HEALTH DISPARITY AND HEALTH INEQUITY

2019 Trends and Data Report

Houston/Harris County





SUMMARY REPORT

HOUSTON HEALTH DEPARTMENT

Letter to the Community

To the Residents of Houston/Harris County:

The Houston Health Department is pleased to present this Summary Report of the *Health Disparity and Health Inequity Trends and Data Report, 2019.* The full report is available in two parts at http://houstontx.gov/health/chs/index.html.

Houston/Harris County is at the center of the most diverse large metropolitan area in the US. It is also a place where many health disparities exist. Often, these disparities are evident in differences in the health of various racial/ethnic groups in the city and county. Other disparities are seen in the access residents have to quality education, housing, transportation, and healthcare. In some richer Houston ZIP codes, life expectancy is more than 10 years longer compared to ZIP codes where incomes are less.

Houston has changed in the past 10 years. One obvious difference is the growth of minority groups in the population. Trends in health have changed as well. Some health measures have improved. Births to adolescent mothers, below age 18, are down by half, from 4.4% of all births, to 2.2%; decreases were most dramatic in the Hispanic and black populations. There are fewer smokers in Houston/Harris County, a drop from 17.3% to 12.5%.

However, poverty levels are essentially unchanged in Houston/ Harris County, and the area remains one of the most segregated metropolitan areas in the US, with pockets of poverty and disadvantage that disproportionately affect minorities, those with disabilities or less education, children, and other vulnerable groups. No one sector can address these health issues alone. Improving health disparities will need to involve many aspects of our community, with partnerships across the private, public and non-profit sectors.



This report is intended to serve as a resource for our community partners for initiating conversations, setting goals, and planning programs and processes. We hope the conversations will continue, so that new ideas can emerge and creative recommendations can be implemented, and Houston/Harris County can move closer to addressing health disparities and health inequities as a community.

HOUSTON HEALTH DEPARTMENT

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HOUSTON HEALTH DEPARTMENT

Introduction

Our nation's founders wrote that all people are created equal with rights to "life, liberty and the pursuit of happiness." The concepts of equal standing and equal opportunity are deeply rooted in our nation's values.



Health equity is a key and basic component of these rights. The Robert Wood Johnson Foundation defines health equity as "everyone has a fair and just opportunity to be healthier. This requires removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care." Health equity benefits everyone, not just those who are disadvantaged, through results such an improved economy, better quality of life in communities, and a stronger current and future work force.

The study of health equity began over 50 years ago when Sir Michael Marmot, the seminal scholar and pioneer in the field of social epidemiology, spoke of the socioeconomic gradient in health among British civil servants in the 1960s. He observed a relationship between socio-economic status (described as education, occupation and income at that time) and health. As the person's socio-economic status increased, their health outcomes appeared to improve.

Since that time, many studies have expanded on this observation, and have identified measures of unequal status in health, along with core causes of these measures and the health outcomes that follow.

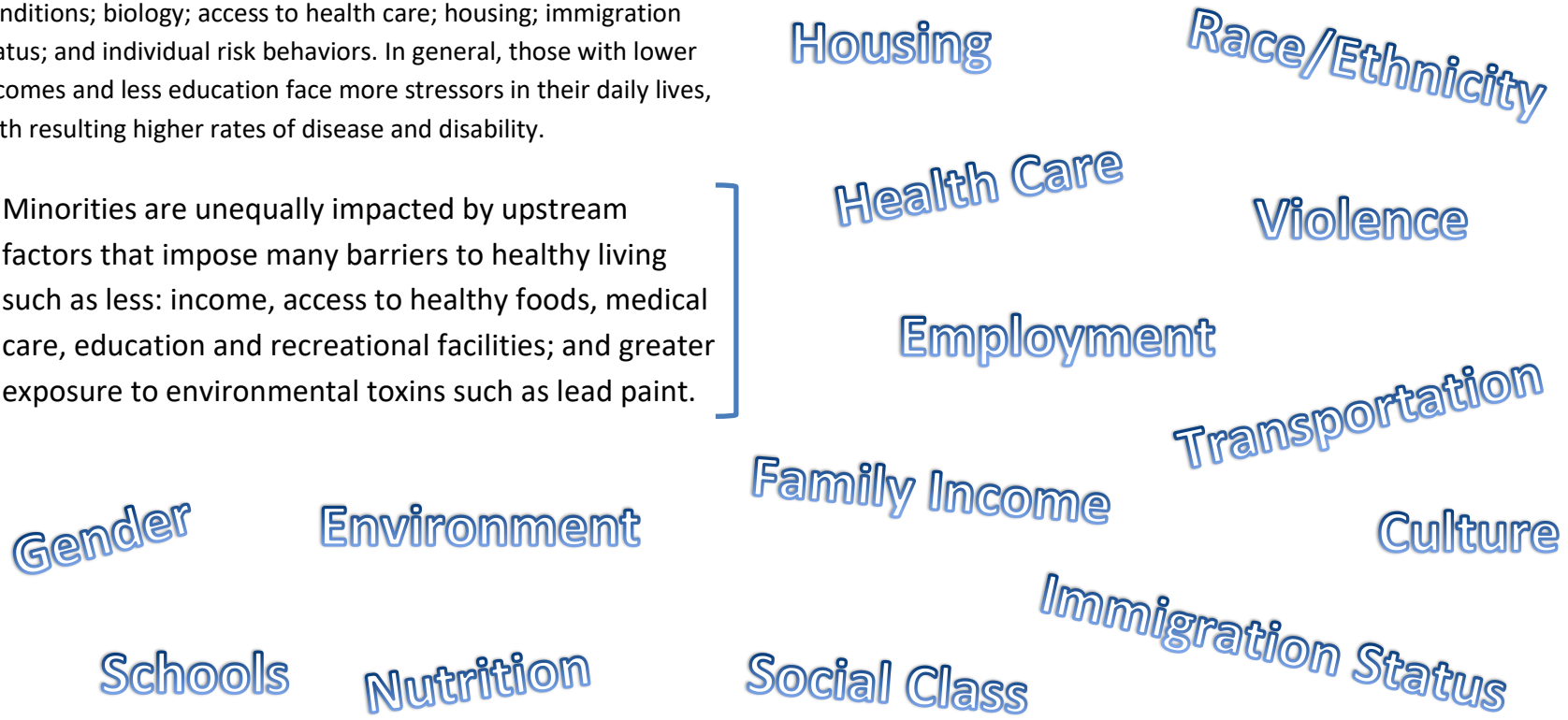
This report delves into health equity in Houston/Harris County, with measures of health disparities and health inequities among our population. This summary ends with recommendations for action to provide a road map for the way forward.

Upstream Factors: Root Causes of Health Disparities

Health inequity is a result of disparities in the core causes of health that are less than optimal. Access to health care and medical care are obviously important; however, health is also affected by many more aspects of life. Among the key factors are: socio-economic variables such as education, income, and occupation at the individual and the neighborhood level; environment; institutional and systems level discrimination; poverty; racism; neighborhood conditions; biology; access to health care; housing; immigration status; and individual risk behaviors. In general, those with lower incomes and less education face more stressors in their daily lives, with resulting higher rates of disease and disability.

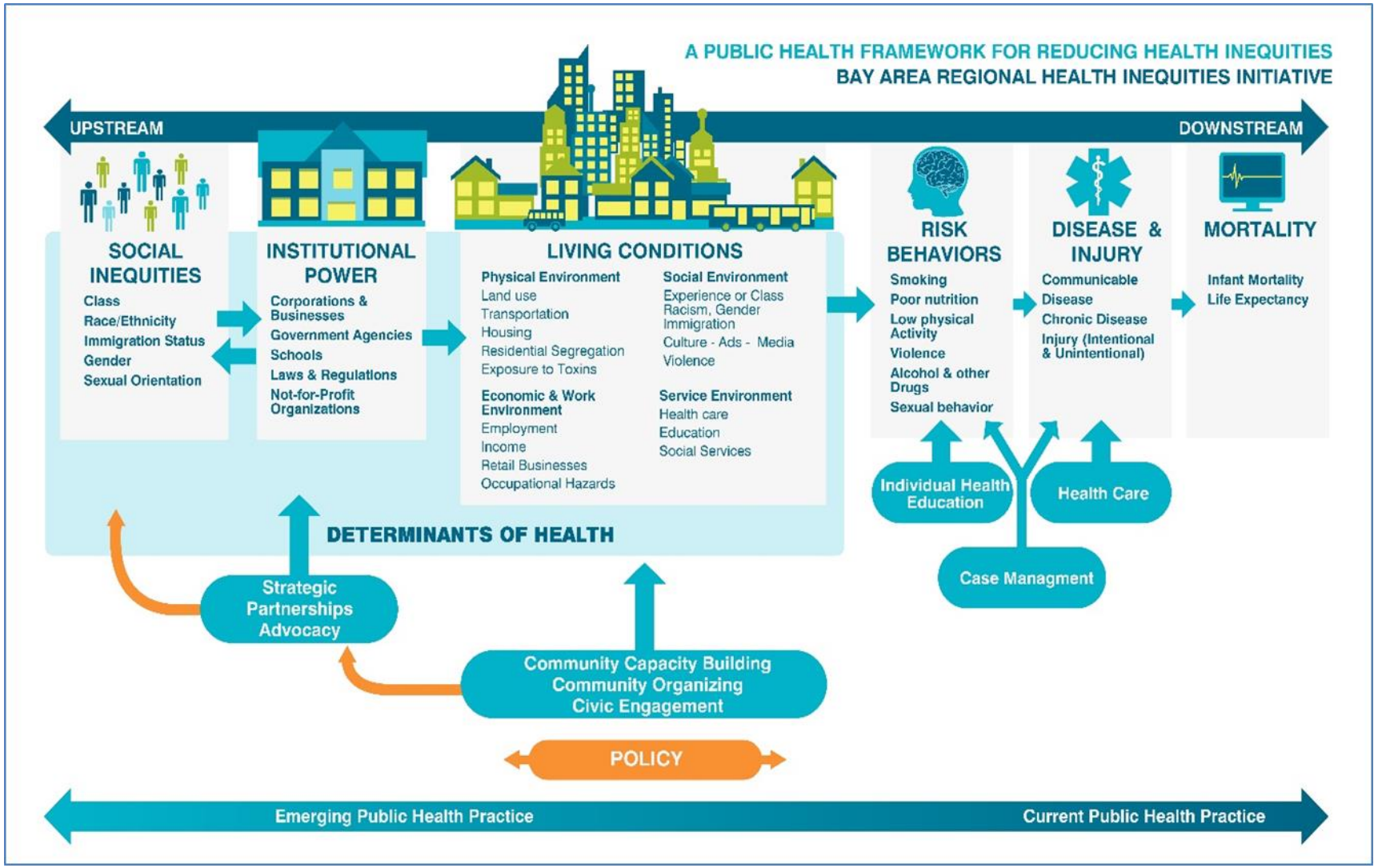
> Did you know that your ZIP code is more important than your genetic code to predict how many years you will live?
>
> Robert Wood Johnson Foundation (2009)

