining a healthy body weight, staying physically active, and consuming a healthy diet can greatly reduce a person's lifetime risk of developing or dying from cancer.[5] In addition, certain cancers caused by infectious agents that disproportionately affect Hispanics[87] could be prevented through behavioral changes, vaccination, or treatment of the infection.[87] This section provides information about major cancer risk factors and their prevalence among the Hispanic population. For information about risk factors for cancer beyond what is included in this chapter, visit cancer.org/research/cancer-facts-statistics.html for the latest edition of *Cancer Prevention & Early Detection Facts & Figures*.

Tobacco

Tobacco use remains one of the most preventable causes of death, accounting for about 30% of all US cancer deaths when all races/ethnicities are combined.[5, 88] Although the use of cigarettes, cigars, and smokeless tobacco is declining in the US, other tobacco products such as water pipes/hookahs and electronic nicotine delivery systems (most commonly referred to as e-cigarettes) are gaining popularity. Cigarette smoking increases the risk of at least 12 cancers (oral cavity and pharynx, larynx, lung, esophagus, pancreas, uterine cervix, kidney, bladder, stomach, colorectum, liver, and acute myeloid leukemia), as well as a rare type of ovarian cancer.[89] Accumulating evidence suggests that smoking also increases the risk of fatal prostate cancer.[89-91]

Adults

Cigarette smoking prevalence is, and has historically been, lower among Hispanics than non-Hispanic whites or blacks.[21] In 2017, 13% and 7% of Hispanic males and females were current cigarette smokers compared to 17% and 15% of non-Hispanic white males and females, respectively (Table 6, page 20). Smoking prevalence varies by Hispanic origin, ranging from 6% in Central/South Americans to 17% among Puerto Ricans. Notably,

variations in smoking by nativity among Hispanics are largest for women, with those born in the US more than twice as likely to be current smokers as their foreign-born counterparts (11% versus 4%, respectively), reflecting a much lower prevalence of smoking in home countries and perhaps a stronger effect of acculturation on smoking uptake among women.[92] Smoking prevalence also varies by poverty status among Hispanics, but these gaps are not as large as those observed in non-Hispanic whites.

Smokers who quit, regardless of age, increase their longevity; those who quit by age 30 live an average of 10 years longer than if they had continued to smoke.[93] However, in one survey, Hispanics were less likely than non-Hispanic whites and blacks to receive a health professional's advice to quit smoking, and use of cessation aids, which help smokers quit, was also less common among Hispanics, both of which may be partly related to lower access to care.[94] Despite provisions of the Affordable Care Act (ACA) that aim to increase access to coverage for evidence-based cessation treatments, use of counseling and/or medication did not change from 2005 to 2015 among all races/ethnicities combined.[94] Smoking cessation programs for Hispanics may be more effective if they include lay health advisors (promotoras), who can assist medically underserved Hispanic smokers with accessing tobacco cessation services.[95]

For information about the American Cancer Society's tobacco cessation initiatives and resources, visit cancer.org/healthy/stay-away-from-tobacco/guide-quitting-smoking.html or call 1-800-227-2345.

Youth

Smoking prevalence among Hispanic high school students peaked in the mid-1990s and decreased rapidly until 2003, but since has declined at a slower pace (Figure 8, page 21). In 2017, the prevalence of youth cigarette smoking in Hispanics was lower than in non-Hispanic whites (6% versus 10%, respectively) (Table 7, page 21). Smoking prevalence continues to be lower among

Table 6. Current Cigarette Smoking, Electronic Cigarette Use, and Alcohol Consumption (%), Adults 18 Years and Older, US, 2017

	Hispanic			Non-Hispanic White		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**
Cigarette smoking*	13	7	10	17	15	16
Origin†						
Puerto Rican	19	16	17	---	---	---
Mexican	15	7	11	---	---	---
Cuban	10	11	10	---	---	---
Dominican	**	**	6	---	---	---
Central/South American	9	4	6	---	---	---
Education (25 years and older)						
≤12 yrs, no diploma	19	6	12	45	39	42
GED	**	23	17	48	39	44
HS diploma	11	8	9	26	24	25
Some college	13	11	12	18	19	19
College degree	9	4	6	7	5	6
Poverty status‡						
Poor	17	9	12	34	35	34
Near poor	15	7	11	33	25	29
Non poor	11	6	9	14	11	12
Health insurance status (18 to 64 years)						
Uninsured	16	7	12	39	35	37
Insured	12	8	10	17	15	16
Immigration status§						
US-born	15	11	13	17	15	16
Foreign-born	11	4	8	16	6	11
E-cigarette use¶	2	**	2	4	3	4
Alcohol consumption#	66	50	58	75	72	73
Light	32	26	29	33	38	35
Moderate	19	5	12	28	12	20
Heavy	4	2	3	6	7	6
Binge	31	15	23	36	27	31

GED: General Educational Development high school equivalency. HS: high school. Data exclude Puerto Rico. *Ever smoked 100 cigarettes in lifetime and smoking every day or some days at time of survey. †Estimates based on 2016 and 2017 National Health Interview Survey data combined. ‡Poor: <99% of poverty threshold. Near poor: 100% to ≤199% of poverty threshold. Non Poor: ≥200% of poverty threshold. §US-born includes those born in a US territory. ¶Using e-cigarettes every day or some days at time of survey. #Current consumption: 12+ drinks in lifetime and ≥1 drink in past year. Light: 12+ drinks in lifetime and ≤3 drinks/week in past year. Moderate: 12+ drinks in lifetime and (male) 3-14 drinks/week in past year or (female) 3-7 drinks/week in past year. Heavy: 12+ drinks in lifetime and (male) >14 drinks/week in past year or (female) >7 drinks/week in past year. Binge: current drinker and (male) ≥5 or (female) ≥4 drinks on at least one day in the past year. **Estimate not provided due to instability. NOTE: Estimates are age adjusted to the 2000 US standard population. Estimates in this report may differ from earlier reports due to revised weights issued for the National Health Interview Survey.

Source: National Health Interview Surveys, 2016 and 2017.

Hispanic girls than among boys, but the gender gap has narrowed in recent years, in contrast to the persistent large gender gap among adults. There is some evidence that smoking prevalence among foreign-born Hispanic adolescents increases with duration of residence in the US, particularly for females.[96] Although there are limited data on youth cigarette use by Hispanic subgroup, one study reported similar rates across subgroups with the exception of Cuban boys, who had higher rates.[97] The overall prevalence of current e-cigarette use among high school students has increased rapidly, from 2% in 2011 to 11% in 2016 and has been the most commonly used tobacco product among high school students since 2014.[98] E-cigarette use among Hispanic high school students was similar to that of non-Hispanic whites, and more than double that of non-Hispanic blacks.[99]

Table 7. Tobacco Use and Alcohol Consumption (%), High School Students, US, 2017

	Hispanic			Non-Hispanic White		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**
Current tobacco use*						
Cigarette smoking	7	5	6	9	10	10
E-cigarette	13	7	10	15	13	14
Alcohol consumption						
Current alcohol use†	27	36	31	32	33	32
Binge drinking‡	12	16	14	16	16	16
Drank before age 13 years§	23	16	19	17	11	14

Data exclude Puerto Rico. *Smoked cigarettes or used e-cigarettes on one or more of the 30 days preceding the survey. †Had one or more drink of alcohol on one or more of the 30 days preceding the survey. ‡Had four or more (if female) or five or more (if male) drinks of alcohol in a row, within a couple of hours, on at least 1 day during the 30 days before the survey. §Other than a few sips.

Sources: Tobacco Use: Wang TW, et al. Tobacco Product Use Among Middle and High School Students – United States, 2011-2017. *MMWR Morb Mortal Wkly Rep* 2018;67(22):629-633. National Youth Tobacco Survey, 2017. Public-use data file and documentation. https://www.cdc.gov/TOBACCO/data_statistics/surveys/NYTS/index.htm. Alcohol consumption: Kann L, et al. Youth Risk Behavior Surveillance – United States, 2017. *MMWR Morbid Mortal Wkly Rep.* 2018; 67(8);1-114.

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Excess Body Weight

Aside from avoiding tobacco use, maintaining a healthy weight and engaging in regular physical activity are the most important approaches for reducing the risk of cancer and many other chronic diseases.[100] The American Cancer Society's nutrition and physical activity guidelines for cancer prevention recommend achieving and maintaining a healthy weight throughout life, adopting a physically active lifestyle, consuming a healthy diet with an emphasis on plant sources, and limiting consumption of alcoholic beverages. To learn more about eating healthy and staying physically active, visit cancer.org/healthy/eat-healthy-get-active. html (for content in Spanish, visit https://www.cancer. org/es/saludable/comer-sanamente-y-ser-activos.html).

