

Connecticut Maternal and Child Health Block Grant Needs Assessment 2020 Health Status Data Report



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EXECUTIVE SUMMARY

Introduction

As part of the Title V Block Grant Program, the Connecticut Department of Public Health undertakes a Maternal and Child Health (MCH) Needs Assessment for the state, examining the health status of Title V target populations of pregnant women, mothers, and infants; children and adolescents; and children and youth with special healthcare needs. This assessment is a systematic examination of the health behaviors, conditions, and risk factors of these populations, using indicators that can be tracked over time and for particular population subgroups. The Connecticut MCH Block Grant Needs Assessment aims to serve as an important foundation for future data-driven planning efforts in the state.

America's Health Rankings 2018 Annual Report ranked Connecticut as the third healthiest state in the country, routinely surpassing the U.S. national average on key indicators of population health. Many advancements have been made in recent years, including reductions in the teen birth rate, increases in developmental screening in young children, and reductions in motor vehicle crashes and ED visits for adolescents. Despite this high standing, a closer look reveals areas of disparity, inequity and identified need for the MCH population.

The health of mothers, infants, and children are important indicators of community and state well-being. Health disparities exist between non-Hispanic White and Hispanic, non-Hispanic Black/African American, and non-Hispanic Other race populations. Addressing racial and ethnic disparities and reducing inequalities in maternal and child health indicators remains one of the major challenges facing the public health community. This effort requires coordinated and simultaneously executed multi-ecological strategies, which is a priority for the State of Connecticut.

Methodology

The process for completing the MCH Block Grant Needs Assessment was built upon engagement processes from the 2019 Connecticut State Health Assessment (SHA) with involvement of the Connecticut Maternal and Child Health Coalition.

Data collection included focus groups with MCH stakeholders across the state, public and partner input, Connecticut Department of Public Health (CT DPH) input, and analysis of secondary data. Data sources included the Connecticut School Health Survey, Hospital Discharge Data, the National Survey of Children's Health, the Pregnancy Risk Assessment Monitoring System, Vital Records, and the U.S. Census.

Key Findings

Women's and Maternal Health

Just over half of women who gave birth in Connecticut in 2016-2018 were non-Hispanic White, one quarter were Hispanic, 12.2% were non-Hispanic Black, and 10.2% were non-Hispanic Other race. Hispanic and non-Hispanic Black women were disproportionately likely to reside in a female-headed household.

Connecticut has the third lowest teen birth rate in the country. However, among all women giving birth, prevalence of unintended pregnancy was high, especially for non-Hispanic Black women (57.0%). This could contribute to racial disparities in maternal morbidity and mortality. In the three months prior to becoming pregnant, diabetes was most prevalent among non-Hispanic Other race women (3.3%), high blood pressure among non-Hispanic Blacks (7.1%), depression among non-Hispanic Whites (10.9%), poly-cystic ovarian syndrome (PCOS) among non-Hispanic Other race (6.2%), and anxiety among non-Hispanic Whites (22.1%). Non-Hispanic Black and Hispanic women were more likely to be overweight or obese than their non-Hispanic White or non-Hispanic Other race counterparts.

During pregnancy, 11.2% of women in Connecticut developed preeclampsia in 2016-2018, which was highest among non-Hispanic Black women (16.3%) and lowest among non-Hispanic Other race women (7.0%). Overall, 10.6% of women in Connecticut developed gestational diabetes, which was highest among non-Hispanic Other race women (16.0%) and lowest among non-Hispanic White women (6.5%). The prevalence of gestational diabetes was also strikingly high among the uninsured (17.1%), and is increasingly common with age. Overall, 7.3% of women had thyroid problems, with the highest prevalences among non-Hispanic White women and older women. Finally, 3.7% of women had PCOS, with a range of 4.4% among non-Hispanic White women to 2.2% among non-Hispanic Black women. Approximately eight to ten women die in Connecticut each year, due to pregnancy-related causes.

In 2016-2018, 11.6% of women in Connecticut reported postpartum depressive symptoms. However, the racial/ethnic patterns shift, with lowest prevalence among non-Hispanic White women (9.3%) and highest among non-Hispanic Other race women (19.4%). Among these women, less than half sought help for their symptoms, ranging from 20.8% of non-Hispanic Other race women to 44.6% of non-Hispanic White women.

Perinatal and Infant Health

Singleton preterm birth and low birthweight (LBW) rates show persistent racial disparities in Connecticut. In 2014-2018, 6.2% of non-Hispanic White women gave birth preterm, compared to 10.4% of non-Hispanic Black women. Similarly, 4.4% of non-Hispanic White women gave birth to an infant with LBW, compared to 9.8% of non-Hispanic Black women. These patterns have been consistent for nearly 20 years, if not longer. Connecticut's infant mortality rate (IMR) was 4.6 deaths per 1,000 live births in 2017 down from 5.9 deaths per 1,000 live births in 2005 – a decrease of about 2.4% each year. Connecticut's IMR has consistently remained well below both the US rate and the Healthy People 2020 target of 6 deaths per 1,000 live births since 2010; however, disparities persist. Non-Hispanic Black infants were more than three times as likely to die and Hispanic infants were 1.5 times more likely to die than non-Hispanic White infants in Connecticut in 2017.

Racial disparities in infant health continue postnatally. The vast majority of women in Connecticut reported that their health care provider had recommended they place their infants to sleep on their backs during 2016-2018. However, fewer women reported actually putting their infants to sleep on their backs only. Only 62.2% of Black women reported solely back sleeping compared to 87.0% of White women. Breastfeeding practices also vary by race/ethnicity. While 85-95% of women of all race/ethnicities report initiating breastfeeding postpartum, by 8 weeks, only two-thirds of Hispanic and non-Hispanic Black women are still breastfeeding, compared to 72.9% of non-Hispanic Whites and 82.2% of non-Hispanic Other race women.

An increasing concern in Connecticut is infants born with Neonatal Abstinence Syndrome (NAS) – a condition where a neonate goes through withdrawal from certain drugs that they were exposed to in the womb. Most commonly, NAS is due to chronic maternal opioid exposure. In Connecticut, the number of hospital discharges for infants born with NAS in 2017 (n=440) was three times higher than the number in 2003 (n=137). Collaborative partnerships have formed in Connecticut between non-governmental professional organizations, multiple state agencies, and public/private professional organizations to address NAS in the state.

Child Health

Overall, 92.2% of children aged 0-17 Years old were reported to have excellent or very good health in Connecticut in 2017-2018. However, disparities exist in some manageable and preventable childhood conditions, indicating room for improvement. Just under 10% of children in Connecticut currently had asthma in 2019, ranging from a prevalence of 8.2% in families earning >\$75,000 annually to 14.1% in families earning <\$35,000. In 2019, 14.3% of children in Connecticut had dental decay in the past year. However, the proportion varies substantially by sociodemographic subgroups. Families with incomes >\$75,000 had the lowest prevalence of children with dental decay (10.9%), while children in families earning <\$35,000 had the highest (20.7%). Similar disparities exist by race and insurance coverage for both asthma and dental decay.

The medical home model for children and adults is a proven approach to provide comprehensive and high-quality primary care. In 2017-2018, Connecticut (49.4%) trailed the U.S. average (59.9%) in the proportion of children without special health care needs who received coordinated, ongoing, and comprehensive care within a medical home. Connecticut also exhibits disparities across race and ethnicity for children receiving care within a medical home. Non-Hispanic White children receive care within a medical home 32% more than non-Hispanic Black children, 30% more than Hispanic children, and 14% more than non-Hispanic children of any race.

The proportion of children with a mental/behavioral health condition who received treatment or counseling declined in both Connecticut and the U.S. between 2011-2012 and 2017-2018. In Connecticut, the proportion declined from 69.9% to 56.6%. Between 2012 and 2017, the proportion of children under three years-old who received a developmental screening rose consistently from 16.2% to 39.8%. However, this is still less than half of the population, indicating that improvement is still needed, but appears promising, given the current trend lines.