> Minorities are unequally impacted by upstream factors that impose many barriers to healthy living such as less: income, access to healthy foods, medical care, education and recreational facilities; and greater exposure to environmental toxins such as lead paint.



Addressing Health Inequities in the Houston Area

Adapted from the Bay Area Regional Health Inequities Initiative Framework



Population Demographics

Houston is the fourth largest city in the US, with an estimated 2017 population of 2.3 million. Most of Houston is contained within Harris County. Harris County, including Houston, is home to approximately 4.7 million residents. The Houston metropolitan area, sometimes referred to as Greater Houston, encompasses a nine-county area of Harris and surrounding counties that stretches to Galveston and along the Gulf Coast. This area, also known as the Houston-The Woodlands-Sugar Land Metropolitan Statistical Area (MSA), contains approximately 6.9 million residents, according to US Census estimates. This area has been growing rapidly for years.

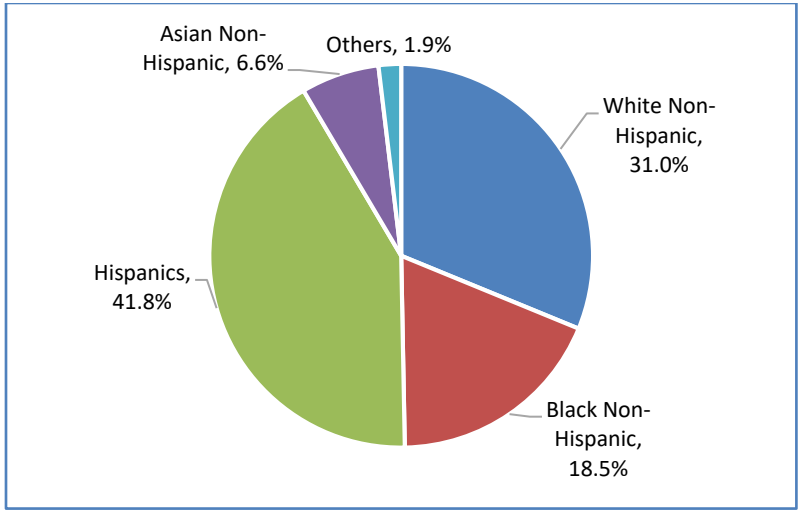
The Kinder Institute at Rice University in Houston has determined that the greater Houston area is becoming increasingly diverse. The Kinder Institute noted that in 2010, the Houston metropolitan area became the nation's most racially/ethnically diverse large metropolitan area in the nation. While the largest growth has been among Latinos, other racial/ethnic groups in the metropolitan region have also either increased or remained the same.

During the period from 2000 to 2016, the percentage of Hispanics in the Houston/Harris County population increased from 32.9% to 41.8%. During this same time period, the white population decreased from 42.1% of the population to 31.0%, and the black population remained relatively steady, changing from 18.2% in 2000 to 18.5% in 2016. The Asian population increased from 6.1% of the Houston/Harris County population in 2000 to 6.7% in 2016.

> The Houston/Harris County population is now a "majority minority" urban area, where no one racial/ethnic group is in the majority.

This growth and expanding racial/ethnic diversity can bring social, economic and health system challenges that exacerbate disparities.

Racial/Ethnic Distribution, Harris County TX 2012-2016



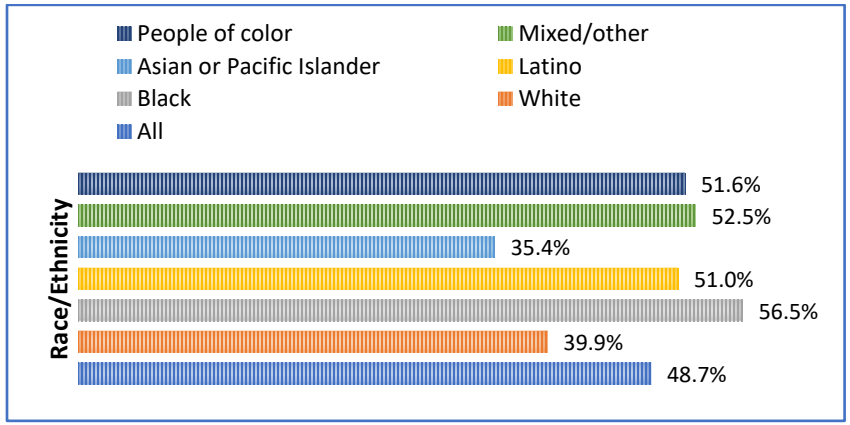
Living Conditions

HOUSING

Housing is the single largest expense for most households, and far too many pay too much for housing, particularly low-income families and households of color. High housing costs squeeze household budgets leaving few resources to pay for other expenses, save for emergencies, or make long-term investments.

> People of color face housing challenges, compared to the white population, including: lower rates of home ownership, less access to transportation, and greater exposure to environmental pollution/toxins in and near their residences.

Percentage of income Spent on Housing by Race/Ethnicity, Houston TX 2015



> The Houston area has a severe shortage of housing for low-income people.

The percentage of extremely low-income households increased by 25% from 2000 to 2014, but the number of housing units they could afford remained almost unchanged, pushing families to spend increasing amounts of their incomes on housing.



Severe rent burden is defined as paying more than 50% of one's income for housing.

TRANSPORTATION

Reliable and affordable transportation is critical for meeting daily needs and accessing educational and employment opportunities.

> In Houston, 17% of black households do not have access to a vehicle, compared to 5% of whites and 8% of Hispanics.

Lack of transportation in a city as large as Houston places households without access to a vehicle in stress, particularly when convenient public transportation is unavailable. Only 7% of workers use public transportation in Houston.

ENVIRONMENTAL POLLUTION

Health disparities may arise from unequal exposure to environmental hazards which can harm health. In Houston, two classes of environmental hazards are of most concern: toxic air pollutants and lead-based paint.

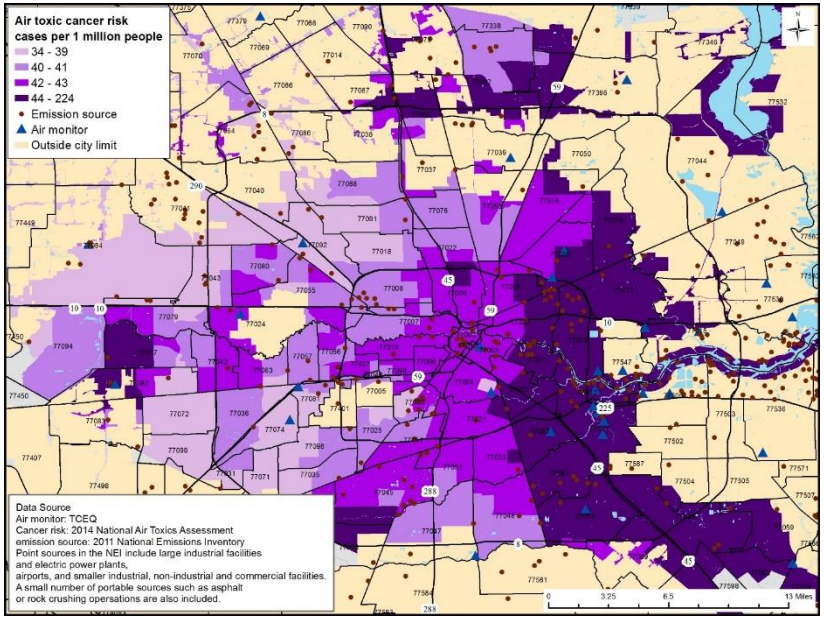
Toxic air pollution in Houston comes from emissions from one of the largest ports in the US, one of the largest petrochemical complexes in the world, and the many industrial refining and chemical companies along the Houston ship channel. Toxic air pollutants have been shown to increase the risk of cancer and respiratory symptoms.

Lead-based paint in older homes is another risk to health, is more common in poorer areas of Houston/Harris County, and has been determined by CDC to be especially dangerous to children.

Environmental pollution can exacerbate health disparities and most often affects those in low income communities located near polluting sources or in older areas where residents have not remediated the lead paint on walls and trim in the homes.

Air Toxic Cancer Risk from Air Pollution, Houston TX 2014

Measured in cancer risk cases per 1 million people



The map above shows the long-term risk of cancer from inhaling outdoor toxic air pollutants over many years, using data from the US Environmental Protection Agency National Air Toxics Assessment. Areas of highest risk for cancer are shown in the darkest purple colors. The dots on the map are emission points such as industrial facilities and electric power plants. Higher levels of pollution are evident primarily in lower income areas.