There is convincing evidence that excess body weight is associated with an increased risk for developing 13 cancers: uterine corpus, esophagus (adenocarcinoma), liver, stomach (gastric cardia), kidney (renal cell), brain (meningioma), multiple myeloma, pancreas, colorectum, gallbladder, ovary, female breast (postmenopausal), and thyroid.[101] Excess weight may also increase the risk of non-Hodgkin lymphoma (diffuse large B-cell lymphoma), male breast cancer, and fatal prostate cancer. Accumulating evidence suggests that excess body weight is associated with decreased survival for several cancers.[102]

Adults

The rapid rise in obesity across all populations in the US from the late 1970s to mid-2000s[103] has been largely linked to changes in the social and structural environment, including the availability and promotion of high-calorie, low-nutrient foods and increases in sedentary behavior.[100, 104] Historical trends in measured

Figure 8. Current Cigarette Smoking* (%) Trends, Hispanic and Non-Hispanic White High School Students, US, 1999-2017
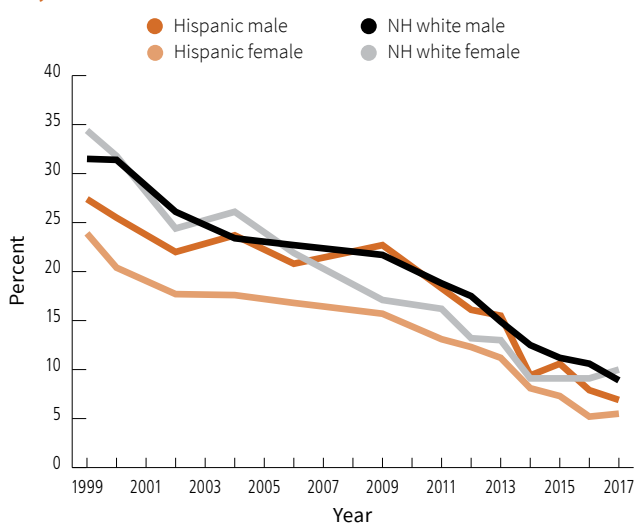
NH: Non-Hispanic. Data exclude Puerto Rico. *Smoked cigarettes on one or more of the 30 days preceding the survey.

Source: CDC. Office on Smoking and Health. National Youth Tobacc Surveys. Public-use data files and documentation. https://www.cdc.gov/TOBACCO/data_statistics/surveys/NYTS/index.htm.

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overweight (defined as body mass index [BMI] 25.0-29.9 kg/m^2) and obesity (BMI ≥30.0 kg/m^2) prevalence are only available for Hispanic persons of Mexican descent (Figure 9), although measured data for all Hispanics combined have been collected in recent years. In 2015-2016, 80% of Hispanic adult females and 83% of males were overweight or obese, compared to 65% and 74%, respectively, of non-Hispanic whites (Figure 10). These differences are mostly due to a higher prevalence of obesity among Hispanics. Notably, while obesity prevalence has begun to level off for non-Hispanic whites in the past decade, it has continued to increase among Mexicans, particularly men (Figure 9). In 2015-2016, the prevalence of obesity among Hispanics overall was 43% and 51% in men and women, respectively, compared to 38% among non-Hispanic whites of either sex (Figure 10). Duration of residence in the US is associated with higher self-reported rates of excess body weight among Hispanic adults, particularly among Mexicans and Puerto Ricans living in the continental US or Hawaii.[14]

Reasons for the higher prevalence of obesity among Hispanics, especially women, are likely complex. For example, a large proportion of Hispanics in the US have lower socioeconomic status, which is generally associated with higher obesity prevalence; however, differences in obesity by socioeconomic status among Hispanic women are very small.[105] Lower levels of leisure time physical activity may contribute;[106] in 2015, 39% of Hispanic adults reported no leisure time physical activity, compared to 27% of non-Hispanic whites.[21]

Figure 9. Obesity* (%) Trends in Mexican Americans and Non-Hispanic Whites by Age, US, 1976-2016
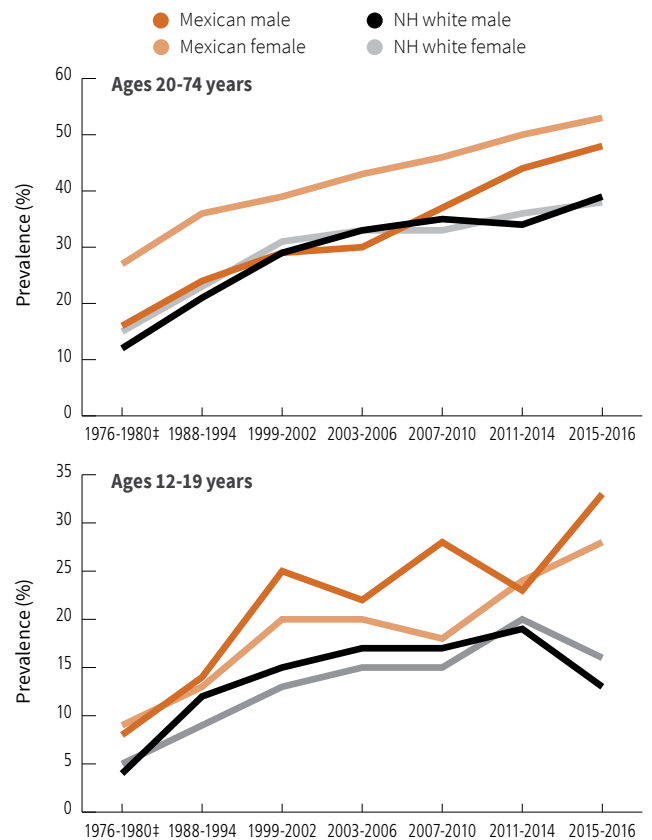
NH: Non-Hispanic. Data exclude Puerto Rico. *In ages 20-74 years, body mass index (BMI) of 30.0 kg/m2 or greater. In ages 12-19 years, BMI at or above the 95th percentile from the 2000 CDC growth charts. ‡Data for Mexicans are for 1982-84. NOTE: Adult estimates are age adjusted to the 2000 US standard population; data for ages 12-19 years are unadjusted. The 1988-94 estimate for Mexican females ages 12-19 years has a relative standard errors between 20% and 30%.
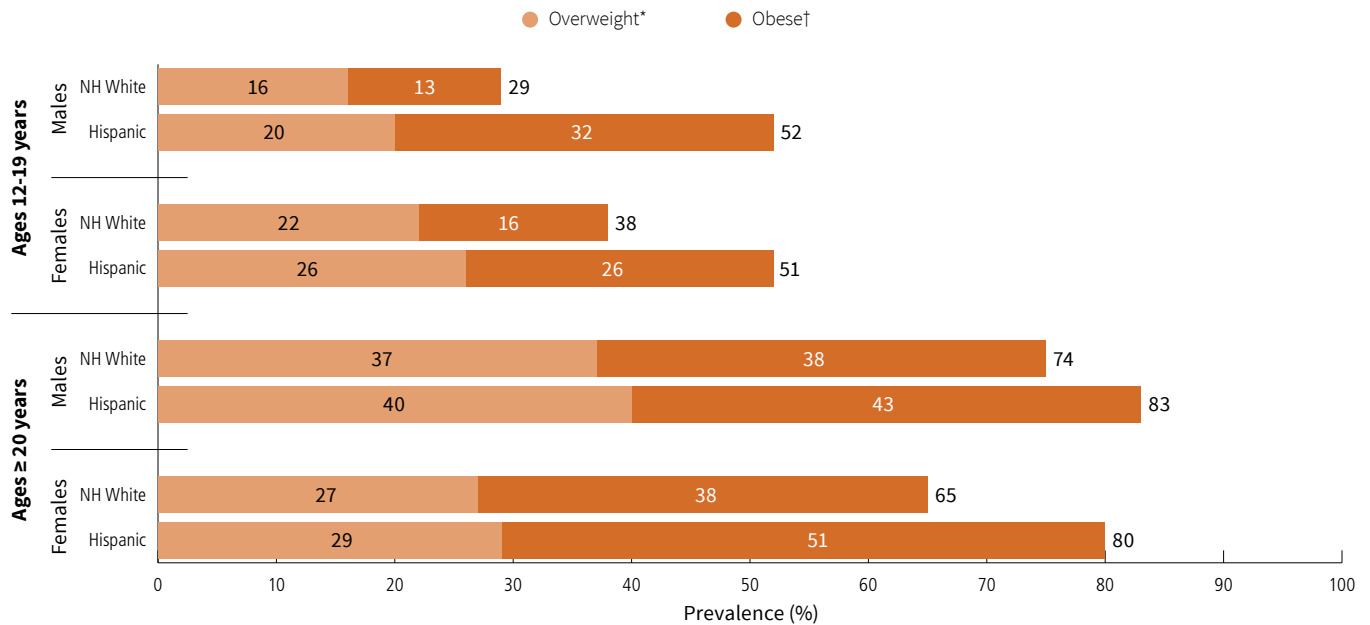
Source: Health, United States, 2013; Health, United States, 2016; National Health and Nutrition Examination Survey Data, 2015-2016.