Adverse Childhood Experiences (ACEs) are stressful or traumatic events, including abuse, neglect and household dysfunction that occur during childhood. Adverse childhood experiences and trauma are risk factors for depression, anxiety, and post-traumatic stress disorder. In their most extreme form, ACEs can result in death. In Connecticut in 2015-2018, over two out of five deaths due to family violence occurred among Connecticut's youngest residents between 0-17 years of age. Non-Hispanic White residents comprised the largest proportion of deaths related to family violence, followed by non-Hispanic Black and Hispanic residents, respectively. Based on population rates, non-Hispanic Black residents had proportionately higher rates than other race and ethnicity groups. To address the immediate threat of violence, as well as long terms health consequences, the State of Connecticut is engaged in several public health and policy initiatives.

Children with Special Healthcare Needs

Children and youth with special health care needs (CYSHCN) have or are at increased risk for chronic, physical, developmental, behavioral, or emotional conditions. In addition, they often require more health-related services beyond what is required by children generally. There is a well-documented benefit for children in having health insurance. In 2001, nearly three-quarters of children and youth with special health care needs had private insurance (73%). However, in 2016, the proportion of children and youth with special health care needs who had either private or public insurance was split relatively evenly (54% and 48%, respectively).

Among CYSHCN, Connecticut (42.7%) was slightly ahead of the U.S. average (39.8%) in the proportion of children who received coordinated, ongoing, and comprehensive care within a medical home in 2017-2018. In contrast, only 50.4% of CYSHCN in Connecticut were reported as receiving needed and effective care coordination, compared to 59.8% of children in the U.S. on average, in the same time period. Connecticut (13.5%) also trailed the U.S. (18.9%) in the proportion of 12-17-year-old CYSHCN who received the services needed to transition to adult health care. Families of CYSHCN reporting receiving care in a well-functioning system varied greatly by age. In 2017-2018, the proportion was 24.0% for 0-5-year-olds, 32.0% for 6-11-year-olds, and 3.3% for 12-17-year-olds. Overall, 11.2% of parents of CYSHCN reported they were usually or always frustrated getting services for their child, compared to only 0.3% of parents of children without special health care needs.

The prevalence of mental/behavioral health conditions has been increasing among children and has been found to vary by geographic and sociodemographic factors. Further, the receipt of treatment is also generally dependent on sociodemographic and health-related factors. Adequate insurance and access to a patient-centered medical home may improve mental health treatment. In Connecticut, a slightly higher proportion of NH White children with a mental/behavioral condition received treatment or counseling, compared to Hispanic children with a mental/behavioral condition (71% and 66%, respectively). Conversely, 29% of NH White children and 34% of Hispanic children with a mental/behavioral condition did not receive treatment or counseling. In 2017-2018, 4.0% of children (aged 3-17) in Connecticut had ever been diagnosed with Autism Spectrum Disorder (ASD). This is almost double the national percentage. This may speak to more awareness and screening of ASD among Connecticut residents when compared to the US overall.

Adolescent Health

Use and misuse of illicit drugs, such as heroin, fentanyl and cocaine, prescription opioid medications and alcohol are major issues nationally and in Connecticut. In recent years illicit drug use among Connecticut high school students has declined. Nonetheless, over 10% of high school students reported ever taking prescription pain medication for non-medical reasons. Prevalence was highest among Hispanics (14.2%) and lowest among Whites (8.0%). Prevalence was notably consistent across grade levels. Only 3.7% of Connecticut high school students currently smoke cigarettes and only 1.3% report frequent use. In contrast, 44.8% report ever using an electronic vaping product, 27.0% report current use, and 8.5% report frequent use.

Bullying is considered a traumatic event, and fighting may be considered either a traumatizing experience or a consequence/outcome of having repeated exposure to trauma. Bullying also indicates disruption in the school setting that impacts school connectedness, which is an important protective factor for substance use, sexual behavior, mental health, and academic success. In recent years,

Connecticut females were more likely than Connecticut males to be bullied on school property. In 2019, 21.3% of females and over 14% of males reported being bullied on school property in the past 12 months. Bullying was more common among younger students and among Hispanics and non-Hispanic Whites, compared to non-Hispanic Blacks. The percentage of females being cyberbullied is also consistently higher than the percentage of males in recent years, with 17.3% of females and 11.4% of males reporting the experience in the past 12 months. Youth who identify as lesbian, gay, bisexual, transgender, or queer (LGBTQ) are more likely to be bullied, both on school property and electronically, when compared to students who identify as heterosexual. The percentage of LGBTQ youth who reported cyberbullying was almost double the percentage of heterosexual youth who reported cyberbullying, 26.9% versus 14.9%.

In the 2019, the prevalence of physical dating violence was 8.7% among students who reported only opposite sex partners, compared to 19.5% among students with partners of the same sex or both sexes. Prevalence of sexual dating violence varied dramatically among high school students, with 8.8% of heterosexual students reporting it, compared to 24.2% of those identified as being gay/lesbian/bisexual, and 25.4% of those “unsure” of their sexual identity. Among Connecticut high school students, 7.5% report being forced to have sexual intercourse in their lifetimes. Prevalence was 4.1% of heterosexual students, compared to 17.9% of gay/lesbian/bisexual students, and 6.1% of those unsure of their identity.

Nationally, suicide contemplation by high school students in the last 12 months was 17.2%. By comparison, Connecticut is below the national average. In 2019 15.9% of females and 9.3% of males reported considering suicide in the past 12 months. In 2019, 8.3% of females and 5.2% of males attempted suicide. Significantly more Hispanic students (10.1%) attempted suicide compared to Blacks (5.8%) and Whites (5.7%). In 2017, 5.8 youths (aged 10-19 years) per 100,000 died by suicide in Connecticut. In 2018, the rate was 2.8 per 100,000.

Conclusions

While overall health in Connecticut is very good, sociodemographic disparities persist, shaped by pervasive structural and institutional social determinants of health. For many health indicators, persons of color (anyone other than non-Hispanic White) experience a greater share of adverse health events.

Many of the issues raised from this assessment are therefore driven by the goal of advancing the health of priority populations to the high standards of health obtained by more privileged residents of Connecticut. Based on this assessment, emergent themes in maternal and child health in Connecticut are highlighted by life course stage.

Women’s and Maternal Health

- Disparities in Maternal Morbidity and Mortality
- Disparities in Preconception and Interconception Health
- Mental Health and Help-seeking

Perinatal and Infant Health

- Persistent disparities in LBW and Infant Mortality
- Neonatal Abstinence Syndrome
- Disparities in sleeping and feeding

Child Health

- Medical Home
- Violence, Adversity, and Mental Health

- Disparities in Manageable/Preventable Childhood Conditions

Children with Special Healthcare Needs

- Medical Home
- Adequate/Continuous Insurance Coverage
- Mental Health Treatment/Counseling

Adolescent Health

- Substance use (vaping, prescription opioids)
- Risk-Taking and Self-Harm (unsafe driving, suicide)
- Bullying and Violence (LGBTQ, sexual violence)

The data contained in this report indicate that major improvements in the health of mothers, infants, and children in Connecticut have been made. However, much remains to be done to achieve optimal outcomes for these populations. The lifetime effects of race, racism, social class, poverty, stress, environmental influences, health policy, and other social determinants of health are reflected in the elevated rates of adverse outcomes and persistent disparities. While we continue to strive to reduce health inequities, these challenges also are apparent at the national level and are not unique to Connecticut. The continuation of evidenced-based programs, coupled with efforts to increase health equity and address social determinants of health, are essential to achieving improved birth outcomes and reducing/eliminating disparities for mothers, infants and children in Connecticut.