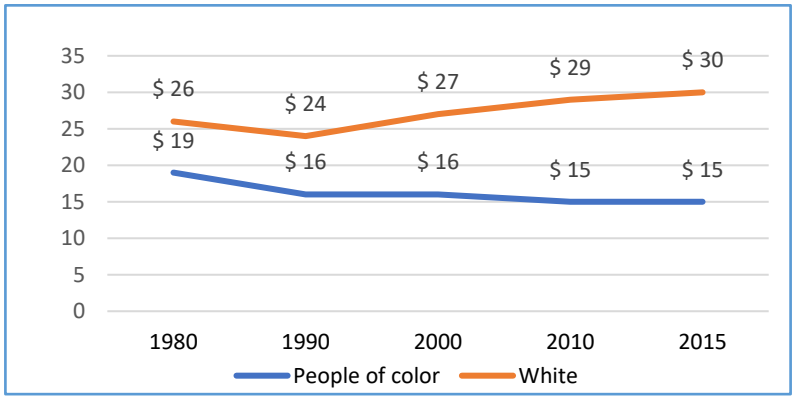
Economic and Work Environment

EMPLOYMENT AND WAGES

Fair wages are based on differences in education, training, experience, type of industry and pay scales. Wages should not vary by race or gender, regardless of the business. However, this is not the case in most of the country. Wages discrepancies are commonly seen by race/ethnicity and gender in Houston/Harris County.

> The gap in earnings is increasing. In 1980, whites in Houston earned $7 more per hour than people of color; by 2015, that gap had more than doubled, to $15 per hour.

Trends in Median Hourly Wage by Race/Ethnicity, Houston TX 1980-2015



Note: Wages are adjusted for inflation



A gap also exists between men and women doing the same work with the same education and experience. In Houston, in 2015, the median wage for white men was $35 compared to $26 for white women. Other racial/ethnic groups also showed this pattern, with men earning more than women, although the gap was less pronounced.

Gaps in wages between those with similar levels of education but different genders or different racial/ethnic backgrounds may suggest discrimination and bias among employers. Bias may be intentional or can also be outside of the awareness of the employer, such as hiring those from similar backgrounds.

Improving wage disparities can have a positive impact for the total population resulting in more of the consumer spending that drives economic growth and job creation.

OCCUPATIONAL DISPARITIES AND HAZARDS

Workers with lower incomes report worse overall health, have a higher probability of disability, and often die earlier than workers in higher income occupations. According to the Centers for Disease Control and Prevention (CDC), African American, Hispanic, and immigrant workers are disproportionately employed in some of the most dangerous occupations.

POVERTY

Poverty is a powerful determinant of health, impacting many aspects of life. People who live in high-poverty neighborhoods have less access to jobs, services, high-quality education, parks, safe streets, and other essential ingredients of economic and social success that are the backbone of strong economies. They are more likely to face exposure to environmental pollutants and crime. Housing policies, lending policies, and employment policies can also impair their ability to improve their incomes and health.

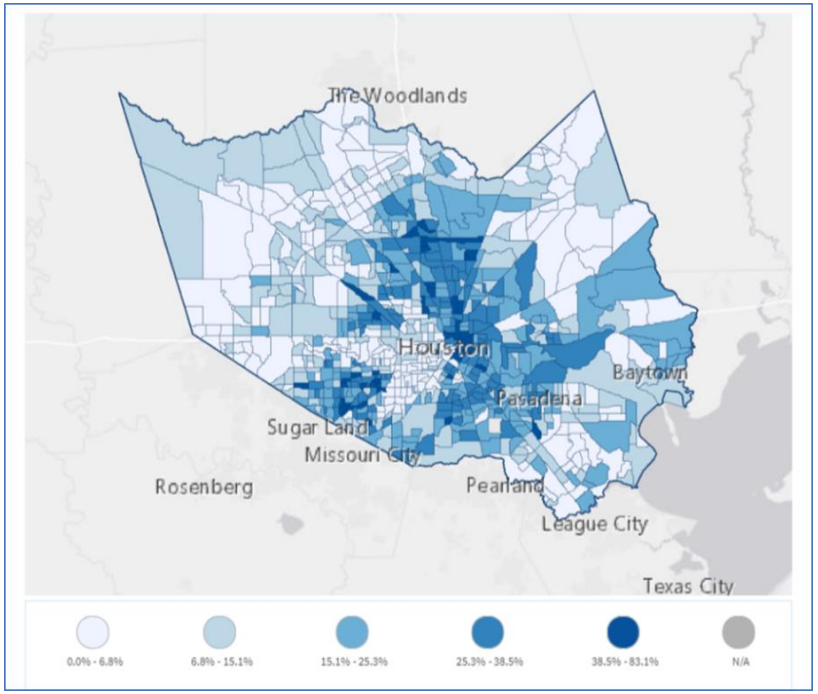
> Poverty levels have not improved in Harris County in the past decade.

In Harris County, in 2004, approximately 20% of Hispanics, 20% of blacks, and 5% of whites had incomes below the federal poverty level. In 2015, this percentage had not improved; 22% of Hispanics, 20% of blacks and 5% of whites lived below poverty.

Poverty is measured by the proportion of people with incomes below the Federal Poverty Level (FPL) or twice/three times the FPL. The poverty threshold for a family with two adults and one child was $20,780 in 2018, and was $12,140 for a one-person household.

As shown in the following map from the Houston State of Health website, poverty is concentrated in certain areas within the city and county. The darkest blue areas are the locations with the highest percentages of persons living below poverty.

Percent of Families Living Below the Federal Poverty Level, Harris County TX 2012-2016



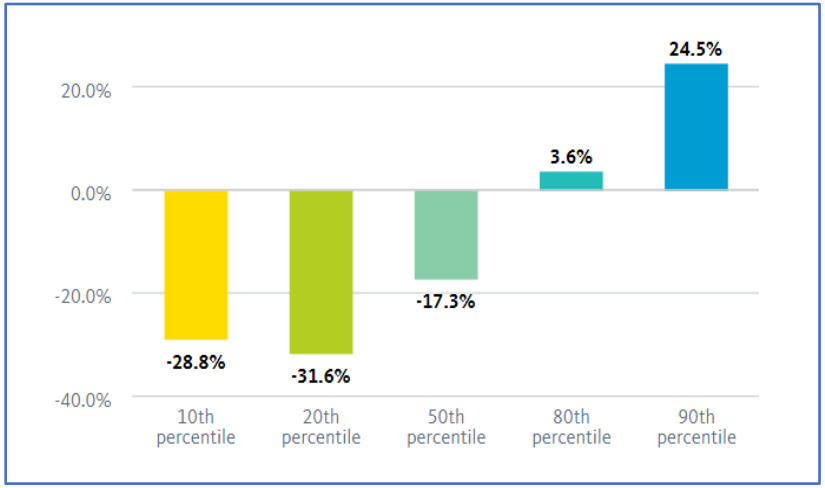
Social Environment

INCOME INEQUALITY

In the United States, income inequality, or the gap between the rich and everyone else, has been increasing rapidly since the 1970s. This has created increasing gaps in health, wealth, employment, education, and opportunity that prevent low income people and people of color from realizing their full economic potential.

> Over the past three decades, gains in income and wages have gone largely to the very top earners, while wages and incomes of working class and middle class workers have declined or stagnated.

Figure 25: Earned Income Growth for Full-Time Wage and Salary Workers, Houston TX 1980-2015



> Smart poor kids are less likely to graduate from college now than dumb rich kids. That's not because of the schools, that's because of all the advantages that are available to rich kids.
>
> Robert Putnam, Professor Public Policy, Harvard Kennedy School

RACISM

Racism a form of discrimination in which the characteristics of a particular race or ethnic group are used to designate them as outcasts, so they are subject to social exclusion or harassment, fewer opportunities, and unfair treatment. Exposure to racism is a stressor that leads to mental and physical health problems, such as higher rates of heart disease, high blood pressure, mood disorders such as depression, and death from all causes. Experiences of racism are common among minority groups; in one survey, over half of African American adults have reported situations in which they had experienced racism.

RESIDENTIAL SEGREGATION

The Kinder Institute reported that the Houston area is the most diverse large metropolitan area in the US, and is also one of the most segregated. Residential segregation can be by race/ethnicity or by income, and is related to income inequality.

The choice of where to live can lead to disparities when resources, such as high-quality schools or public parks, are more available in higher income areas. Conversely, public hazards, such as crime, are often more prevalent in low income areas.

SOCIAL CLASS

Social class has an impact on health. Social class can be determined by wealth, education, type of occupation, and membership in a specific subculture or social network. Lower social class individuals have fewer resources to control their environment and therefore experience uncertainty, helplessness, and lack of freedom. In contrast, upper class individuals have more financial, social, and intellectual resources at their disposal, which enable them to feel socially valued and in control of their lives.

> The lower one's social class, the higher one's level of chronic psychological stress.

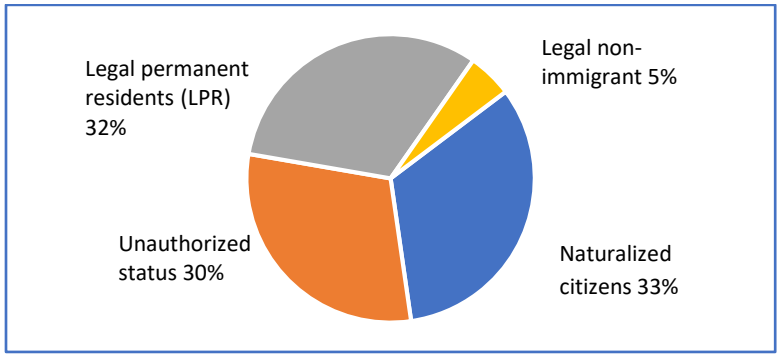
IMMIGRATION

The greater Houston metropolitan area has been rapidly growing, from 6 million in 2010 to 7 million in 2017; immigrants now account for 1.7 million of the total population. The largest group of immigrants, by far, came from Mexico.