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Youth

Unhealthy dietary patterns, physical inactivity, and excessive weight gain that begin during childhood often continue into adulthood. Approximately 70% of those who are overweight by adolescence will remain overweight as adults.[107] BMI values for youths are based on a percentile ranking of their weight and height according to the CDC's age- and sex-specific growth charts. Since the late 1970s, the prevalence of obesity has tripled among Mexican and non-Hispanic white adolescents (ages 12-19) (Figure 9). In 2015-2016, obesity prevalence in Hispanics ages 12-19 was more than double that in non-Hispanic whites in boys (32% versus 13%), and 60% higher in girls (26% versus 16%) (Figure 10).

Figure 10. Excess Body Weight (%) in Hispanics and Non-Hispanic Whites by Age, US, 2015-2016

● Overweight*   ● Obese†

Ages 12-19 years

Males
- NH White: 16 | 13 | 29
- Hispanic: 20 | 32 | 52

Females
- NH White: 22 | 16 | 38
- Hispanic: 26 | 26 | 51

Ages ≥ 20 years

Males
- NH White: 37 | 38 | 74
- Hispanic: 40 | 43 | 83

Females
- NH White: 27 | 38 | 65
- Hispanic: 29 | 51 | 80

Prevalence (%)

NH: Non-Hispanic. Data exclude Puerto Rico. *In ages ≥20 years, 25.0 kg/m2 ≤ BMI < 30.0 kg/m2. In ages 12-19 years, BMI at or above 85th percentile but below 95th percentile of CDC growth chart. †In ages ≥20 years, BMI ≥30.0 kg/m2. In ages 12-19 years, BMI at or above 95th percentile of CDC growth chart. NOTE: Sum of estimates for overweight and obese may not equal total excess body weight value presented due to rounding. Estimates for ages ≥20 years are age adjusted to 2000 US standard population.

Sources: National Health and Nutrition Examination Survey Data, 2015-2016. Obesity in ages ≥20 years: Hales CM, et al. National Center for Health Statistics. 2017.

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Type 2 Diabetes

Type 2 diabetes, a chronic condition in which the body loses its ability to respond to insulin, shares several modifiable risk factors with cancer, including excess body weight, poor diet, and lack of physical activity. However, a growing body of literature suggests that type 2 diabetes increases risk for several cancer types independent of these factors, including those of the liver, endometrium, pancreas, colorectum, kidney, bladder, breast, and perhaps ovary.[108-110] The biology underlying the association between type 2 diabetes and cancer risk is not completely understood, but may involve abnormal glucose control and related factors, including inflammation. Hispanics are twice as likely as non-Hispanic whites to report being diagnosed with type 2 diabetes and are 50% more likely to die from the disease,[111] although occurrence varies substantially by subpopulation.[112] It is important to note that few large studies have assessed the association between type 2 diabetes and cancer risk among Hispanic populations,[113, 114] and further research on this topic is needed.

Alcohol

Alcohol consumption is an established risk factor for cancers of the mouth, pharynx, larynx, esophagus, liver, colorectum, and female breast.[115] Heavy drinking (3 to 4 drinks per day) may also increase the risk of stomach and pancreatic cancer.[116] Cancer risk increases with alcohol volume, and even a few drinks per week may be associated with a slightly increased risk of female breast cancer.[117] Combined with tobacco use, alcohol consumption increases the risk of cancers of the mouth, larynx, pharynx, and esophagus far more than the independent effect of either drinking or smoking alone.[69, 118]

The American Cancer Society's guidelines for cancer prevention and risk reduction recommend that individuals limit alcohol consumption to no more than two drinks per day for men and no more than one drink per day for women.[100] Alcohol consumption is of special concern among Hispanics because of their high rates of liver cancer.[87]

Adults

In 2017, the prevalence of current alcohol consumption was 66% in Hispanic males and 50% in Hispanic females, lower than in non-Hispanic whites (males: 75%, females: 72%) (Table 6, page 20). Lower alcohol consumption among Hispanic women may be due to cultural differences in social customs and attitudes.[13] Although reported binge drinking and heavy alcohol consumption are also lower among Hispanics overall, especially females, some studies have found that the prevalence of these behaviors is more common among Mexican and Puerto Rican men than non-Hispanic white men.[119]

Youth

In 2017, the prevalence of current alcohol consumption among female high school students was slightly higher in Hispanics (36%) than in non-Hispanic whites (33%), but among boys was lower in Hispanics (27%) than in non-Hispanic whites (32%) (Table 7, page 21). The prevalence of drinking before age 13 was higher among Hispanic youth (Hispanic: 19%, non-Hispanic whites: 14%). Among foreign-born Hispanic youth, males are more likely to drink alcohol and to binge drink than females.[120] However, gender differences are diminished among second- and third-generation youths, who are also much more likely to drink alcohol and binge drink than their foreign-born counterparts.

Community-based efforts to prevent alcohol consumption among youth include enforcing drinking age laws, media campaigns, increasing excise taxes, and reducing exposure to alcohol advertising.[121] Successful strategies to reduce alcohol use among Hispanic youth emphasize the importance of parental communication and family interventions.[122-124]

Infectious Agents

Chronic infection with several viruses and bacteria, including the human papillomavirus, *Helicobacter pylori* (*H. pylori*), the hepatitis B virus, and the hepatitis C virus, is known to cause cancer.[125] Fortunately, there are opportunities to prevent or treat many of these infections.

Helicobacter pylori (H. pylori)

H. pylori is a bacterium that grows in the stomach but rarely causes symptoms. Chronic infection causes inflammation and damage to the stomach lining that may eventually lead to stomach cancer and gastric lymphoma.[126, 127] *H. pylori* transmission is thought to occur from person to person through fecal-oral and oral-oral routes and is facilitated by crowded living conditions and relatively poor sanitation. *H. pylori* infection in the US was about three times higher among Mexicans than among non-Hispanic whites in one population-based study (64% versus 21%, respectively).[74] Higher prevalence among US Hispanics largely reflects background rates in countries of origin, which range from 49% in Argentina to 75% in Chile.[128, 129]

There are several medications and regimens used to treat *H. pylori*[130] and there is some evidence that gastric cancer incidence and mortality rates are reduced among people with *H. pylori* infection who were treated with antibiotics compared to those who were not treated.[73] In 2014, the International Agency for Research on Cancer recommended that countries with high gastric cancer incidence (including Chile and Argentina) should incorporate *H. pylori* screening and treatment into their cancer control programs.[131] However, in the US, there is no recommendation to screen asymptomatic people for *H. pylori* because of the low gastric cancer incidence.

Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV)

Infection with HBV or HCV becomes chronic when the immune system is unable to clear the virus. Chronic infection with these viruses can cause cirrhosis and liver cancer[132, 133] and is increasingly recognized as a risk factor for non-Hodgkin lymphoma.[59]

HBV: HBV is transmitted through blood or mucosal contact with infectious blood or body fluids (e.g., semen, saliva). Most (95%) newly infected adults will clear the virus within six months of infection, whereas the majority of infected infants will become chronically infected.[133] Vaccination against HBV has been available since 1982 and is the primary prevention strategy. Those who should be vaccinated include newborns, children,

and some adults (e.g., high-risk groups, those with type 1 or type 2 diabetes).[134] In 2016, 89% of Hispanic adolescents had received at least three HBV vaccine doses, similar to non-Hispanic whites (92%).[135] However, vaccination coverage among foreign-born adolescents is substantially lower than among US-born adolescents.[136] Most new HBV infections occur in unvaccinated adults who practice risky behaviors (e.g., injection drug users, men who have unprotected sex with men, and adults who have sex with multiple partners).[137, 138] Although mother-to-child transmission and infection in the health care setting due to needle sticks is possible, these are less common transmission routes in the US.[133]

In the US, the overall prevalence of chronic HBV infection has remained unchanged since 1999, with an estimated 850,000 to 2.2 million people currently living with chronic HBV infection.[139, 140] According to 2007-2012 National Health and Nutrition Examination Survey (NHANES) data, less than 0.1% of whites and Mexican Americans had chronic HBV infection. Although the prevalence of chronic HBV infection in Latin America is generally similar to the US, it is elevated in some areas, such as the Andean region.[141] Thus, prevalence of chronic infection among immigrants to the US varies substantially by country of origin.[140] Screening for chronic HBV infection is recommended for individuals at high risk, including immigrants from countries where the background prevalence is 2% or higher.[142]

HCV: Transmission of HCV primarily occurs through sharing needles during injection drug use, but may also occur through needle-stick injuries in health care settings, mother-to-child transmission during birth, and sexual contact with an infected partner (though this is rare).[143] Most people with HCV will become chronically infected and are unaware of their infection until symptoms of liver disease develop. In contrast to HBV, there is no vaccine to protect against HCV. Primary prevention strategies include both educating uninfected individuals who are at high risk for infection about exposure prevention and counseling infected individuals about how to avoid transmission to others. In 2013, the US Preventive Services Task Force updated their

guidelines recommending one-time screening among men and women born between 1945 and 1965 because people born during this time period represent the vast majority of the HCV infections in the US, and HCV-associated death rates are highest among this birth cohort.[144] However, according to nationwide data from 2015, approximately 14% of adults in this birth cohort have ever been tested, with similar screening prevalence in Hispanics compared to non-Hispanic whites.[145] Those who test positive for HCV are advised to begin antiviral treatment in order to reduce health effects related to HCV infection, including liver cancer.[144]

In the US, approximately 3.5 million persons are living with HCV infection.[146] In an analysis of NHANES data, Mexicans and non-Hispanic whites born between 1945 and 1970 had a similar prevalence of HCV infection (2.7% versus 2.8%, respectively).[62] Although data by Hispanic subgroup are limited, one study found that Puerto Ricans living in the continental US or Hawaii had substantially higher chronic HCV infection prevalence than other Hispanic subgroups, whereas South Americans had the lowest prevalence.[63]

Human Papillomavirus (HPV)

HPV is the most common sexually transmitted infection in the US, with approximately 14 million people newly infected annually.[147] Although most HPV infections are cleared by the body and do not cause cancer, virtually all cervical cancers are caused by persistent HPV infection. Persistent HPV infection also causes approximately 90% of anal cancers, 70% of oropharyngeal cancers, and 60-70% of vaginal, vulvar, and penile cancers.[148] Cervical cancer is the most common HPV-related cancer in women, and oropharyngeal cancer is the most common in men.[149] There are more than 100 types of HPV, only about 13 of which cause cancer.[150] Types 16 and 18 account for about 70% of all cervical cancer cases worldwide and almost all other HPV-related cancers. However, among Hispanic women, a higher proportion of cervical cancers are caused by HPV types other than 16 and 18.[151, 152] Among adults, recent prevalence estimates

of oral and genital cancer-causing HPV infections were similar between Hispanics and non-Hispanic whites.[153]

Vaccination protects against nine HPV types and has the potential to avert about 90% of cancers caused by HPV.[154] Results from many large studies indicate that HPV vaccines are safe and effective at preventing infection.[155] As of 2017, the American Cancer Society, in accordance with the Advisory Committee on Immunization Practices, recommends routine HPV vaccination of both girls and boys beginning at 11-12 years of age, and possibly as early as age 9 (see sidebar).[156] HPV vaccination supplements, rather than replaces, cervical cancer screening because the vaccines do not protect against all types of HPV that can cause cervical cancer. All women, including those who have been vaccinated, should receive regular cervical cancer screening (see page 27).

Initiation and completion of the HPV vaccine series remain lower than other routinely recommended vaccines in all racial and ethnic groups.[135] In 2016, the proportion of Hispanic adolescents who had initiated HPV vaccination was higher than among non-Hispanic whites for both adolescent girls (72% versus 60%, respectively) and boys (68% versus 50%, respectively);[157] Hispanics were also more

likely to have completed the vaccination series, 55% versus 46% in girls and 46% versus 35% in boys.

Within the Hispanic population, provider recommendation plays a particularly important role in HPV vaccine uptake for both girls and boys.[158, 159] For example, between 2010 and 2012, Hispanic parents who received a provider recommendation were more than eight times more likely to vaccinate their son than parents who did not receive a provider recommendation.[159] HPV vaccination uptake has also been shown to be high in Hispanic communities with similar racial/ethnic composition.[160]

Human Immunodeficiency Virus (HIV)

HIV is a virus primarily transmitted through sexual intercourse and injection drug use and may be present in the body for a long period of time without resulting in symptoms. However, as HIV progresses, the immune system weakens and acquired immune deficiency syndrome (AIDS) develops. The weakened immune system of people with HIV/AIDS indirectly increases their risk of several cancers, including Kaposi sarcoma, non-Hodgkin lymphoma, and cervical cancer.[161] People infected with HIV are at an increased risk for other cancer-causing infectious agents (e.g., Kaposi sarcoma herpesvirus, HCV, HBV, and HPV), in part due to shared routes of transmission.[162] HIV-infected individuals also have higher rates of lung cancer, which is thought to be related to higher smoking rates in this population, as well as immunosuppression.[161, 163] There are several primary prevention strategies for HIV, such as safe sex practices and using sterile needles. There is no vaccine against HIV, but prophylaxis is available for people at high risk. Treatment is available for men with HIV, which has been shown to reduce cancer risk.[164] The prevalence of persons diagnosed with HIV is 2.5 times higher in Hispanics than in whites.[165] The majority of HIV cases among Hispanics are men, particularly those who have sex with other men. Visit cdc.gov/hiv for more information about HIV.

Cancer Screening

Regular screening can detect cancer at an early stage and improve the likelihood of successful treatment for some cancers.[156] Screening also can contribute to the prevention of cervical and colorectal cancers by detecting precancerous growths that can be removed. The American Cancer Society guidelines for the early detection of cancer are available at cancer.org/healthy/find-cancer-early/cancer-screening-guidelines/american-cancer-society-guidelines-for-the-early-detection-of-cancer.html. For information on cancer screening beyond what is included in this chapter, please visit cancer.org/research/cancer-facts-statistics.html to review the latest edition of *Cancer Prevention & Early Detection Facts & Figures*.

Breast Cancer Screening

Mammography is a low-dose x-ray procedure that can detect breast cancer at a stage when treatment may be more effective. The 2015 American Cancer Society breast cancer screening guidelines for average-risk women recommend that those 40 to 44 years of age have the option to begin annual mammography; those 45 to 54 years of age have annual mammography; and those 55 years of age and older have the option of transitioning to a biennial schedule or continuing annual mammography. Women should continue screening as long as overall health is good and life expectancy is 10 or more years.[166] Mammography prevalence among Hispanic women remains lower than among non-Hispanic whites, although the gap is narrowing.[106] In 2015, the prevalence of mammography screening within the past two years among women 40 years of age or older was 61% in Hispanics compared to 65% in non-Hispanic whites (Table 8, page 28). However, mammography use varied substantially by subgroup, ranging from 51% in Cubans to 67% in Puerto Ricans. Differences in length of time in the US and access to health insurance across the subgroups may partly explain these differences.[167]

Cervical Cancer Screening

Regular use of Papanicolaou (Pap) and HPV tests followed by appropriate and timely treatment can help prevent both cervical cancer occurrence and death.[168] In brief, the American Cancer Society recommends Pap testing every 3 years for women ages 21-29 and HPV testing with Pap testing every 5 years for women ages 30-65, although Pap testing without HPV testing every 3 years is acceptable in this age group. Women can stop cervical cancer screening after the age of 65, depending on previous test results or if they have had a total hysterectomy.[168] Women who are at high risk for cervical cancer, such as those with HIV infection, an organ transplant, or exposure to the drug diethylstilbestrol (DES), may require more frequent screening. Even women who have been vaccinated against HPV should be screened, because the vaccine does not protect against established infections or all HPV types.