As we move from assessment to planning, we will look at the common upstream factors of SDOH as cross-cutting themes to identify systemic inequities that impact prioritized health issues. By focusing on these determinants of health, engaging cross-sector partners, identifying alignment of efforts and collaboratively exploring strategic opportunities, we will create a roadmap for collaborative health improvement activities over the next five years and will prioritize health equity for all Connecticut's MCH population.

INTRODUCTION

In order to fully understand the state of Connecticut's maternal, infant, and child health outcomes, it is essential to understand the fundamental sociodemographic factors that contribute to certain populations experiencing a greater burden of ill health; the difference in these health outcomes on a population level are health disparities. The World Health Organization states that "what makes societies prosper and flourish can also make people healthy." Connecticut is doing well from a national perspective; America's Health Rankings 2018 Annual Report noted that Connecticut is the third healthiest state in the country. A closer look at this overall healthy ranking reveals areas of disparity and inequity that highlights needs for the Maternal and Child Health (MCH) population. As the most diverse state in New England, there is a need for increased focus on disparate populations to respond more equitably to the challenges that are faced by historically underrepresented groups.

In addition to sociodemographic characteristics, the *context* of communities also plays a crucial part in contributing to poor health outcomes, broadly defined as the social determinants of health. The County Health Rankings model estimates that about 50% of a person's health is associated to both social and economic factors, and the physical environment. In this report, we focus on income and poverty, housing quality and affordability, education, and access to transportation. These determinants of health are those elements of everyday life in which people have little direct control and are often related to government policies or neglect but have real life implications in determining whether someone can achieve their optimal health status. We will specifically look to where these factors are inequitably distributed to identify areas of improvement as we move towards the vision of *Healthy People in Healthy, Equitable Connecticut Communities*.

The health of mothers, infants, and children are important indicators of community and state well-being and are critical for the nation's future prosperity. Although residents of Connecticut report good health status overall relative to the U.S., large health disparities exist between non-Hispanic White and the non-Hispanic Black/African American and Hispanic populations. Disparities among the indicators presented in this report are significant and persistent. Addressing racial and ethnic disparities in the state is a priority. Reducing inequalities in maternal and child health indicators remains one of the major challenges facing the public health community, requiring coordinated and simultaneously executed multi-ecological strategies.

The data contained in this report indicates that major improvements in the health of mothers, infants, and children in Connecticut have been made; most notably, declines in infant mortality and teen birth rates. However, much remains to be done to achieve optimal outcomes for all Connecticut mothers, infants, and children. The lifetime effects of race, racism, social class, poverty, stress, environmental influences, health policy, and other social determinants of health are reflected in the elevated rates of adverse outcomes and persistent disparities. The continuation of evidenced-based programs, coupled with efforts to increase health equity and address social determinants of health, are essential to achieving improved birth outcomes and eliminating disparities. These challenges also are apparent at the national level and are not unique to Connecticut.

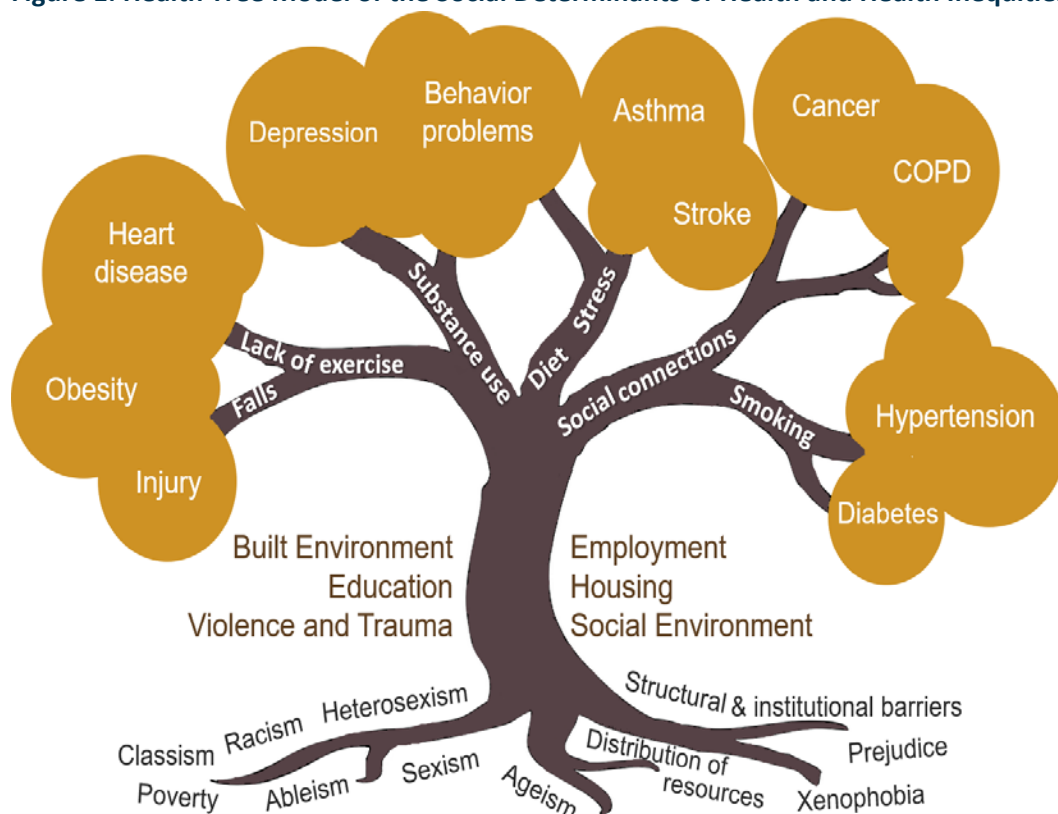
FRAMEWORK FOR MCH BLOCK GRANT NEEDS ASSESSMENT PROCESS

The Maternal and Child Health Block Grant (MCHBG) Needs Assessment process began as a component of the larger Connecticut State Health Assessment (SHA) and Improvement Planning process. The MCHBG Needs Assessment has been expanded to include additional data and population stratifiers. The following section describes the framework and methodology used for the MCHBG Needs Assessment.

The MCHBG Needs Assessment process was guided by:

1. a social determinants of health framework to explore the upstream factors that influence population health,
2. a health equity lens to identify differential patterns of health across population groups, and
3. life course perspective to examine risk and protective factors across the lifespan.

Figure 1: Health Tree Model of the Social Determinants of Health and Health Inequities



Source: Health Resources in Action, 2019

SOCIAL DETERMINANTS OF HEALTH

The Social Determinants of Health (SDOH) are the upstream non-health factors that “impact a wide range of health, functioning and quality of life outcomes”¹ or public health. The SDOH framework is built upon “the relationship between how population groups experience ‘place’ and the impact of ‘place’ on health.”¹ The Health Tree model (Figure 1) represents the roots of health disparities and inequities that influence behavior and affect the patterns of health outcomes we observe in different populations in our society. By focusing on the “roots” of the problems and developing strategies to address them, we can influence varied health outcomes for priority populations.

There are five key SDOH areas: education; neighborhoods and the built environment; the social and community context of where people live, work, or play; health and health care; and economic stability. Figure 2 shows some examples of social determinants representing these key areas. These SDOH have been linked to maternal and child health outcomes. As Healthy People 2020 notes, prepregnancy health behaviors and health status are influenced by access to medical care. Children reared in safe nurturing families and neighborhoods that are free from maltreatment and other social problems are more likely to have better health outcomes.

Figure 2: The Social Determinants of Health



Source: [National Academy of Medicine](#), Sanne Magnost

As noted in the 2019 Connecticut State Health Assessment (SHA), when considering these upstream factors in the work of a public health entity such as the Connecticut Department of Public Health (CT DPH), we can more effectively inform the public and policymakers so we can all live better lives. As an

agency whose mission declares that the equal enjoyment of a person’s highest attainable standard of health is a human right, we must also examine the conditions that contribute to “avoidable differences in health among specific population groups that result from cumulative social disadvantages.”² More specifically, we apply an equity lens to determine which populations are being most negatively impacted.