Many immigrants have come to the US for the opportunity to find better jobs and better lives for themselves and their families. Houston immigrants range from highly skilled professionals to working class families to international students. Most immigrants are working. Over 80% of men and about 50% of women are in the labor force in all categories of foreign-born residents; 70% are in the US legally. Almost half of children in the Houston area are children of immigrants.

> Of the foreign-born population in Houston, one-third have unauthorized status (do not have immigration papers). The rest are legal immigrants or naturalized citizens. Almost a third of unauthorized immigrants live below the poverty level.

Legal Status of the Foreign-Born Population in the Houston TX Metro Area, 2012-2016



CHRONIC STRESS

The Centers for Disease Control and Prevention noted that childhood experiences, both positive and negative, have a tremendous impact on future violence, victimization and perpetration, and lifelong health and opportunity. One of the most severe negative impacts comes from child abuse, which is more common in areas of higher poverty.

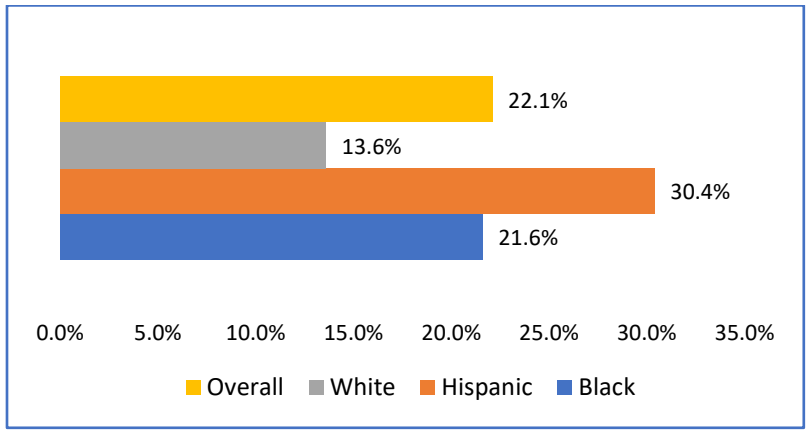
Service Environment

HEALTHCARE ACCESS

Access to healthcare is important for health but is only one of the factors that affect health. The root causes play a far greater role in health in terms of access, allocation and distribution of different types of resources. At the same time, access to healthcare is crucial for maintaining good health. In Harris County, 22% of adults reported that they were unable to see a doctor during the past year due to cost. This is much higher than in Texas (18%) or the US (12%).

89% of whites reported they had health insurance compared to 59% of Hispanics; 30% of Hispanics said they could not see a doctor due to cost in the last year.

Percentage of Adults Who Reported They Cannot See a Doctor Due to Cost by Race/Ethnicity, Harris County TX 2017



FOOD ENVIRONMENT

A lack of access to healthy foods is often a significant barrier to healthy eating habits. Low-income and underserved areas often have limited numbers of stores that sell healthy foods.

Food Insecurity



Photo courtesy of CDC/Amanda Mills

Food insecurity, defined by the United States Department of Agriculture (USDA) as limited availability or uncertain ability to access nutritionally adequate foods, is associated with chronic health problems including diabetes, heart disease, high blood pressure, high cholesterol, obesity, and mental health issues including major depression.

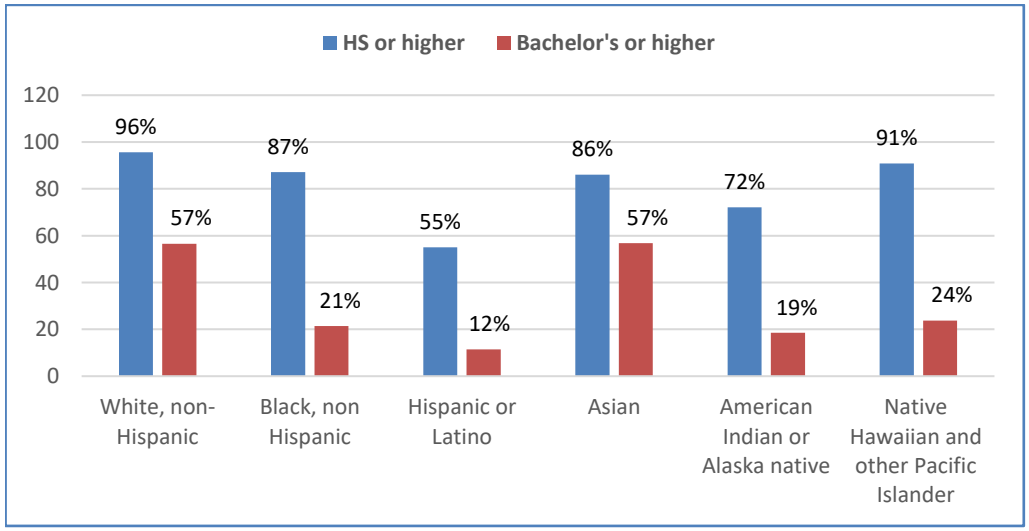
Child food insecurity has serious long-term implications for the child's health and development. ***Nearly one in four children in Harris County faces uncertainty in whether adequate and nutritious food will be available in their homes.***

EDUCATION

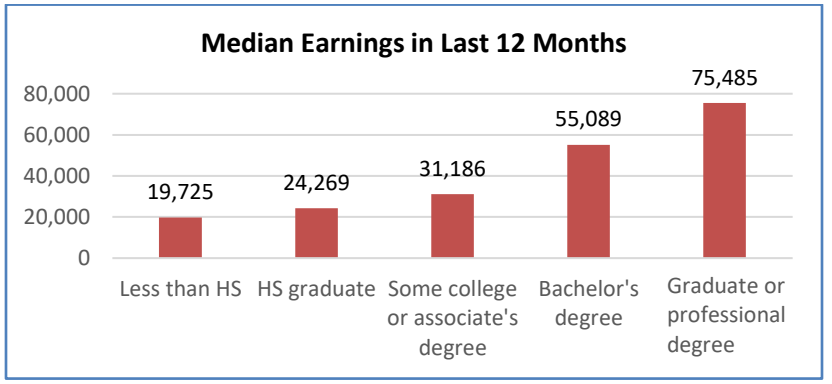
Higher education leads to lower rates of chronic illness and death, and longer years of life (life expectancy) through benefits such as greater employment opportunities and earning potential, better knowledge of health, improved coping skills, and better access to social support. In Houston, far more whites (57%) and Asians (57%) have a bachelor's degree compared to blacks (21%) and Hispanics (12%).

> Each additional year of education leads to 11% more income annually, and additional benefits such as a safer work environment and better availability of health insurance.

Percentage of Educational Attainment by Race/Ethnicity, Houston TX 2012-2016



Median Annual Earnings by Level of Education, Houston TX 2012-2016





PROXIMITY TO SOCIAL SERVICES

Households vary by how far they must travel to find needed social services such as healthcare, dental offices, schools, libraries, daycare facilities, and senior centers. These are often less accessible in low income areas.

Downstream Factors: End Results

Health disparities are the outcomes of underlying upstream factors that impact living conditions, economic and work environments, social conditions, and access to services.

Downstream factors are the results in health from the upstream factors that are the primary determinants of health. When upstream conditions, such as one's social class, race/ethnicity, local schools and other resoures, and living conditions, are favorable, one is much more likely to enjoy good health.

As defined by the Centers for Disease Control and Prevention (CDC), health disparities are preventable differences in the burden of disease, injury or violence, or in opportunities to achieve optimal health experienced by socially disadvantaged racial, ethnic, or other groups and communities. These groups include populations such as those defined by sex/gender, sexual identity, age, disability, socioeconomic status, and geographic location.

In the past 50 years, CDC noted that people are living longer, healthier, and more productive lives. Unfortunately, this improved trend in health is not rapid enough, nor is it experienced uniformly among all people in the United States, a nation that has become increasingly diverse in the last century. For example:

- Black adults are 50% more likely to die of heart disease or stroke (two of the leading causes of death in the US) before age 75 years than their white counterparts.
- Hispanics, blacks, and those of other, or mixed races have higher rates of adult diabetes than Asians and whites.
- Adults without college degrees and adults with lower household incomes have higher rates of adult diabetes.
- Non-Hispanic blacks have more than double the rate of infant mortality compared to non-Hispanic whites.
- Men are four times more likely to commit suicide than women regardless of race/ethnicity.
- American Indians/Alaskan Natives, and whites for both genders are more likely to commit suicide than other races.
- Each day, about 1,000 young people become daily cigarette smokers, while too many adults still use tobacco.
- About 40% of US households do not have easy access to large grocery stores.
- Fruit and vegetable consumption remain lower than the recommended levels.
- Obesity rates have leveled but not declined – one in three adults and one in six children are obese.
- About one in 25 hospitalized patients develops an infection associated with healthcare, leading to 75,000 annual US deaths.
- Breastfeeding rates remain too low.
- Vaccination rates/immunization rates remain too low.
- Teen birth rates remain too high.


UH OH!

Health Behaviors

Health is strongly impacted by how we live our lives, including health risk and health promoting behaviors. Health behaviors are often established during childhood and early adolescence, and frequently cluster within populations.

SMOKING

Tobacco is the agent most responsible for avoidable illness and death in America today. Tobacco use brings premature death to almost half a million Americans each year and contributes to profound disability and pain in many others. Smoking is most prevalent among those with lower incomes and less education.