Cervical cancer screening prevalence in Hispanic women continues to be lower than in non-Hispanic white women. and decreased from 2000 to 2015.[106, 169] In 2015, 79% of Hispanic women were up-to-date with cervical cancer screening compared to 85% of non-Hispanic whites (Table 8, page 28). Across Hispanic subgroups, screening prevalence ranges from 78% in Mexicans to 84% in Cubans. The prevalence of cervical cancer screening among uninsured Hispanic women (67%) is higher than among uninsured non-Hispanic white women (61%); evidence suggests that low-income minorities may be more adept at accessing safety net and subsidized programs than non-Hispanic whites.[170] Women born in the US are more likely than immigrants (particularly those in the US fewer than 10 years) to have reported cervical cancer screening.[169, 171]

Colorectal Cancer Screening

Colorectal cancer (CRC) screening can prevent cancer through the detection and removal of precancerous growths and can detect cancer at an early stage, when treatment is usually more successful. The American Cancer Society recommends that colorectal cancer screening begin at age 45 for persons at average risk with either a stool-based test, which is done at home, or a visual exam, which is performed at a health care

Table 8. Cancer Screening Test Use (%), Adults, US, 2015

	Hispanic		Hispanic Origin Subgroups					NH White	
	All	Uninsured (≤64 years)	Mexican	Puerto Rican	Cuban	Central/ South American	Dominican	All	Uninsured (≤64 years)
Cervical cancer screening (women 21-65 years)*									
Pap test within the past three years	77	64	77	79	82	77	81	83	58
Up-to-date†	79	67	78	80	84	81	82	85	61
Breast cancer screening (women 40+ years)									
Mammogram within the past year	46	22	44	50	40	50	48	50	20
Mammogram within the past two years	61	34	60	67	51	67	59	65	28
Colorectal cancer screening‡									
Overall									
Ages 45+ years	42	13	38	53	48	42	37	56	25
Ages 50+ years	50	14	46	62	51	52	40	65	30
Males									
Ages 45+ years	41	§	37	52	50	45	§	57	23
Ages 50+ years	50	§	45	65	48	55	§	66	30
Females									
Ages 45+ years	43	9	40	53	46	41	35	56	28
Ages 50+ years	50	10	47	60	56	50	§	65	32

NH: Non-Hispanic. Data exclude Puerto Rico. *Among women with intact uteri. †Pap test in the past 3 years among women 21-65 years of age OR Pap test and HPV test within the past 5 years among women 30-64 years of age. ‡Fecal occult blood test (FOBT) in past year, sigmoidoscopy in past five years, or colonoscopy in past 10 years. Utilization of computed tomography colonography (CTC) in the past 5 years was <2% and incorporating CTC into the overall screening estimates did not alter results and is not included in the above estimates. §Estimate not provided due to instability. NOTE: Estimates are age adjusted to the 2000 US standard population and do not distinguish between examinations for screening and diagnosis.

Source: National Health Interview Survey, 2015.

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facility.[172] For stool tests, options include the fecal immunochemical test (FIT) or high-sensitivity guaiac-based fecal occult blood test (HS-gFOBT) annually, or the multi-target stool-DNA test (mt-sDNA) every 3 years. Options for visual exams are colonoscopy every 10 years or computed tomographic colonography (CTC) or flexible sigmoidoscopy (FS) every 5 years. Positive results from any non-colonoscopy test should be followed with a timely colonoscopy to complete the screening process.

In 2015, CRC screening prevalence among Hispanics (50%) was substantially lower than among non-Hispanic whites (65%) among adults 50 years of age and older (Table 8); in those ages 50 to 64, the gap was even larger (43% versus 61%).[171] These differences are largely driven by lower use of colonoscopy in Hispanics, as use of stool tests is similar.[21] Screening uptake also varies widely by Hispanic origin, ranging from 37% among Dominicans to 53% among Puerto Ricans. Among the uninsured, CRC screening prevalence among non-Hispanic whites was more than twice that of Hispanics (Table 8), in contrast to higher screening rates for cervical and breast cancers in Hispanics versus non-Hispanic whites. Table 8 also provides CRC screening prevalence for ages 45 and older to reflect the younger age at initiation consistent with the American Cancer Society's 2018 guideline.

Prostate Cancer Screening

Currently, no organization recommends routine prostate-specific antigen (PSA) testing for early prostate cancer detection given growing concerns about frequent overdiagnosis (diagnosis of cancer that would not have caused harm) and substantial risk for serious side effects from prostate cancer treatment.[173] The American Cancer Society recommends that asymptomatic men with at least a 10-year life expectancy have an opportunity to make an informed decision with their health care provider about whether to be screened for prostate cancer using PSA testing with or without digital rectal exam. The decision

about screening should be made only after receiving information about the uncertainties, risks, and potential benefits associated with screening.[173] Men should receive this information beginning at age 50 for those at average risk and at age 40 or 45 for those at higher risk, such as African American men and men with a family history of the disease. Asymptomatic men who have less than a 10-year life expectancy should not be offered prostate cancer screening.[156] There was no change in the overall prevalence of shared decision making from 2010 to 2015, although full shared decision making (informed of advantages, disadvantages, and uncertainties of PSA testing) increased while sharing only the advantages decreased.[174] One study reported no differences between Hispanic and non-Hispanic white men with regard to the prevalence of shared decision making,[175] although PSA testing rates in 2015 were higher in non-Hispanic whites (37%) compared to Hispanics (26%).[176]

Lung Cancer Screening

A large randomized clinical trial among former and current heavy smokers has shown a 20% reduction in lung cancer deaths among those screened for lung cancer with low-dose spiral computed tomography (LDCT) compared with chest x-ray.[49, 177] The American Cancer Society recommends annual LDCT screening for apparently healthy adults 55 to 74 years of age who have at least a 30 pack-year smoking history and who currently smoke or have quit within the past 15 years.[178] Patients with this smoking history should receive screening if they: (1) receive evidence-based smoking cessation counseling if they are current smokers; (2) have undergone a process of informed/shared decision making that included information about the potential benefits, limitations, and harms of screening with LDCT; and (3) have access to a high-volume, high-quality lung cancer screening and treatment center. Among all races combined, the prevalence of LDCT screening for lung cancer for both 2010 and 2015 was low (less than 5%) and unchanged, reflecting the present challenges of implementing the various elements required for screening.[179]

Strategies to Improve Cancer Screening

Health care barriers, such as a lack of health insurance or a usual source of care, are experienced by many Hispanic men and women in the US and are reflected in lower use of preventive services like cancer screening.[106] The generally lower educational status among Hispanics has been associated with lower cancer screening utilization in most studies, likely due to less knowledge about cancer prevention and early detection. Fatalism and fear also act as barriers to cancer screening.[180] Local outreach programs, culturally targeted interventions conducted by lay Hispanic health advisors, and physician encouragement to promote the benefits of early cancer detection are effective strategies for improving screening rates among Hispanics.[181-183] The use of patient navigators also increases screening uptake.[184] More information on socioeconomic and cultural factors that affect screening behavior can be found in the next section.

Factors That Influence Health: Socioeconomic Status and Cultural Values and Beliefs

Cancer occurrence and survival are influenced by economic, social, and cultural factors. Socioeconomic status, as measured by income and education, is the most critical factor affecting health and longevity. It influences the prevalence of underlying risk factors for cancer and access to health insurance, preventive care, early detection, and treatment. Cultural factors, including language, values, and traditions, may also influence behaviors, beliefs about illness, and approaches to medical care. Other factors, including environment, previous and current health status, and psychosocial factors, also exert considerable influence on the cancer burden in the Hispanic population. Genetic factors related to ancestry may contribute to increased risk

for some cancer types,[18, 22] but account for a very minor proportion of the cancer burden in Hispanics.

Socioeconomic Characteristics

In the US, compared to non-Hispanic whites, Hispanics have lower levels of educational attainment and are more likely to live in poverty. In 2016, 19% of all Hispanics lived in poverty compared to 9% among non-Hispanic whites.[186] However, there are also substantial socioeconomic differences within the Hispanic community according to country of origin. For example, during 2012-2016, Dominicans were about twice as likely as South Americans to live in poverty (27% versus 14%, respectively) and to not have a high school diploma (31% versus 15%, respectively) in 2013 (Table 9).[111]

Table 9. Socioeconomic Characteristics (%) by Race/Ethnicity and Hispanic Origin, US, 2012-2016

| | Hispanic | Hispanic Origin Sub-groups | | | | | | NH White |
	All	Mexican	Puerto Rican	Cuban	Central American	South American	Dominican	All
Foreign-born	35	33	2	57	60	62	55	4
Income below federal poverty level	23	25	25	19	23	14	27	11
Speak English "not well" or "not at all"*	25	25	13	34	35	21	31	11
Less than high school diploma, adults ≥25 years	34	40	22	21	44	14	31	8

NH: Non-Hispanic. Data exclude Puerto Rico. *Among respondents ≥5 years who indicated that a language other than English was spoken at home. Respondents were asked to rank English-speaking ability as "not at all," "not well," "well," or "very well.".