For additional data on social determinants of health in Connecticut, see the 2019 Connecticut State Health Assessment (SHA), Section One: Describing Connecting (<https://portal.ct.gov/DPH/State-Health-Planning/Healthy-Connecticut/Healthy-Connecticut-2025>).

Health Equity

“Health equity means that everyone has a fair and just opportunity to be as healthy as possible. 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.”

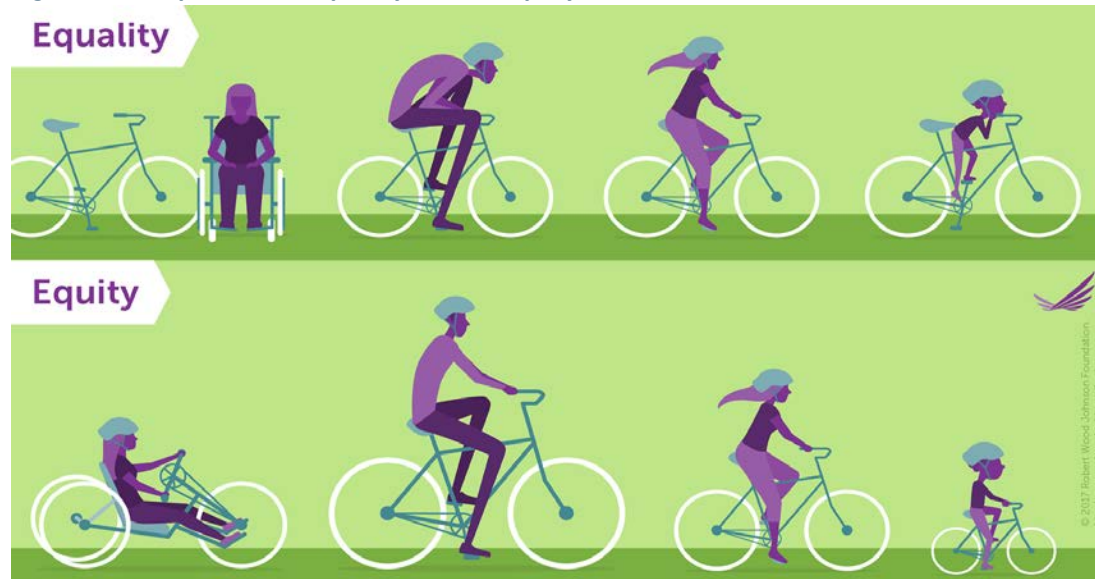
- Robert Wood Johnson Foundation

When compared to other states across the county, Connecticut is a healthy state, with numerous successes to celebrate. Over the past decade, Connecticut has experienced generally high levels of immunizations, a decline in teen births, and a decrease in infant mortality. While we should celebrate Connecticut’s favorable health profile, the health of Connecticut residents is not equal across all populations. Regions in Connecticut and specific population groups consistently experience less favorable health outcomes compared to other parts of the state and the general populace. Barriers to opportunities to live a healthy life may be disproportionately concentrated among certain populations, such as racial and ethnic minorities, low-income populations, residents in rural and urban areas, and persons with disabilities. When we look beneath the state averages at many of the health outcomes included in this MCHBG Needs Assessment, we see striking health disparities by race, ethnicity, income, and geography.

Health disparities are preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations.³ When we observe differences related to factors such as race, ethnicity, gender, education or income, disability, geographic location (e.g., rural or urban), or sexual orientation, this indicates that there is inequitable treatment or distribution of resources at play. Figure 3 provides an analogy to represent the distinction between the concepts of equality and equity, as they relate to health equity. Health disparities are inequitable and are directly related to the historical and current unequal distribution of social, political, economic, and environmental resources.

In this report, we present health patterns for Connecticut overall and areas of need for population groups. Understanding factors that contribute to health patterns for these populations can facilitate the identification of data-informed and evidence-based strategies to give everyone an opportunity to live a healthy life.

Figure 3: Comparison of Equality Versus Equity



Source: Robert Wood Johnson Foundation, 2017

Life Course Perspective

The life course perspective builds on the social determinants of health and health equity frameworks to further our understanding of factors that promote health and contribute to health patterns.⁴ The life course perspective facilitates an understanding of how risk and protective factors, such as social, economic, and environmental influences, experienced over the life course of an individual or population may contribute to current and subsequent health patterns across populations.⁵ The life course perspective also recognizes the influence of interventions throughout the life course to reduce risk factors and enhance protective factors to improve the health and well-being of individuals and populations.

METHODOLOGY FOR MCH BLOCK GRANT NEEDS ASSESSMENT PROCESS

Methodology

The process for completing the MCHBG Needs Assessment was built upon engagement processes from the 2019 Connecticut State Health Assessment with involvement of the Connecticut Maternal and Child Health Coalition. The Connecticut Maternal and Child Health Coalition is a group of almost 200 stakeholders representing all aspects of maternal and child health. Members include health care providers, human services organizations, and advocates who meet regularly to advance the health of mothers and children throughout the State. The group met in March 2020 to discuss data and provide insight into potential MCH priorities in the state.

Health Resources in Action (HRiA), a non-profit public health organization based out of Boston, MA, provided technical assistance, data synthesis, and compiled narrative for the MCHBG Needs Assessment report.

Community Involvement

The MCH chapter of the SHA acts as the core for the MCHBG needs assessment. Community engagement for the SHA included a series of focus groups conducted in collaboration with faculty and students from the University of Connecticut School of Public Health. The purpose of these focus groups was to identify community health concerns, assets and barriers to health; recommendations to address community health priorities; and residents' vision for the future. Maternal, infant, and child health-specific populations represented in focus groups included:

- Black/African American Women
- Families Affected by Autism
- Families of Children with Special Healthcare Needs
- Hispanic Community
- LGBTQ Younger Adults

Public and Partner Input

CT DPH held two data presentations with the Coalition and local health partners to share preliminary findings from the health assessment and solicit feedback on its development. Both presentations occurred in August 2019. In addition, to further ensure that this report represents the perspectives and speaks to the most important needs of Connecticut's residents, CT DPH presented a draft of this assessment report on its website for a public comment period in November of 2019.

The input collected from the community via these various means is detailed in a companion document, "Community Engagement." Companion documents are available on the Coalition website.

Assets and Resources

As CT DPH teams gathered and analyzed data for the assessment, they also compiled a list of programmatic and state-wide assets. Additionally, through an analysis of local community health assessments, hospital health needs assessments, and partner input, community assets were added to develop a comprehensive list.

Review of Secondary Data

Data Sources

The list of indicators used for the MCH Block Grant Needs Assessment was guided by existing initiatives (e.g., Healthy Connecticut 2020, National Prevention Strategy) and shaped throughout the process by the feedback from stakeholders and partners. During MCH-focused discussions for the Connecticut SHA, members of the Health Improvement Planning Coalition, Advisory Council, and State Health Assessment Indicators Advisory Group provided data on specific topic areas.

Data for the MCHBG Needs Assessment were from a variety of sources:

Connecticut School Survey (CSHS)

The Connecticut School Health Survey (CSHS) is a school-based survey of students in grades 9 - 12, with randomly chosen classrooms within selected schools, and is anonymous and confidential. It is also nationally known as the Youth Risk Behavior Survey (YRBS). The health survey previously had two components, the Youth Behavior Component (YBC), and Youth Tobacco Component (YTC), and has been successfully administered in Connecticut since 2005. As of 2019, there is one survey component.

Website: <https://portal.ct.gov/DPH/Health-Information-Systems--Reporting/Hisrhome/Connecticut-School-Health-Survey>

Hospital Discharge Data

Inpatient and Emergency Department discharge data from all Connecticut acute care hospitals are reported to the CT DPH annually via the Connecticut Hospital Association's Chime Data service. These data are used to for public health surveillance, program planning, and health policy efforts.