> Smoking has decreased in Houston/Harris County, from 22% in 2002, to 12% in 2016.

PHYSICAL ACTIVITY

Active adults reduce their risk of many serious health conditions including obesity, heart disease, diabetes, colon cancer, and high blood pressure. In addition, physical activity improves mood and feelings of well-being, and promotes healthy sleep patterns.

In Harris County, college graduates (87%) and those with higher incomes (92%) were more likely to report leisure time physical activity compared to high school graduates (65%) and those with incomes below $25,000 (58%). This may be due, in part, to those with more education and higher incomes having better access to recreational facilities and safe places for walking and other outdoor activities.



NUTRITION

A fresh, healthy and balanced diet is essential to maintain a healthy weight and prevent chronic disease, especially cancer. But only 1 in 10 adults meets the recommended guidelines for fruit and vegetables, which is based on one's age and sex; 1 ½ to 2 cups of fruit and 2 to 3 cups of vegetables daily.

In Harris County, 18.7% of adults reported that they eat fruits and vegetables five or more times per day in 2015, an increase from 12.2% in 2013. In general, women were more likely to eat fruits and vegetables than men.

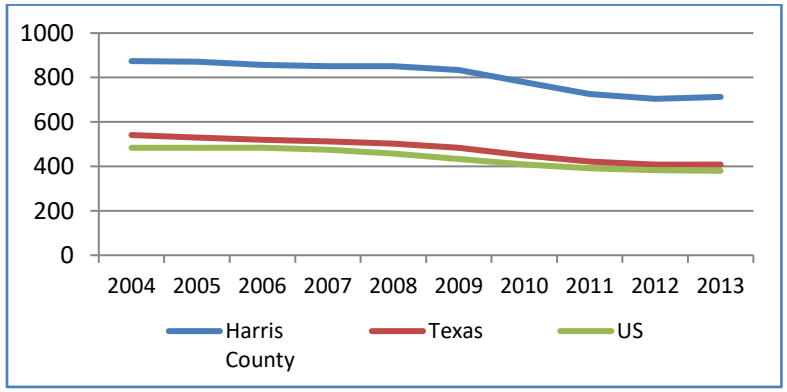
VIOLENCE

Gun violence in the US is among the highest in the world. In 2016, an estimated 251,000 people died worldwide from firearm injuries. The following six countries, with less than 10% of the world's population, accounted for 50.5% of this total.

- Brazil: 43,200
- United States: 37,200
- Mexico: 15,400
- Colombia: 13,300
- Venezuela: 12,800
- Guatemala: 5,090

Deaths from firearms in Harris County have remained between 11.5 and 14.7 per 100,000 during the past 20 years. Firearm deaths were highest among blacks (24.5 per 100,000) in 2017 compared to whites (13.6), Hispanics (8.3) and Asians (6.4). Suicide deaths by firearms were higher among the white population (7.1 per 100,000) compared to blacks (3.9) and Hispanics (2.8). Overall violent crime, however, has decreased, as shown in the following chart.

Violent Crime Rate in Harris County, Texas and the US 2004-2013*
3-Year Averages, Rate per 100,000 Population



*Violent crimes are offenses that involve face-to-face confrontation between a victim and perpetrator, including homicide, rape, robbery, and aggravated assault.

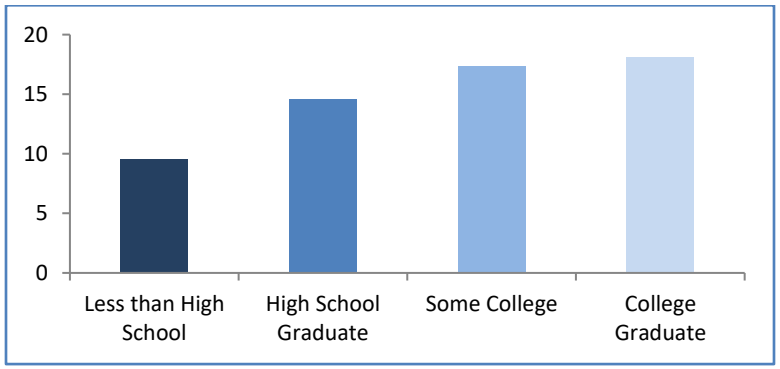
> The rate of violent crime has deceased in Harris County since 2004, although the rate has remained higher than that of Texas or the US.

ALCOHOL

Adolescents who begin drinking at a young age are more likely to develop alcohol dependence than those who begin drinking at age 21. Alcohol use impairs judgment and can lead to other high-risk behaviors such as drunk driving and irresponsible sexual activity.

Binge drinking brings a person's blood alcohol concentration to the legal limit of 0.08 % or above. This typically means five or more drinks for men or four or more drinks for women in about two hours. Binge drinking is higher among college graduates and those with higher incomes. Whites (18%) were more likely to binge drink than blacks (13.6%) and Hispanics (11.5%) in 2015.

Percentage of Adults Reporting Binge Drinking by Education, Harris County TX 2015

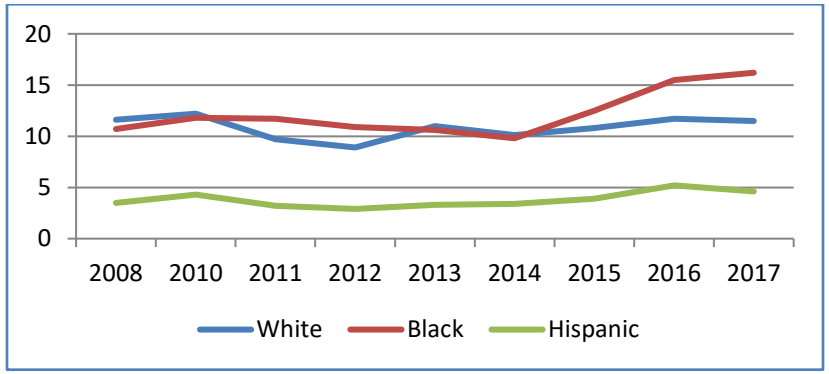


ILLICIT DRUGS

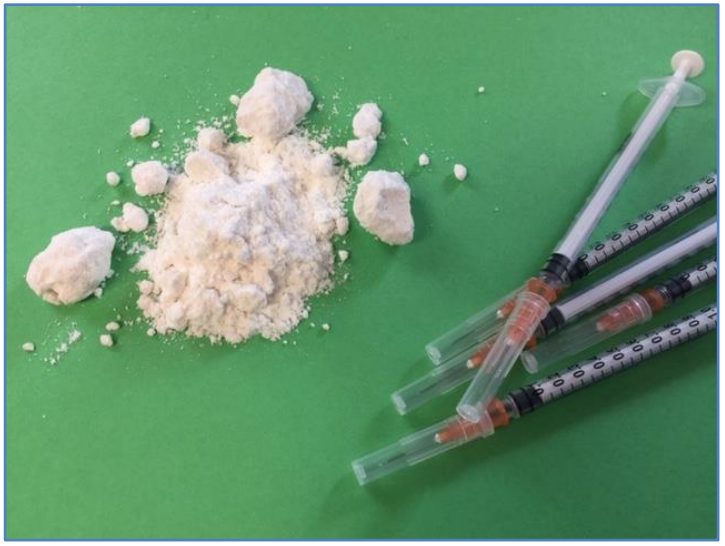
Illicit drugs include marijuana, cocaine/crack, methamphetamine, heroin, hallucinogens, inhalants, and nonmedical use of prescription drugs. These drugs impact brain functioning, and include pain relievers, tranquilizers, stimulants, and sedatives. They are known to be highly addictive and in most cases are illegal substances. Use of illicit drugs is highest among young people aged 15-25 years.

Drug induced deaths in Harris County are highest among the white and black populations, more than double the rate for Hispanics in 2017, as shown in the following chart.

Drug Induced Causes of Death by Race/Ethnicity, Harris County TX 2009-2017, Age adjusted, rate per 100,000 population

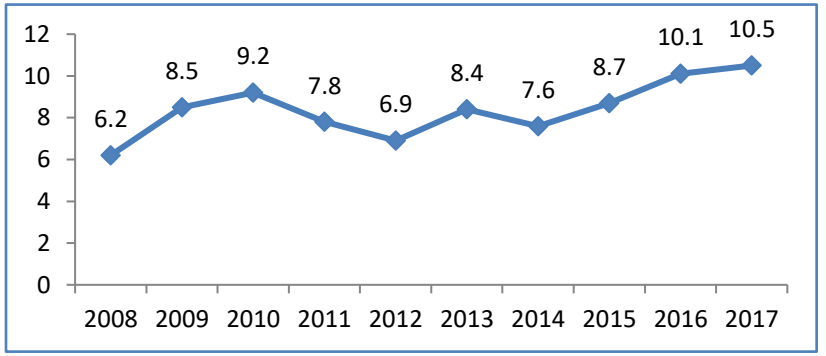


Opioids are a class of drugs that include the illegal drug heroin; synthetic opioids such as fentanyl; and pain relievers available legally by prescription, such as oxycodone (OxyContin®), hydrocodone (Vicodin®), codeine, morphine, and many others. Drug overdose in the United States has become an epidemic, and opioids are at the center of this crisis.



In Harris County, the rate of accidental drug overdoses has increased 69% since 2008 from a rate of 6.2 per 100,000 in 2008 to 10.5 per 100,000 in 2017.