Sources: U.S. Census Bureau, American Community Survey, Public Use Microdata File, 2012-2016. Available at https://dataferrett.census.gov/. Accessed August 6, 2018.

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Table 10. Health Care Access Characteristics (%) by Race/Ethnicity and Hispanic Origin, US, 2016-2017

| | Hispanic | Hispanic Origin Sub-groups | | | | | NH White |
	All	Mexican	Puerto Rican	Cuban	Central/ South American	Dominican	All
No health care coverage							
By age:							
<18 years	8	9	*	*	11	*	4
18-64 years	25	29	9	22	27	15	9
65+ years	3	3	†	*	*	*	<1
By nativity (18 years and older):							
US-born	11	12	7	15	11	*	7
Foreign-born	31	36	*	22	26	13	10
No usual source of medical care (18 to 64 years)							
Overall	24	25	18	24	26	15	15
Men	28	29	18	25	34	27	19
Women	19	20	17	23	19	*	11

NH: Non-Hispanic. Data exclude Puerto Rico. *Estimate not presented due to instability. †Unable to calculate relative standard error. NOTE: Estimates for adults are age adjusted to the 2000 US standard population.

Source: National Health Interview Surveys, 2016 and 2017.

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Access to Health Care

Access to health care influences the use of preventive services (e.g., immunization and cancer screening), as well as receipt of cancer treatment and follow-up care.[35] Many Hispanics face financial (e.g., inadequate health insurance, high poverty), structural (e.g., poor geographic access to providers), and personal barriers (e.g., cultural and linguistic factors, provider bias) to health care.[187, 188] Many underlying factors contribute to lack of health care coverage and not having a usual source of care. For example, Hispanics are much more likely than whites to work in agriculture, construction, domestic and food services, and other low-wage occupations, which are less likely to offer employer-based health insurance and paid work leave.[187, 189] Barriers to health care are particularly prevalent among Hispanic migrant workers.

In the US, health care access is closely related to insurance coverage. Hispanics are the least likely to have health insurance of any racial or ethnic group; among those 18-64 years of age, 25% of Hispanics were uninsured during 2016-2017 compared to 9% of non-Hispanic whites (Table 10). Within the Hispanic population, uninsured rates are highest among Mexicans (29%) and those who are foreign-born (36%). Hispanics overall are also less likely to have a usual source of care than non-Hispanic whites (24% versus 15%, respectively).

The 2010 passage of the Affordable Care Act (ACA) and subsequent expansion of Medicaid offer some current and future prospects for mitigating the financial burden of preventive services and substantially reducing the number of uninsured Hispanics, particularly among those with lower socioeconomic status. Following the first open-enrollment period of the ACA, the percentage of uninsured, working-age Hispanics in the US declined 36% between September 2013 and June 2014; in states that expanded Medicaid, the percentage declined by more than 50%.[190] Preliminary results from one study suggest that the ACA's preventive services provision may be contributing to the earlier detection of breast cancer among racial/ethnic minorities, including Hispanics.[191]

However, several challenges remain for expanding ACA benefits to all uninsured Hispanics. As of June 2018, some states with large Hispanic populations, such as Texas and Florida, had chosen not to expand Medicaid coverage. In addition, language barriers may prevent a substantial number of Hispanics from enrolling; following the first enrollment period, 30% of Spanish-speaking Hispanics remained uninsured compared to 19% among those who primarily speak English.

Notably, enrollment is not open to undocumented immigrants, who make up about one-quarter of the US immigrant population and are predominantly Hispanic.[192] As undocumented immigrants are often unable to obtain jobs with employer-based health insurance, substantial disparities in access to health care among this group remain a concern.[193]

Please visit healthcare.gov/ for more information about health insurance options made available through provisions in the ACA. Visit cuidadodesalud.gov/es/ for a Spanish version of the information.

Cultural Values and Beliefs

Cultural proficiency, or cultural competency, is an important element in providing high-quality health care and preventive services to diverse populations, especially in the setting of cancer care.[194] It is a set of attitudes, skills, behaviors, and policies that enable organizations and staff to work effectively in cross-cultural situations.[195] Cultural proficiency reflects the ability to acquire and

use knowledge of the health-related beliefs, attitudes, practices, and communication patterns of patients and their families to improve services, strengthen programs, increase community participation, and close the gaps in health status among diverse population groups. It also includes population-specific knowledge, including cultural values, disease prevalence, and treatment efficacy.[196]

The increasing growth of ethnically diverse communities, each with their own cultural traits and health profiles, presents challenges for health care delivery systems and for individual practitioners. Many experts have suggested that cultural competency among health care providers plays an important role in closing the gaps in health care across racial and ethnic groups.[194] Numerous organizations have developed cultural competency resources to assist medical providers and public health professionals. Two examples are the Maryland Department of Health and Mental Hygiene (health.maryland.gov/mhhd/CCHLP/Documents/Cover.pdf) and the US Office of Minority Health (minorityhealth.hhs.gov/omh/content.aspx?id=6515&lvl=2&lvlid=16).

How the American Cancer Society Saves Lives

With a dedicated team of staff and volunteers, the American Cancer Society is leading the fight for a world without cancer. This section provides highlights and information on some of these efforts.

Patient and Caregiver Services

The American Cancer Society provides patients and caregivers with resources that can help improve – and even save – lives. From free rides to treatment and other cancer-related appointments, places to stay when treatment is far from home, and our live 24/7 helpline, we're here for everyone with cancer questions and concerns, when and where they need us.

Cancer Information

Caring, trained American Cancer Society staff connect people to answers about a cancer diagnosis, health

insurance assistance, American Cancer Society programs and services, and referrals to other services in English and Spanish at our 24/7 helpline at 1-800-227-2345. Our websites, cancer.org and cancer.org/es, offers thousands of pages of reliable and accurate cancer information and news, including current information on treatments and side effects for every major cancer type, and programs and services nearby.

We develop numerous Spanish-language materials to educate about cancer, including cancer prevention, screening, side effects, and caregiver information, as well as *Cancer Facts & Figures for Hispanics/Latinos*. Information is also available in other languages. Visit cancer.org/easyreading or cancer.org/cancer-information-in-other-languages for more information.

Programs and Services

Many American Cancer Society programs and services have been developed or tailored to be culturally appropriate and language-specific for Hispanic audiences. Examples include the following:

Transportation to Treatment

One of the biggest roadblocks to cancer treatment can be the lack of transportation. That's why the American Cancer Society started the Road To Recovery® program. It is at the very heart of our work of removing barriers to quality health care by providing patients transportation to treatment through volunteer drivers, partners, or community organizations.

Lodging during Treatment

The American Cancer Society Hope Lodge® program provides a free home away from home for cancer patients and their caregivers. More than just a roof over their heads, it's a nurturing community that helps patients access the care they need. Through our Hotel Partners Program, we also partner with local hotels across the country to provide free or discounted lodging for patients who are not able to make frequent trips for treatment appointments.

Help Navigating the Health Care System

Learning how to navigate the cancer journey and the health care system can be overwhelming for anyone, but it is particularly difficult for those who are medically underserved, those who experience language or health literacy barriers, or those with limited resources. The American Cancer Society Patient Navigator Program reaches those most in need. It has specially trained patient navigators at 80 sites across the nation. Patient navigators can help: find transportation to treatment and other cancer-related appointments; assist with medical financial issues, including insurance navigation; identify community resources; and provide information on a patient's cancer diagnosis and treatment process.

Support for Quitting Tobacco

The American Cancer Society Quit For Life® Program is the nation's leading tobacco cessation program, offered by 25 states and territories, including Guam and Washington, DC, and more than 700 employers and health plans throughout the US. Managed and operated by Optum, the program is built on the organizations' more than 35 years of combined experience in tobacco cessation. It employs an evidence-based combination of physical, psychological, and behavioral strategies to enable participants to overcome their addiction to tobacco. A critical mix of medication support, phone-based cognitive behavioral coaching, text messaging, web-based learning, and support tools provides a higher-than-average quit rate. Program participants receive counseling from bilingual quit coaches and learning materials in Spanish.