Website: <https://www.chimedata.org/>

National Survey of Children's Health

The Health Resources and Services Administration (HRSA) Maternal and Child Health Bureau (MCHB) has funded and directed the National Survey of Children with Special Health Care Needs (NS-CSHCN) and the National Survey of Children's Health (NSCH) since 2001. These surveys, initiated in 2001 and 2003 respectively, were conducted every four years through 2012. Together, the surveys provide national and state-specific data on the health and well-being of America's children 0-17 years, including those with Special Health Care Needs, and their families. The surveys have been redesigned and are now a single, annual survey, the National Survey of Children's Health (NSCH) which started in 2016. The U.S. Census Bureau randomly selects addresses from all the home addresses in the nation using scientific sampling methods. The sample is designed so that information collected from a few thousand people will accurately describe the health experiences of all children in the United States.

Website: <https://mchb.hrsa.gov/data/national-surveys>

Pregnancy Risk Assessment Monitoring System (PRAMS)

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a surveillance project of the Centers for Disease Control and Prevention (CDC) and state health departments. Women selected to participate in PRAMS are contacted three times by mail, and then by telephone. Surveys are only available in English and Spanish, so women who speak other languages or who do not have a stable address or contact method may be systematically excluded from participating in PRAMS. Nonetheless, Connecticut PRAMS provides the CT DPH and its partners with important information about maternal health, experiences, and behaviors before, during, and shortly after pregnancy from a sample of recent postpartum women, which is used to improve the health of mothers and infants.

Website: <https://www.ct.gov/dph/ctprams>

Vital Records

The Office of Vital Records at the CT DPH maintains a statewide registry of births, marriages, civil unions, deaths and fetal deaths which have occurred in Connecticut or to Connecticut residents. Vital Records databases are analyzed annually to create statistical reports, known as Registration Reports, for births, deaths, fetal deaths, and marriages. Additional analyses may be performed by DPH epidemiologists to support statewide health programs and assessments.

Website: <https://portal.ct.gov/DPH/Vital-Records/Research-and-Data>

United States Census

The 2020 Census counts every person living in the 50 states, District of Columbia, and five U.S. territories. In addition to determining congressional representation, Census data informs how hundreds of billions of dollars in federal funding are allocated to more than 100 programs, including Medicaid, Head Start, block grants for community mental health services, and the Supplemental Nutrition Assistance Program, also known as SNAP.

Website: <https://www.census.gov/>

Other sources from which the health indicators were derived include, but are not limited to: Behavioral Risk Factor Surveillance System (BRFSS), National Immunization Survey (NIS), Substance Abuse and Mental Health Services Administration (SAMHSA) Survey on Drug Use and Health Model-Based Estimates, US Department of Health and Human Services Administration for Children and Families, Connecticut Department of Public Safety, Bureau of Labor Statistics, and the Connecticut Department of Energy and Environmental Protection.

Indicators and Analyses

All data in this report are for calendar years, unless otherwise noted. For the BRFSS, an important data source on health risk factors, new sampling methods were used in 2011 to include cell phones for greater representativeness. This sampling method differed from previous years of the BRFSS and therefore more recent BRFSS data are not able to be directly compared to previous years. As such, BRFSS trend graphs show a break in the line over time.

Results are noted in the graphs and narrative when significance testing was conducted to identify whether there were statistically significant differences ($p < .05$) either over time or by population group. However, when statistical significance is not mentioned in the graphs or narrative, then tests for statistical significance were not conducted with those datasets.

The race and ethnicity categories used in this report are: Hispanic (sometimes broken into Puerto Rican and Other Hispanic), non-Hispanic Black, non-Hispanic Other, and non-Hispanic White. The non-Hispanic Other category is particularly ill-defined, as it includes people who identify as Asian, Pacific Islander, Native American, mixed race, etc. This category exists for statistical purposes, as the population size of these subgroups in Connecticut are too small to ethically present them individually.

In this report and for statistical purposes, persons who identify as Hispanic or Latino are categorized as “Hispanic,” regardless of race. Persons who identify as non-Hispanic or Latino are categorized based on race and noted as non-Hispanic; when abbreviated, it precedes race as “NH.” The combining of race and ethnicity allows for the presentation of mutually exclusive categories. Occasionally, data for race but not ethnicity is available and, for these instances, only race is reported and the persons in the race category may overlap with those in the Hispanic or Latino category. The term “persons of color” is used to represent all races and ethnicities other than non-Hispanic White.

For some data sources, Hispanic sub-groups are available. Some data are presented separately for Puerto Ricans and Other Hispanics. In 2016, Puerto Ricans made up 8.3% of the population of Connecticut, accounting for 53% of the Hispanic population.⁶ In addition to being the largest Latino-origin group in the state, Puerto Ricans also have a unique history of migration and settlement in the mainland. As U.S. citizens, Puerto Ricans can move freely between the island and the mainland, and have a long history of doing so. At the same time, Puerto Ricans are more likely to have lower socioeconomic position than other residents of Connecticut, and worse health outcomes than other Hispanic subgroups. Given this unique history and position, therefore, some results are presented to highlight the health of Puerto Ricans relative to other Hispanics and other racial/ethnic subgroups.

A glossary of acronyms used throughout the report are included in the Appendix.

Limitations of Data Sources

As with most health assessments, there are several limitations of the indicators presented in this report. First, indicators of the health status of Connecticut residents are derived from surveillance data and are

often presented over a several year period, during which data collection or analysis techniques may have changed. Any changes in the collection or analysis of surveillance data are noted within the figures. Second, there is a time lag between when the indicators were collected and when they have been analyzed and are available for public report. As such, the MCHBG Needs Assessment includes the most recent year in which data were publicly available. Third, different data sources may use a different indicator. For example, to provide a comprehensive snapshot of adolescent risk related behaviors in Connecticut, this report includes data on hospitalizations via utilization data, self-reported behaviors via surveys, and mortality data via vital records. While some of these indicators are based on self-report, others are derived from mandatory reports to the CT DPH. Together, these data sources provide insight into the range of issues affecting many MCH-focused populations. Fourth, some data are not available for specific populations of interest, such as towns or counties in Connecticut, or sub-population groups. This is often due to small sample or population sizes and limitations in the availability of data for marginalized populations. Fifth, some data, particularly those based on surveys such as the Behavioral Risk Factor Surveillance System, Connecticut School Health Survey, and National Immunization Survey are based upon self-report, which may lead to an over- or under-estimate of the prevalence of the health issue or health behavior. Despite these limitations, the indicators included in the MCHBG Needs Assessment can provide important insight into health issues affecting Connecticut mothers, infants, and children and can inform the health improvement planning process.

It is important to mention that while CT DPH prefers community-level data, not all sources present data in this manner due to collection strategies or analysis considerations. Connecticut's decentralized government structure makes it difficult to find county level data useful but reliable third-party data sources are typically oriented in such a manner as most of the nation has a county government structure. Faced with this challenge, CT DPH opted to use county level data when more geographically precise data were unavailable or unreliable.

WOMEN’S AND MATERNAL HEALTH

The health of women before, during, and after pregnancy is important. And it also affects the health of her fetus and child. As noted above, health is profoundly influenced by the social and environmental context in which one lives. This section reviews maternal sociodemographic characteristics in the State of Connecticut, birth rates and family planning, patterns of health among childbearing women, risk from stress and violence, support from family and partners, and experiences with healthcare.

Maternal Sociodemographic Characteristics

Overall, in 2018, the population of Connecticut was 66% non-Hispanic White, 10% non-Hispanic Black, 16% Hispanic (8% Puerto Rican), 5% non-Hispanic Asian, and 3% non-Hispanic Other race (Data.census.gov). In 2019, the unemployment rate was under 4% (U.S. Bureau of Labor Statistics).

Table 1 shows the sociodemographic characteristics of women who gave birth in Connecticut between 2016-2018. Compared to the State overall (66% non-Hispanic White), non-White women (52.4%) were a smaller proportion of those giving birth. Most (72.2%) had over 12 years of education and were married (63.4%). Just over half of these mothers were considered ‘not poor,’ living at over 200% of the federal poverty line (FPL).