Accidental Drug Poisoning Deaths, Harris County TX 2008-2017
Age-adjusted rate per 100,000 population



SEXUAL RISK BEHAVIOR

Sexual behavior can impact health disparities when it leads to the spread of sexually transmitted diseases or to unplanned pregnancy for those who are unprepared to become parents. CDC reported that in 2017, among ***Houston high school students***:

- 35% had ever had sexual intercourse
- 10% had four or more sexual partners
- 24% had sexual intercourse during the previous three months
  - 45% did not use a condom the last time they had sex
  - 23% did not use any method to prevent pregnancy
  - 18% had used alcohol or drugs before sex

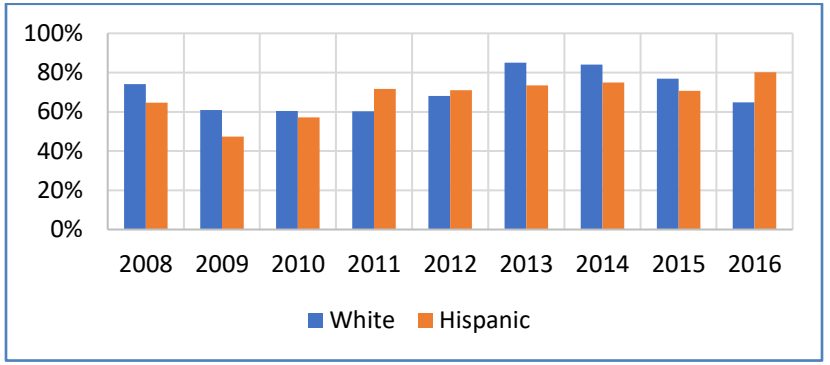
USE OF PREVENTIVE SERVICES

Decisions about use of preventive services can be impacted by one's social/economic status, insurance coverage, and education. Some key preventive services are immunizations, mammograms, pap tests, cholesterol screening, colorectal cancer screening, and prenatal care.

Immunizations for Children

High levels of vaccination coverage are important to reduce vaccine-preventable diseases in both the vaccinated and the under-vaccinated population. A series of seven vaccinations is recommended by CDC for children aged 19 to 35 months. The percentage of vaccinated children has been dropping in recent years among the white population. Vaccination rates in Houston (73.1%) were higher compared to Texas (69.5%) for 2016.

Combined 7-Vaccine Series Coverage Among Children 19-35 Months by Race/Ethnicity, Houston TX 2008-2016*



*Due to data gaps, information for the black population was not available



Prenatal Care

Babies born to mothers who do not receive prenatal care are three times more likely to have a low birth weight and five times more likely to die than those born to mothers who do get care. In Harris County, 95.7% of women receive prenatal care. Ideally, prenatal care will begin in the first trimester, and 56.5% of women do begin care in this early stage of pregnancy. In 2015, white mothers (66.8%) were more likely to begin prenatal care in the first trimester, compared to black (45.8%) and Hispanic (51.5%) mothers.

Health Outcomes

Health outcomes are the results in one's health of the genetics, health behaviors, environments, medical treatments, and other structural factors that impact one's health. Health outcomes are affected by age, income, racial/ethnic group, risk behaviors, and many other factors in one's life.

BIRTH OUTCOMES

Preterm Birth and Low Birthweight

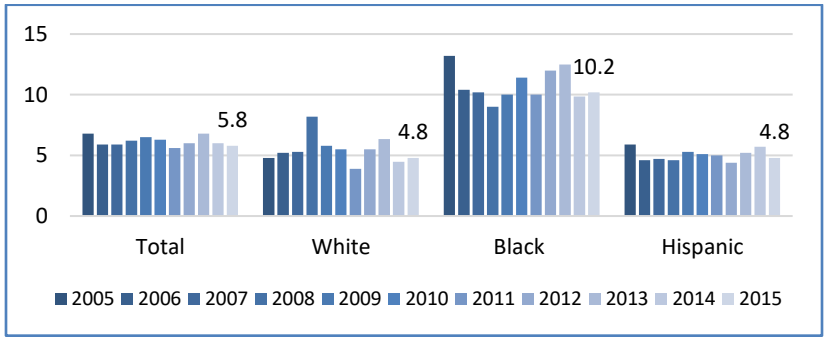
In Harris County, the percentages of preterm births have decreased from 13.1% in 2008 to 12.2% in 2015. Percentages of low birth weight births have also dropped, from 8.8% of all births in 2008 to 8.5% in 2015. Mothers aged 40 and older, or 18 and younger, are at higher risk for poor birth outcomes, as are women who face stressors such as domestic violence or poverty.

Infant Mortality

Infant mortality refers to the number of infants that are born alive, but die before they are one year of age. The infant mortality rate in Harris County has decreased from 6.8 per 1,000 live births in 2005 to 5.8 per 1,000 in 2015.

Infant mortality is over twice as high among the black population compared to the white and Hispanic populations, for unknown reasons.

Infant Mortality Rate by Race/Ethnicity, Harris County, TX 2005-2015, Deaths per 1,000 Live Births



ADOLESCENT PREGNANCY

Births to very young females have implications for both the mother and the child. Teenage mothers are at greater risk of having infants born with low birth weight and disabilities, and mortality during the first year of life.

Births to mothers aged 17 and under in Harris County have dropped by half since 2005, from 4.4% of births to 2.2% in 2015.

Teen mothers are less likely to finish high school, and their children suffer higher rates of abuse and neglect compared to mothers who delay childbearing.

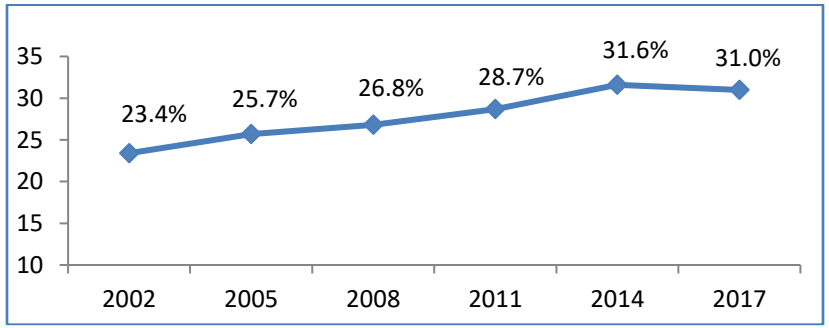
OBESITY

Obesity increases the risk of many diseases, including heart disease, type 2 diabetes, cancer, hypertension, stroke, liver and gallbladder disease, respiratory problems, and osteoarthritis.

Obesity among adults in the greater Houston area has risen from 23.4% in 2002 to 31.0% in 2017. Obesity is higher among black adults (47.3%), compared to whites (25.9%) and Hispanics (35.0%); and is higher among those with lower incomes and less education.

The majority of the US population is now either overweight or obese. Excess body weight has many causes, including poor diet, lack of exercise, poor availability of healthy foods, lack of safe opportunities for exercise, traditional high calorie foods in the community and family, genetics, and diseases. Excess weight can also vary among racial/ethnic groups.

Percentage of Obese Adults, Houston-The Woodlands-Sugar Land Metropolitan Statistical Area 2002-2017



Obesity among HISD high school students has risen from 13.3% in 1999 to 20.4% in 2017. Obesity is higher among the Hispanic youth (24.2%) compared to black (16.4%) and white (8.2%) students.

DISABILITIES

Disabilities are most common among those who are over 65 years of age, and those with chronic diseases such as obesity, heart disease, or those who have a history of smoking. Disability is highest in Harris County among blacks (12.6%), followed by whites (8.5%), Asians (7.2%) and Hispanics (6.0%).

LIFE EXPECTANCY

Life expectancy, or the years an infant can be expected to live, has been steadily rising in the US until recently. In 1900, a male could expect to live 46.3 years, and a female 48.3 years. By 2014, those ages had become 76.5 years for men and 81.3 years for women.

These gains were not distributed equally, however. From 2001 to 2014, life expectancy for the top 5% of income earners rose by about three years, while life expectancy for the bottom 5% of earners saw no increase.

Life expectancy in Houston varies by up to 18 years, depending on the neighborhood one lives in. Residents in wealthy areas live longer.

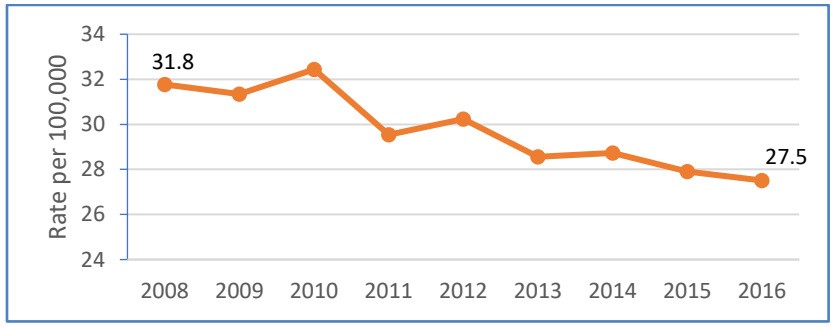
Morbidity: Communicable Diseases

Communicable diseases account for a smaller percentage of deaths than before antibiotics became available, but still remain major causes of illness, disability and death. In Texas, over 70 communicable diseases are required to be reported to the public health departments. This section presents data on some of the diseases of greatest concern for public health.

HIV/AIDS (Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome)

AIDS develops after years of HIV infection. In Houston/Harris County, the rate of new cases of HIV has been dropping, although the Houston area still has a much higher rate (27.5 per 100,000 population) compared to Texas (17.9) and the US (14.7).

Incidence (New Cases) of HIV in Houston/Harris County 2008-2016
Rate per 100,000 Population



Houston/Harris County rates are higher among men (43.7 per 100,000) compared to women (11.5) and among the black population (66.9 per 100,000) compared to whites (12.0) and Hispanics (24.1).

ACUTE AND CHRONIC HEPATITIS C

Hepatitis C is a liver disease that results from infection with the hepatitis C virus (HCV). The incidence of new cases has been rising in the past 10 years.