Breast Cancer Support

Through the American Cancer Society Reach To Recovery® program, breast cancer patients are paired with trained volunteers who have had similar diagnoses and treatment plans to provide more personal, one-on-one support. A promotional brochure is available in Spanish.

Patient Support in Puerto Rico

The Puerto Rico Patient Service Center provides patients and providers in Puerto Rico with information on a range of issues, including health insurance and financial assistance for treatment. The Center staffs specialists and navigators on site to help guide patients through the health care system.

Finding Hope and Inspiration

The American Cancer Society Cancer Survivors Network® provides a safe online connection where cancer patients can find others with similar experiences and interests. At csn.cancer.org, members can join chat rooms and build their own support network from among the members. Other online resources, including MyLifeLine and Springboard Beyond Cancer (survivorship.cancer.gov), provide additional support for patients, survivors, and caregivers and allow them to better communicate to receive the help they need during and after cancer.

Research

The American Cancer Society, the largest nongovernmental, not-for-profit funding source of cancer research in the United States, has dedicated a portion of our research funding toward studies of cancer in poor and medically underserved populations. During the past decade, our Extramural Research program has awarded 178 grants, totaling more than $125 million, for research in poor and underserved populations, and offers priority funding for psychosocial, behavioral, health policy, and health services research in hopes of reducing cancer health disparities.

Examples of the American Cancer Society's currently funded research include:

Latinos face numerous barriers when it comes to getting needed colorectal cancer screening tests. Daniel Reuland, MD, MPH, at the University of North Carolina, Chapel Hill, says that some Latino groups grapple with language and cultural barriers. To overcome these challenges, he tested the effectiveness of two unique interventions: multimedia decision aids and patient navigators. Reuland's study, which focused on Latinos ages 50 to 75, involved showing patients a video – in either English or Spanish – before seeing their health care provider that explained colorectal cancer screening "using easy-to-understand narrated segments, patient testimonials, graphics, and animations." After patients watched the video and saw their doctor, a bilingual patient navigator helped them complete the screening process. The results, published in the *American Journal of Preventive Medicine*, showed that viewing the decision aid before seeing the doctor improved knowledge and decision making in racially, ethnically, and linguistically diverse populations.

Social inequality plays a significant, but often overlooked, role in cancer. Factors such as socioeconomic status, discrimination, and past trends and historical context are interconnected and help explain certain racial and ethnic differences in cancer occurrence. Nancy Krieger, PhD, a Harvard School of Public Health researcher and American Cancer Society Research Professor, is conducting several studies that she hopes will give researchers, doctors, and patients a better understanding of how social inequalities impact cancer.

Vulnerable populations not only experience delays in being diagnosed with cancer and in starting cancer treatment, but are also less likely to complete lifesaving therapies. Karen M. Freund, MD, MPH, a Tufts Medical Center researcher and American Cancer Society Research Professor, is studying the impact of patient navigation on eliminating cancer disparities. She believes some of the largest gains in cancer survival in the US can be achieved through equitable access to quality cancer care for all persons. Freund continues to research health disparities in hopes that the next 10 years will yield major advances in eliminating cancer-related health disparities through the implementation of research findings and changing how patient care is organized.

Cary P. Gross, MD, at Yale University, is exploring disparities in breast cancer care by examining how clinicians' use of a beneficial, but expensive, personalized cancer care innovation – called gene expression profiling – differs by insurance status, hospital type, and patients' sociodemographic characteristics. He hopes his findings will help to reveal what action could be taken to decrease disparities and excessive costs associated with gene expression profiling.

Advocacy

The American Cancer Society and the American Cancer Society Cancer Action Network[SM] (ACS CAN), our nonprofit, nonpartisan advocacy affiliate, are dedicated to reducing cancer incidence and mortality rates among minority and medically underserved populations. This goal can be achieved by instituting effective policies and public health programs that promote overall wellness and save lives. ACS CAN is involved in advocacy efforts at both the state and federal levels. Listed below are some of the efforts that ACS CAN has been involved with in the past few years:

ACS CAN and the American Cancer Society are working to improve access to health care for people with cancer, cancer survivors, and those who will be diagnosed with the disease in the future, which will help save lives. This includes ACS CAN's work to help ensure the implementation and protection of provisions under the health care law known as the Affordable Care Act, which has improved access to care for cancer patients and their families by:

- Ending discrimination against people with cancer and other life-threatening diseases

- Expanding access to care for people with cancer or at risk for cancer

- Refocusing the health care system on disease prevention

Each year, ACS CAN works hard to ensure that the agencies overseeing cancer research and prevention programs receive the funding needed to continue the battle against cancer. The organization continues to lead the fight to maintain and increase the investment the US has made in biomedical and cancer research and cancer programs at the National Institutes of Health (NIH), the National Cancer Institute (NCI), and the Centers for Disease Control and Prevention (CDC). This investment includes increased funding for cancer research at the National Institute on Minority Health and Health Disparities, which the American Cancer Society was instrumental in helping to establish.

Protecting state and federal funding for the CDC's National Breast and Cervical Cancer Early Detection Program is a high priority for ACS CAN. This successful program provides community-based breast and cervical cancer screening, diagnosis, and treatment to low-income, under- and uninsured women (cdc.gov/cancer/nbccedp). However, under current funding the program only serves 1 in 10 eligible women nationwide. Cuts to the program would mean even fewer women would be served.

Colorectal cancer screening by colonoscopy can remove precancerous polyps during the procedure, thereby making it a unique preventive service. ACS CAN has been instrumental in the introduction of the Removing Barriers to Colorectal Cancer Screening Act of 2017, which will fix a loophole in the Medicare program for the colorectal cancer preventive service. Under current law, a screening colonoscopy is given without cost-sharing under the Medicare program. However, seniors on Medicare face a 20% coinsurance if one or more polyps or abnormal growths are removed during a screening colonoscopy, likely costing the patient as much as $350. This is because under Medicare coding rules, removal of any polyp reclassifies the screening as a therapeutic procedure, which requires coinsurance. Importantly, those in private insurance do not face this same cost barrier. The Removing Barriers to Colorectal Cancer Screening Act would fix this inequity in Medicare and remove the coinsurance requirement.

ACS CAN was also a leading partner in the successful passage of the Family Smoking Prevention and Tobacco Control Act, which was signed into law in 2009. This law gives the Food and Drug Administration (FDA) the authority to regulate all tobacco products and stop companies from marketing their deadly product to children, racial and ethnic communities, and other vulnerable populations. ACS CAN advocates for the FDA to use the full weight of its authority to reduce the deadly toll of tobacco in the US.

Additional Resources

Intercultural Cancer Council (ICC)

The Intercultural Cancer Council promotes policies, programs, partnerships, and research to eliminate the unequal burden of cancer among racial and ethnic minorities and medically underserved populations in the United States and its territories. Visit iccnetwork.org for more information.

National Hispanic Council on Aging (NHCOA)

The National Hispanic Council on Aging is a constituency-based advocacy organization whose primary purpose is to enhance the quality of life for older Hispanic adults, families, and communities. Visit nhcoa.org for more information.

National Hispanic Medical Association (NHMA)

The National Hispanic Medical Association is a nonprofit association representing 50,000 licensed Hispanic physicians in the United States. The mission of the organization is to empower Hispanic physicians to lead efforts that improve the health of Hispanics and other underserved populations in collaboration with public and private sector partners. Visit nhmamd.org for more information.

National Alliance for Hispanic Health

The National Alliance for Hispanic Health is a nonprofit organization that provides science-based health information (in English and Spanish) and advocates for health in the Hispanic community. Visit hispanichealth.org for more information.