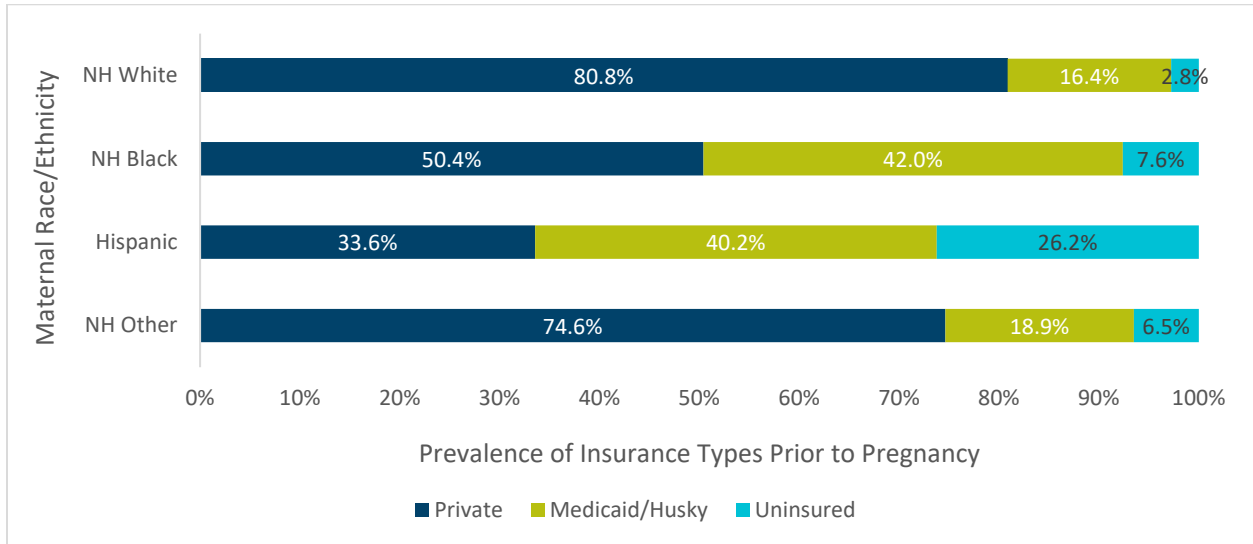
Table 1: Maternal Sociodemographic Characteristics, Connecticut, 2016-2018

Race/Ethnicity	%	Marital Status	%
White, non-Hispanic	52.4	Married	63.4
Black, non-Hispanic	12.2	Other	36.6
Hispanic	25.3	Poverty	%
Other, non-Hispanic	10.2	Poor (<100% FPL)	28.7
Age	%	Near Poor (101-200% FPL)	17.6
<20	3.2	Not Poor (>201% FPL)	53.7
20-24	12.2	Previous Live Births	%
25-29	26.2	0	42.7
30-34	34.2	1	34.3
35+	24.2	2	15.1
Education	%	3	5.4
<12 years	10.2	4+	2.4
12 years	17.7		
12+ years	72.2		

Data Source: Connecticut Pregnancy Risk Assessment Monitoring System 2016 – 2018

Because of the racial history of the U.S., race/ethnicity is correlated with poverty, which affects access to health insurance. Prior to becoming pregnant, health insurance coverage varied greatly by race/ethnicity for women in Connecticut. About 75-80% of women who were non-Hispanic White or non-Hispanic Other races were covered by private health insurance, while only 50.4% of Black and 33.6% of Hispanic women were (Figure 4). Over one quarter of Hispanic women were uninsured.

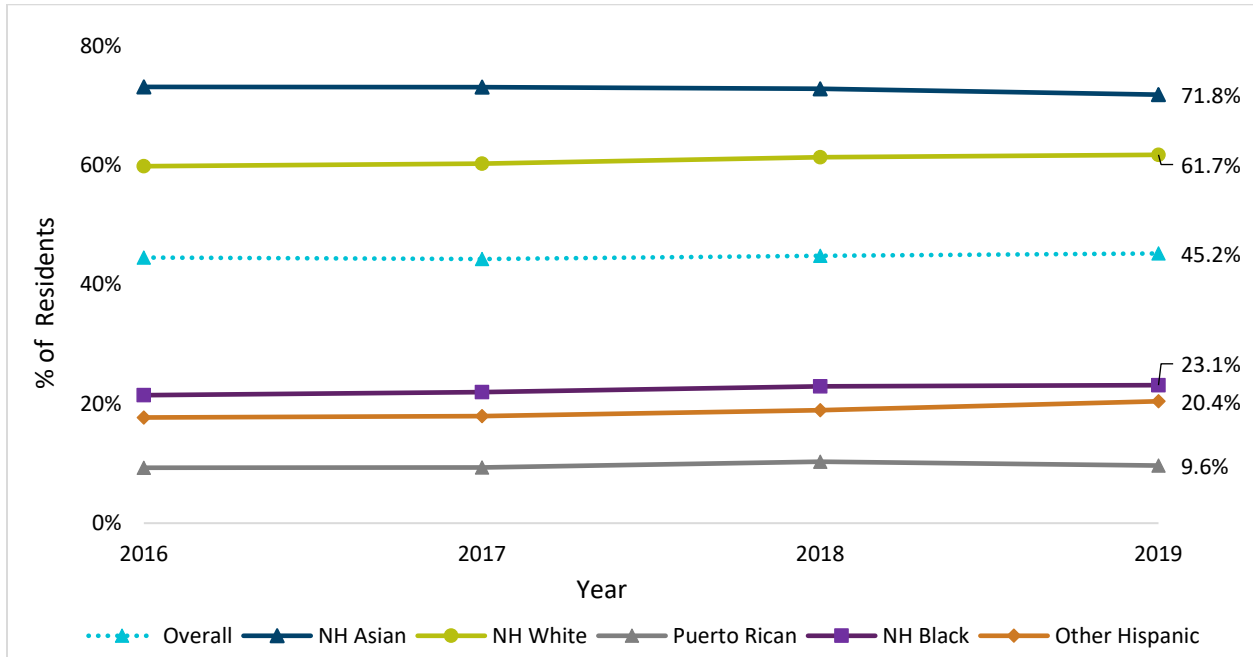
Figure 4: Prevalence of Insurance Types Prior to Pregnancy, by Maternal Race/Ethnicity, Connecticut, 2016 - 2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

Other socioeconomic characteristics of women delivering live births in Connecticut between 2016-2019 are also not distributed equally by race/ethnicity. Based on data from the CT DPH Office of Vital Records, in which data have been grouped as non-Hispanic Asian, non-Hispanic White, Puerto Rican, non-Hispanic Black, and Other Hispanic, these patterns are apparent. Non-Hispanic Asian women were most likely to have obtained a bachelor’s degree or higher (71.8%), followed by non-Hispanic Whites, non-Hispanic Blacks, other Hispanics, and Puerto Rican Hispanics (Figure 5). This inequity in educational attainment stems from a history of racism, colonialism (the policy of a country seeking to extend or retain its authority over other people,) and immigration patterns.⁷ Unfortunately, lower educational attainment is associated with lower income across the life-course, neighborhood poverty, poorer health status, and poorer health status for infants and children.