> Adults aged 50 and over have the highest incidence of hepatitis C, and are encouraged to be tested for the virus which can be dormant and yet serious.

SEXUALLY TRANSMITTED DISEASES (STDs)

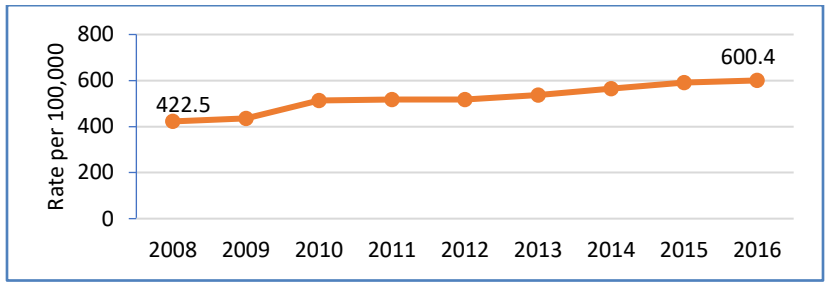
Syphilis

Syphilis is a sexually transmitted infection that can cause serious health problems if it is not treated. CDC recommends testing for syphilis for pregnant women, men who have sex with men, anyone living with HIV, and anyone who has a partner or partners who have tested positive for syphilis. Since 2008, the incidence of new cases of syphilis in Houston/Harris County has risen from 44.9 per 100,000 population to 53.7 per 100,000 in 2016. Syphilis is higher among males (88.6 per 100,000) compared to females (19.2); and among blacks (129.1 per 100,000 population) compared to the white (28.2) and Hispanic (44.5) populations.

Chlamydia

Chlamydia is a common sexually transmitted infection that can lead to serious health problems and difficulty getting pregnant if left untreated. Many people who have this infection don't know it, since there are often no symptoms.

Incidence (New Cases) of Chlamydia, Houston/Harris County TX 2008-2016 (Rate per 100,000 Population)



Rates of all the STDs that are reported to the health department have been rising during the past 10 years.

Gonorrhea

Gonorrhea is a sexually transmitted disease (STD) that can infect both men and women. It can cause infections in the genitals, rectum, and throat. The early disease may not have symptoms, but untreated gonorrhea can cause serious and permanent health problems in both women and men. Since 2008, the incidence of new cases of gonorrhea in Houston/Harris County has risen from 152.7 per 100,000 to 184.1 per 100,000 in 2016.

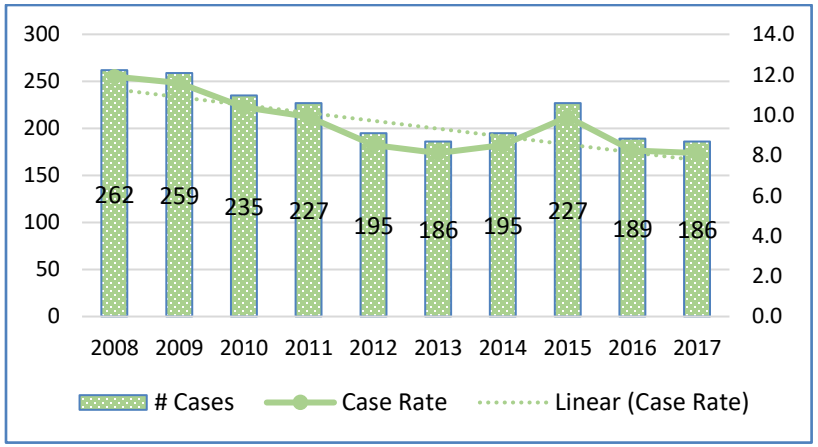
TUBERCULOSIS

Tuberculosis (TB) is a bacterial disease primarily affecting the lungs. An individual with TB disease transmits the disease through the air when he/she coughs, sneezes, laughs, or sings. TB was once one the leading cause of death in the US, but the use of antibiotics greatly reduced the rates of infection and mortality. Worldwide, TB rates have been on the decline; however, strains of TB resistant to multiple forms of antibiotics have increased.

The rate of new TB cases is higher in Houston (8.1 per 100,000) compared to the US (2.8 per 100,000). Rates are higher among the Hispanic population compared to other racial/ethnic groups. The number of new cases and the rate per 100,000 both have dropped in the past 10 years.

TB New Cases and Case Rates, City of Houston 2008-2017

Total Cases (left side scale) and Rate per 100,000 Population (right side)



HOUSTON HEALTH DEPARTMENT

Morbidity: Top 10 Chronic Diseases

Chronic diseases are defined broadly as conditions that last one year or more and require ongoing medical attention or limit activities of daily living or both. Chronic diseases such as heart disease, cancer, and diabetes are the leading causes of death and disability in the United States.

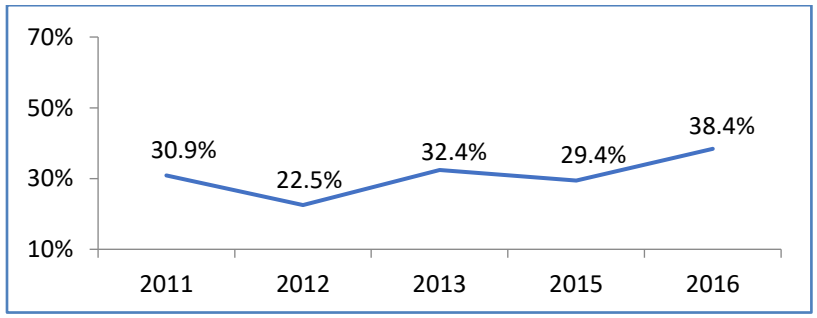
> Six in ten US adults have a chronic disease.

For this report, chronic conditions and diseases are listed according to the percentages of Harris County residents who reported on the Texas BRFSS survey that they are dealing with these conditions.

#1 HYPERTENSION—38.4%

Hypertension, or high blood pressure, contributes to stroke, heart attacks, heart failure, kidney failure, and atherosclerosis.

Percentage of Adults with High Blood Pressure, Harris County 2011-2016



Hypertension is higher among Harris County adults who are:

- Black (38.0%) compared to white (32.5%) and Hispanic (18.9%)
- Those earning less than $50,000 per year (30.2%-32.5%) compared to those earning more than $50,000 (23.5%)

#2 OBESITY—32.0%

Obesity, defined as a Body Mass Index (BMI) of 30 or greater, increases the risk of many diseases and health conditions, including heart disease, type 2 diabetes, cancer, hypertension, stroke, liver and gallbladder disease, respiratory problems, and osteoarthritis. Obesity rates are rising in Houston/Harris County, and are higher among minority groups and those with lower incomes.

#3 ARTHRITIS—16.9%

Arthritis is a collection of conditions and disorders of the joints, bones, muscles, cartilage and other connective tissues. Arthritis is the number one cause of disability in the US. In Houston/ Harris County, arthritis is more common among:



- Older persons; 51.0% of those aged 65+ have arthritis
- Those with incomes under $25,000 per year (19.0%) compared to those earning $50,000 or more (17.0%)
- Whites (24.1%) compared to blacks (22.7%) and Hispanics (10.0%)

#4 DEPRESSIVE DISORDERS—12.6%

Depressive disorders are characterized by sadness severe enough or persistent enough to interfere with function, and often by fatigue and a decreased interest or pleasure in daily activities. Depressive disorders in the greater Houston area are more common in:

- Whites (19.0%), followed by Hispanics (14.7%) and blacks (12.6%)
- Those with less than a $25,000 income (23.3%) compared to those with higher incomes (11.0% to 12.6%)
- Females (18.3%) compared to males (11.9%)

#5 DIABETES—10.2%

More than 25 million people in the US have diabetes, including both diagnosed and undiagnosed cases. This disease can have a harmful effect on most of the organ systems in the human body. Diabetics are at increased risk for kidney disease, lower leg amputations, blindness, ischemic heart disease, neuropathy, and stroke.

#6 CANCER—9.4%

Cancer is a serious condition that causes cells to divide uncontrollably. It can lead to tumors and many other harmful impacts on the body. It is also the second leading cause of death in the US and in Harris County. Improvements in treatment and longer survival rates mean that for many people, cancer is a chronic disease.

#7 ORAL DISEASE—8.4%

Oral health impacts overall health and well-being: it affects one's ability to speak, smile, eat, and show emotions, as well as self-esteem, school performance, and attendance to school and work. According to US Surgeon General "You cannot be healthy without good oral health." In Harris County, in 2016, 8.4% of adults who responded to the BRFSS reported they had six or more teeth (but not all teeth) removed because of tooth decay or gum disease.

#8 ASTHMA—6.5%

Asthma is a condition in which a person's air passages become inflamed, and the narrowing of the respiratory passages makes it difficult to breathe. These symptoms are often brought on by exposure to inhaled allergens such as dust, pollen, mold, cigarette smoke, and animal dander, or by exertion and stress.

#9 HEART DISEASE—6.4%

Heart disease is a term that encompasses a variety of different diseases affecting the heart such as rheumatic fever, chronic heart failure, and acute myocardial infarction (heart attack). The most common type in the United States is coronary artery disease, which can cause heart attack, angina, heart failure, and arrhythmias.