Factors That Influence Cancer Statistics among Hispanics

Comparison of cancer incidence, death, and survival rates between racial and ethnic groups, particularly those involving groups other than whites or blacks, should be interpreted with caution for several reasons. First, because of how cancer data are collected, we cannot present most cancer statistics according to country of origin and nativity status, masking important differences within the aggregated Hispanic population. In addition, ethnicity and race are not always classified uniformly in medical records, death certificates, and the US decennial census, so incidence and mortality rates for populations other than whites and blacks are not directly comparable and may be underestimated. Also, data presented in this report from the Surveillance, Epidemiology, and End Results (SEER) program cancer registry areas, such as cause-specific survival and long-term incidence, may not accurately reflect the cancer experience of Hispanics throughout the US, as these areas do not include some states where a large proportion of the US Hispanic population resides (e.g., Florida and Texas). For example, the similar probability of developing colorectal cancer among Hispanic and non-Hispanic white men (Table 1, page 2) is likely influenced by converging colorectal cancer incidence rates among men in California.[37]

Further, according to population-based data, Hispanic patients in the SEER registry areas have similar, or sometimes higher, cancer survival rates than non-Hispanic whites for some cancer sites, despite having lower socioeconomic indicators. This counterintuitive scenario, sometimes referred to as the "Hispanic paradox," may reflect incomplete or biased data instead of a true survival advantage.[17, 197] For example, Hispanics who immigrate to the US likely represent a selectively healthy subset of their home-country's population.[198] In addition, US Hispanics may return to their country of origin after a cancer diagnosis seeking stronger social support. Frequent migration among seasonal workers may also hamper the patient follow-up necessary for the calculation of survival rates. As a result of the greater difficulties in the accurate recording of cancer deaths for immigrant populations, one study found that survival rates for Hispanics may be artificially inflated and should be interpreted with caution.[17]

Hispanic/Latino Identification

Accurately identifying Hispanic/Latino individuals for cancer surveillance has been an ongoing challenge. In an effort to address this issue, the North American Association of Central Cancer Registries (NAACCR) convened an expert panel in 2001 to develop the NAACCR Hispanic Identification Algorithm (NHIA), first released for use by cancer registries in 2003. NHIA uses a combination of patient variables found within cancer registry records, including last name and birthplace, to indirectly determine Hispanic origin. Following widespread implementation

by state cancer registries, improvements were made to NHIA and a modified version was released in 2005 (NHIA v2). However, misclassification of Hispanic cases remains an issue. More recently, in certain states with large and diverse Hispanic/Latino populations, special research investigations have been underway to more precisely classify Hispanic subpopulations and describe their specific cancer burden. Such information is useful for planning targeted cancer control programs.

Age Adjustment

A statistical method called "age adjustment" is used to compare cancer incidence and mortality rates across groups of people with different age compositions. For example, without adjusting for age, it would be misleading to compare the cancer rates of Florida, which has a large elderly population, to those of Alaska, which has a younger population, because cancer is generally a disease of older people. Without adjusting for age, it would appear as though the risk of cancer in Florida is much higher than in Alaska. However, after adjusting for age, the cancer rates for the two states are similar. Likewise, age adjustment is necessary when comparing rates for Hispanics to other US groups because of the younger age distribution of the US Hispanic population.

Sources of Statistics

Estimated new cancer cases: The estimated number of new cancer cases diagnosed among Hispanics in the US in 2018 were projected using a two-step process. First, the total number of cases was estimated for the 10 most recent years of national data (2006 to 2015) by applying age-specific incidence rates for Hispanics from 46 states that met the North American Association of Central Cancer Registries' (NAACCR) high-quality data standards for all 10 years to Hispanic population estimates.[199] Then, the number of new cases was projected three years ahead based on the 10-year average annual percent change obtained from joinpoint regression analysis.

Incidence rates: Incidence rates are calculated by dividing the number of people who are diagnosed with cancer during a given time period by the number of people at risk for the disease in a population. In this publication, incidence rates are reported as the number of cases diagnosed per 100,000 people and are age adjusted to the 2000 US standard population. Long-term incidence trends (1992 to 2015) were based on data from the 12 oldest Surveillance, Epidemiology, and End Results (SEER) program areas and were the source for the 10-year average annual percent change in cancer incidence rates for 2006-2015.[200] NAACCR incidence data were the source 5-year average annual age-adjusted incidence rates for 2011-2015.[199, 201]

Estimated cancer deaths: The estimated number of US cancer deaths among Hispanics living in the continental US or Hawaii in 2018 was calculated by fitting the number of cancer deaths from 2002 through 2016 to a statistical model that forecasts the number of deaths expected to occur in 2018. Data on the number of deaths are obtained from the National Center for Health Statistics (NCHS) of the CDC.[202] For more information on the projection of cancer deaths, see Chen et al.[203]

Death rates: Similar to the incidence rates, death rates represent the number of people who die from cancer during a given time period divided by the number of people at risk in the population. Death rates herein are presented as cancer deaths per 100,000 people and are age adjusted to the 2000 US standard population. Death rates in this publication are based on counts of cancer deaths compiled by the NCHS and population data from the US Census Bureau.[202] Long-term death trends (1990-2016) presented in Figure 4, page 8, were used as the basis for the average annual percent change in death rates from 2006 to 2015 and exclude data from Louisiana, New Hampshire and Oklahoma, as these states did not collect data on Hispanic origin for some years. The 5-year average annual age-adjusted death rates for 2012-2016 include data from all 50 states and Washington, DC. Five-year average annual cancer death rates for Puerto

Rico (2011-2015) were previously published elsewhere.[204] It is important to note that Hispanic cancer incidence and mortality rates and trends are not directly comparable because of differences in population coverage and data years and because the amount by which surveillance data underestimate these two statistics for racial/ethnic minority groups is different.[205]

Important note about estimated cancer cases and deaths for the current year: Estimates do not include Hispanics living in US territories due to data limitations. The estimated numbers of new cancer cases and deaths in 2018 may vary from previous years for reasons other than changes in cancer occurrence. Therefore, while 2- to 3-year-ahead projections provide a reasonably accurate estimate of the cancer burden in 2018, we strongly discourage the use of our estimates to track changes in cancer occurrence. Age-adjusted incidence and mortality rates are the preferred statistics to track cancer trends in the US.

Survival: This report presents cause-specific survival rates from patients diagnosed in 17 registries of the SEER program to describe cancer survival.[206] All five-year survival statistics presented in the tables and text of this publication are for diagnosis years 2008 to 2014, with all patients followed through 2015.

National Health and Nutrition Examination Survey (NHANES): The CDC's NHANES is a national survey that assesses the health and nutritional status of adults and children in the US. Three cycles of the survey were conducted between 1971 and 1994; the most recent and third cycle (NHANES III) was conducted from 1988 to 1994. Beginning in 1999, the NHANES was implemented as a continuous annual survey. The survey is designed to provide prevalence estimates on the health and nutritional status of US adults and children, such as prevalence of major diseases, nutritional disorders, and potential risk factors of diseases. Data are gathered through in-person interviews and direct physical exams in mobile examination centers. Questions regarding diet and health are asked in the interview; the physical exam consists of medical and dental exams, physiological measurements, and laboratory tests.

NHANES website: cdc.gov/nchs/nhanes.htm

Complete citation: National Center for Health Statistics. National Health and Nutrition Examination Survey, 2015-2016. Public-use data file and documentation. http://www.cdc.gov/nchs/nhanes.htm. 2017.

National Health Interview Survey (NHIS): The CDC's NHIS has monitored the health of the nation since 1957. The survey is designed to provide national prevalence estimates on personal, socioeconomic, demographic, and health characteristics (such as cigarette smoking and physical activity) of US adults. Data are gathered through a computer-assisted personal interview of adults 18 years of age and older living in households in the US.

NHIS website: cdc.gov/nchs/nhis.htm

Complete citation: National Center for Health Statistics. National Health Interview Surveys, 2015 and 2016. Public-use data file and documentation. https://www.cdc.gov/nchs/nhis/index.htm.

National Youth Tobacco Survey (NYTS): This national survey was first conducted in the fall of 1999. Beginning in 2011, the CDC's Office on Smoking and Health and the US Food and Drug Administration's (FDA) Center for Tobacco Products began collaborating on the NYTS. Now an annual survey, it is designed to provide national data for public and private students in grades six through 12. The survey includes detailed tobacco-related questions, including topics such as bidis, secondhand smoke exposure, smoking cessation, and school curriculum. Data are gathered through a self-administered questionnaire completed during a required subject or class period.

NYTS website: cdc.gov/TOBACCO/ data_statistics/surveys/NYTS/

Youth Risk Behavior Surveillance System (YRBSS): This CDC biennial survey began in 1991. It is designed to provide national, state, and local prevalence estimates on health risk behaviors among youth and young adults who attend public and private high schools. Data are gathered

through a self-administered questionnaire completed during a required subject or class period. The state and local surveys are of variable data quality, and caution should be used when comparing data among them. Data from states and local areas with an overall response rate of 60% and appropriate documentation are considered weighted and are generalized to all public and private

high school students in grades nine through 12 in the respective jurisdiction. Beginning with the 2003 survey, state data that do not meet the weighting requirements described above are no longer publicly available through the CDC.

YRBSS website: cdc.gov/HealthyYouth/yrbs/index.htm

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