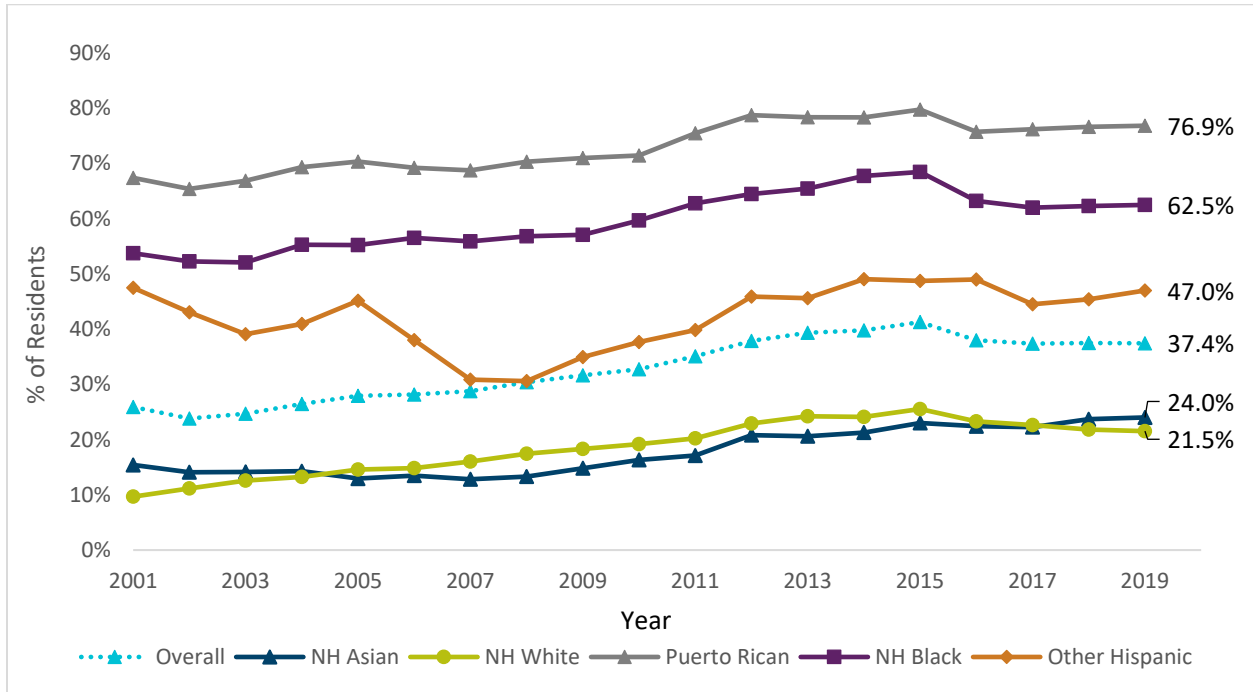
Figure 5: Percentage of Connecticut Residents Delivering Live Births with Education Level of Bachelor's Degree or Higher, Connecticut, 2016 – 2019



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2016-2019

Additional forms of health insurance are available to pregnant women, so some may enroll in Medicaid during pregnancy. Again using data from the Office of Vital Records, 76.9% of Puerto Rican women delivered a live birth under Medicaid (Figure 6), compared to 62.5% of non-Hispanic Black women, and only 21.5% of non-Hispanic White women in Connecticut in 2019.

Figure 6: Percentage of Connecticut Residents Delivering Live Births using Medicaid as Delivery Payer, Connecticut, 2001 – 2019



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2001-2019

Female-Headed Households Concentrated Among Black and Hispanic/Latino Households

Female-headed households tend to be poorer and at highest risk for food insecurity.¹

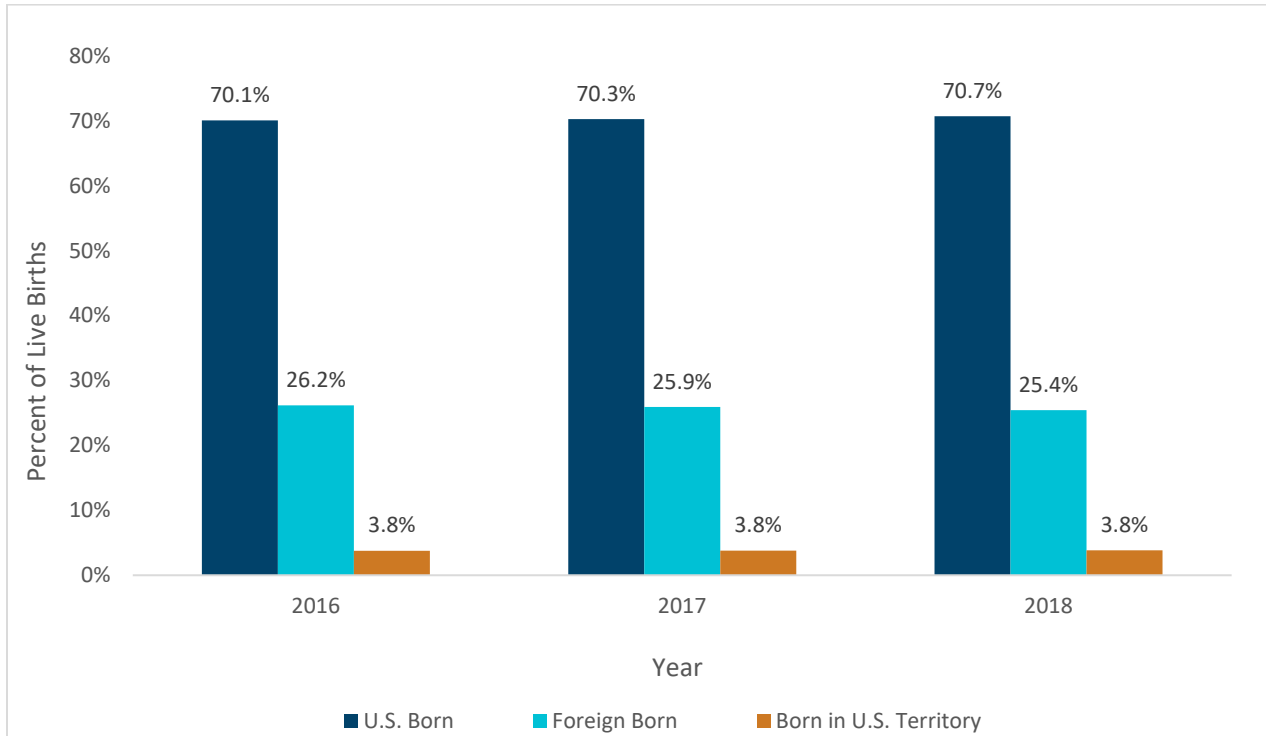
- Almost one in three female-headed households report household incomes less than 125% of the poverty level, compared to 4.9% of married households.²
- 16.3% of Connecticut households are female headed, with no husband present. When analyzed by race/ethnicity, female heads of households comprised:²
 - 8% of Asian households.
 - 11% of non-Hispanic White households.
 - 30% of Hispanic/Latino households.
 - 36% of Black or African American households.

¹ Bay Area Regional Health Inequities Initiative. Applying Social Determinants of Health Indicator Data for Advancing Health Equity

² US Census Bureau (2017). American Community Survey 1-Year Estimates. *B11002: Household Type by Relatives and Nonrelatives for Populations in Households.*

In addition to race/ethnicity, nativity also plays a role in the health of women and children. From 2016-2018, just over 70% of live births in Connecticut were delivered by U.S.-born mothers, just over 25% to foreign-born mothers, and a constant 3.8% to mothers born in a U.S. territory (Figure 7).