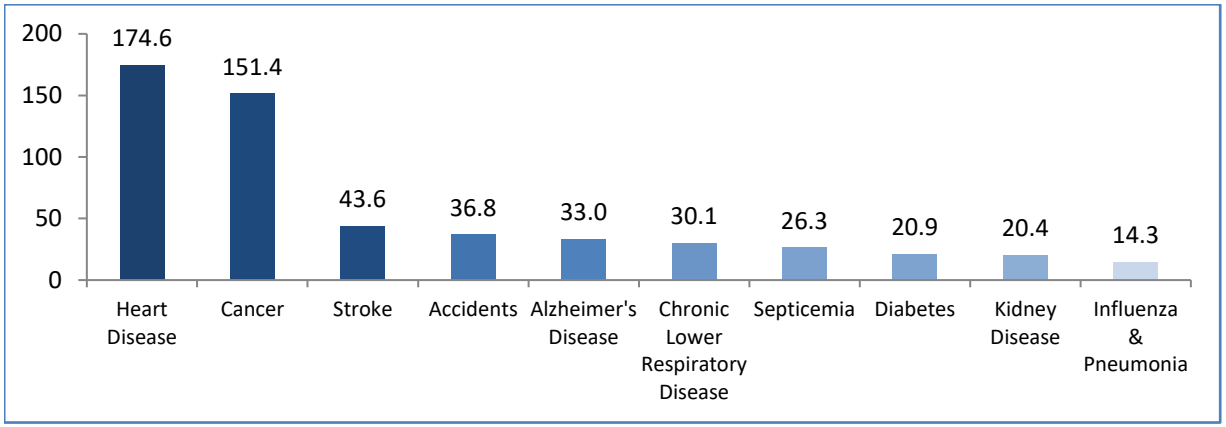
#10 CHRONIC OBSTRUCTIVE PULMONDARY DISEASE (COPD)—6.4%

Chronic obstructive pulmonary disease, or COPD, refers to a group of diseases that cause airflow blockage and breathing-related problems. COPD most commonly includes chronic bronchitis and emphysema and usually results from tobacco use, although it can also be a result of pollutants in the air, genetic factors, and respiratory infections.

Mortality: Top 10 Causes of Death

The mortality rates in the following chart show the number of deaths per 100,000 for the leading causes of death in Harris County.

Top 10 Causes of Death, Harris County TX 2015
Age-Adjusted Rate per 100,000 Population*



*Age-adjusted rates compensate for age differences in the population

The top two causes of death, heart disease and cancer, led to the highest rates of death, by far, and both have many risk factors that are attributed to health behaviors.

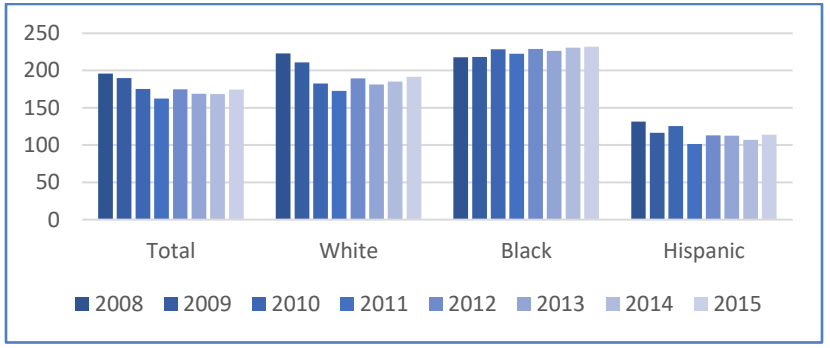
Across all causes of death, the Hispanic population had lower age-adjusted mortality rates, on average, than the black or white populations. Mortality rates for males were higher than for females for all causes of death except for Alzheimer's Disease.

Age differences impact the major causes of death, as well. Unintentional injuries (accidents), suicides, and homicides are much higher in younger age groups, while heart disease and cancer are highest in those aged 45 and above.

#1 HEART DISEASE

Heart disease encompasses many disorders that affect the heart, and is the leading cause of death for both men and women in the US. Heart disease is the leading cause of death for people of most racial/ethnic groups in the US as well, including African Americans, Hispanics, and whites. It is second only to cancer for Asian Americans.

Heart Disease Mortality Rate by Race/Ethnicity, Harris County TX 2008-2015 Age-Adjusted, Per 100,000 Population

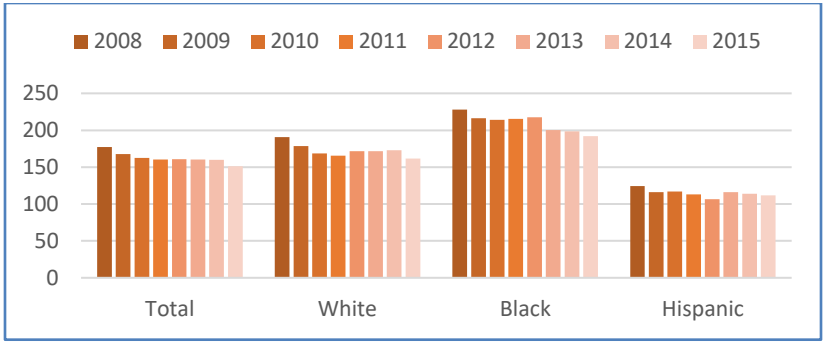


HOUSTON HEALTH DEPARTMENT

#2 CANCER

Cancer describes diseases in which abnormal cells divide without control and invade other tissues. There are over 100 different types of cancer, but breast, colon, lung, pancreatic, prostate, and rectal cancer lead to the greatest number of annual deaths. Risk factors of cancer include age, alcohol use, tobacco use, a poor diet, certain hormones, and sun exposure.

Cancer Mortality Rate by Race/Ethnicity, Harris County TX 2008-2015 Age-Adjusted, Per 100,000 Population



#3 CEREBROVASCULAR DISEASE (CVD)/STROKE

Death from stroke was higher among the black population (57.3 per 100,000) than whites (44.2) or Hispanics (32.0) in Harris County in 2015.

#4 ACCIDENTS

Accident deaths were highest among the white population (50.1 per 100,000 population), followed by blacks (37.2) and Hispanics (26.1). More males (43.9) died in accidents than females (23.4).

#5 ALZHEIMER'S DISEASE

Whites (40.3 per 100,000) were more likely to die of Alzheimer's disease than blacks (29.9) or Hispanics (22.9), and females (35.2) were more likely to die compared to males (25.9).

#6 CHRONIC LOWER RESPIRATORY DISEASE (COPD)

Whites (41.1 per 100,000) were more likely to die from COPD compared to blacks (26.2) and Hispanics (12.8).

#7 SEPTICEMIA

Septicemia, or blood poisoning, comes from a bacterial infection elsewhere that enters the blood stream. Death is more common in blacks (44.0 per 100,000) than whites (22.8) and Hispanics (23.2).

#8 DIABETES

Diabetes is a group of diseases marked by high levels of blood glucose. Deaths from diabetes are more frequent among blacks (36.1 per 100,000) compared to whites (16.8) and Hispanics (23.5).

#9 KIDNEY DISEASE

Deaths from kidney disease were highest among blacks (34.5 per 100,000), followed by Hispanics (18.1) and whites (17.0).

#10 INFLUENZA & PNEUMONIA

Influenza (flu) and pneumonia are often reported together because pneumonia is frequently a complication of influenza. Mortality rates from influenza and pneumonia were highest among the white population (15.3 per 100,000), followed by the black (14.5) and Hispanic (9.7) populations.

Taking Action

ROBERT WOOD JOHNSON FOUNDATION/ HOUSTON HEALTH DEPARTMENT

The root causes of health disparities are pervasive in our society. For improvements to take place, many sectors of society will need to be involved. The Robert Wood Johnson Foundation (RWJF) has been one of the leaders in providing guidance about developing health equity. The figure to the right was created by the Houston Health Department based on work done by RWJF.

The model describes the interplay between key community sectors and the roles each can take to promote health equity: policy makers, housing and transit, community development, criminal justice, health and healthcare, media, education, and employers.



THE NATIONAL EQUITY ATLAS

The National Equity Atlas suggested the following to grow an equitable economy:

- Policies to build communities of opportunity
- Require or incentivize the inclusion of affordable housing within new developments using inclusionary zoning, community benefits agreements, density bonuses, or other tools
- Implement equitable economic development and community wealth-building strategies that bring jobs, sustainable infrastructure, and business opportunities to residents of high-poverty neighborhoods
- Ensure enforcement of fair housing laws and the application of HUD's commitment to "affirmatively further fair housing"
- Dismantle exclusionary zoning policies and develop new affordable homes in high-opportunity neighborhoods

THE CONCEPTUAL MODEL TO PROMOTE HEALTH EQUITY

The ***Conceptual Model to Promote Health Equity***, developed by the National Academy of Sciences, recommends collaboration involving diverse partners such as agriculture, banking and finance, business and industry, economic development, education, media, public health, transportation, and workforce development. Many sectors in the community can have a measurable impact on improving health equity: policy makers, employers, media, education, health and health care, criminal justice, community development, and housing and transit.

In this model, partners from diverse sectors are convened so that collective skills and resources can be leveraged for the health and well-being of a community. The public sector can identify and monitor indicators of health equity, build community capacity, organize interventions, and evaluate results. The private sector can create jobs locally to boost the economy and generate innovative solutions to some of the intractable social problems. Some private sector industries thrive on disruption, innovation and paradigm shifts. This type of collaboration can encourage fresh thinking.

The Conceptual Model lists three strategies that need to be adopted by communities to improve health equity:

1. Involvement of all community sectors, to come together and create a shared vision valuing health equity
2. Building community capacity to provide tools to help residents advocate for themselves
3. Emphasizing collaboration across sectors

THE ROLE OF PUBLIC HEALTH

Public health has a unique role in bringing positive change to the health inequities in our area.

Some of the actions for public health can include:

- Gather and report data on health inequities in our local area
- Educate the community and policy makers about health inequities in our community, the cost of these inequities to our most vulnerable and to the community as a whole, and steps to take toward solutions
- Provide leadership in convening community members and organizations
- Promote community capacity building that trains community members and leaders in advocacy skills that will help them to improve their neighborhoods