Figure 7: Annual Percentages of Live Births to Connecticut Residents by Mother's Place of Birth Place of Birth, Connecticut, 2016-2018



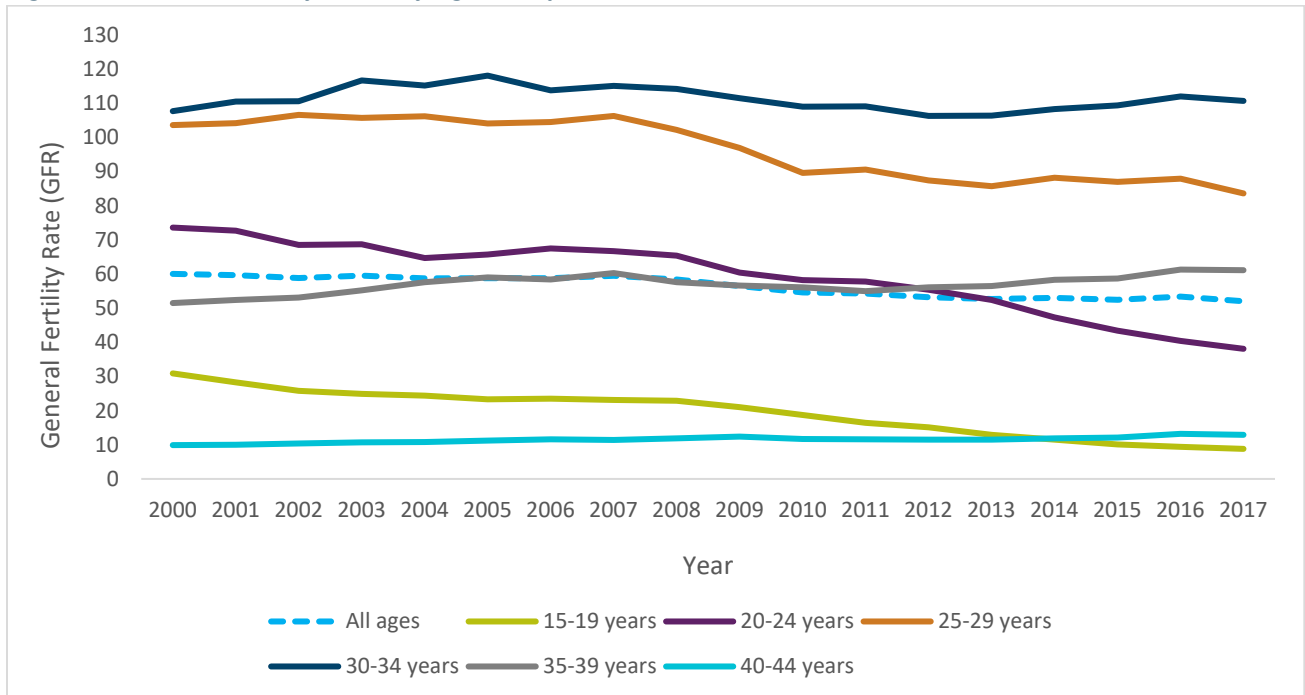
Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2016-2017 and provisional 2018 data

Birth Rate

Fertility rates throughout the U.S. have reached historic lows in recent years.^{8,9} General Fertility Rate (GFR) is the rate of births per 1,000 women of childbearing age (15-44). In 2017, Connecticut had a fertility rate of 52 per 1,000 women aged 15-44. This rate is below the national average of 60 but consistent with neighboring states and for New England as a whole.^{8,10}

The trends in age-specific fertility rates over time have been stable in Connecticut. Teen births have steadily declined in line with teen pregnancy prevention efforts. Among women aged 20-24, fertility declines have been substantial with nearly a 50% decrease in fertility since 2000. Fewer births among these women are a primary contributor to the overall declines in GFR. The GFR among women aged 25-29 years shifted lower following the Great Recession which contributed to an overall GFR decline between 2007 and 2010 but the steep post-recession declines have not continued (Figure 8). While women are delaying childbirth to later ages, evidenced by increases in fertility rates among women over 35 years of age, the magnitude of those increases do not offset the decreases seen among women under 30 years of age. Women overall are simply having fewer babies.¹¹

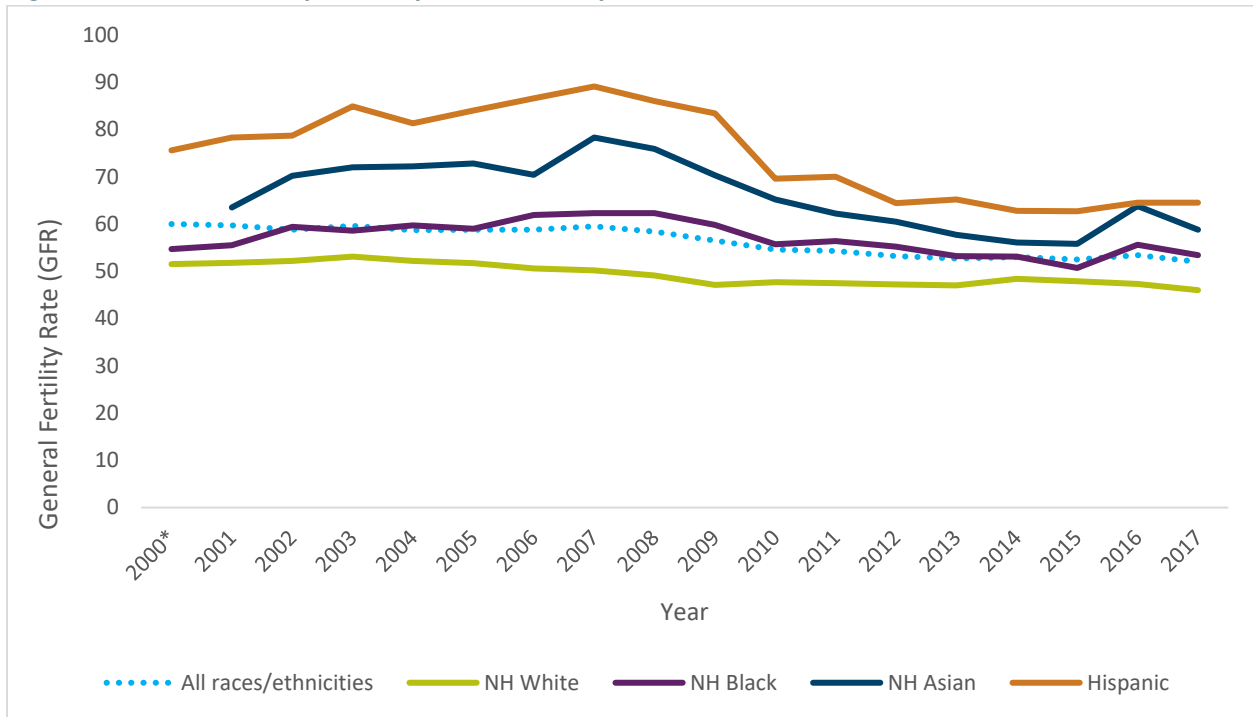
Figure 8: General Fertility Rates by Age Group, Connecticut, 2000-2017



Data Source: CT DPH Surveillance Analysis and Reporting Unit, 2017 Registration Report

Differences in fertility rates between racial/ethnic groups have narrowed since the Great Recession (Figure 9).¹¹ General fertility rates for Hispanic women and non-Hispanic Asian women have each dropped by 28% since their peaks in 2007 while non-Hispanic Black women declined 15% and non-Hispanic White women declined 6% between 2007 and 2017. The large declines among Hispanic women are also a contributor to the overall decline in births in Connecticut.

Figure 9: General Fertility Rates by Race/Ethnicity, Connecticut, 2000-2017



* The 2000 GFR for non-Hispanic Asian is not shown due to limitations in the collection of Asian races in 2000

Data Source: CT DPH Surveillance Analysis and Reporting Unit, 2017 Registration Report

Teen Pregnancy and Birth

Teens (defined as ages 15–19) from families of low socioeconomic status (i.e. low educational attainment or low income) or teens in the child welfare system (i.e. in foster care) are at higher risk of teen pregnancy and birth than other teens.¹²

Teens who become pregnant or give birth have lower educational attainment and income, on average. Compared to their peers, teen parents are less likely to graduate from high school or college or be fully employed as adults. Also, they are more likely to experience an intergenerational cycle of teen parenting. Children of teen mothers are more likely to experience adverse outcomes that increase public sector costs, such as higher rates of dependence on public healthcare and welfare. As adolescents, children of teen mothers have higher incarceration rates and lower earnings.^{13,14,15,16}

Connecticut Ranks 3rd Lowest for Teen Birth Rate in the US

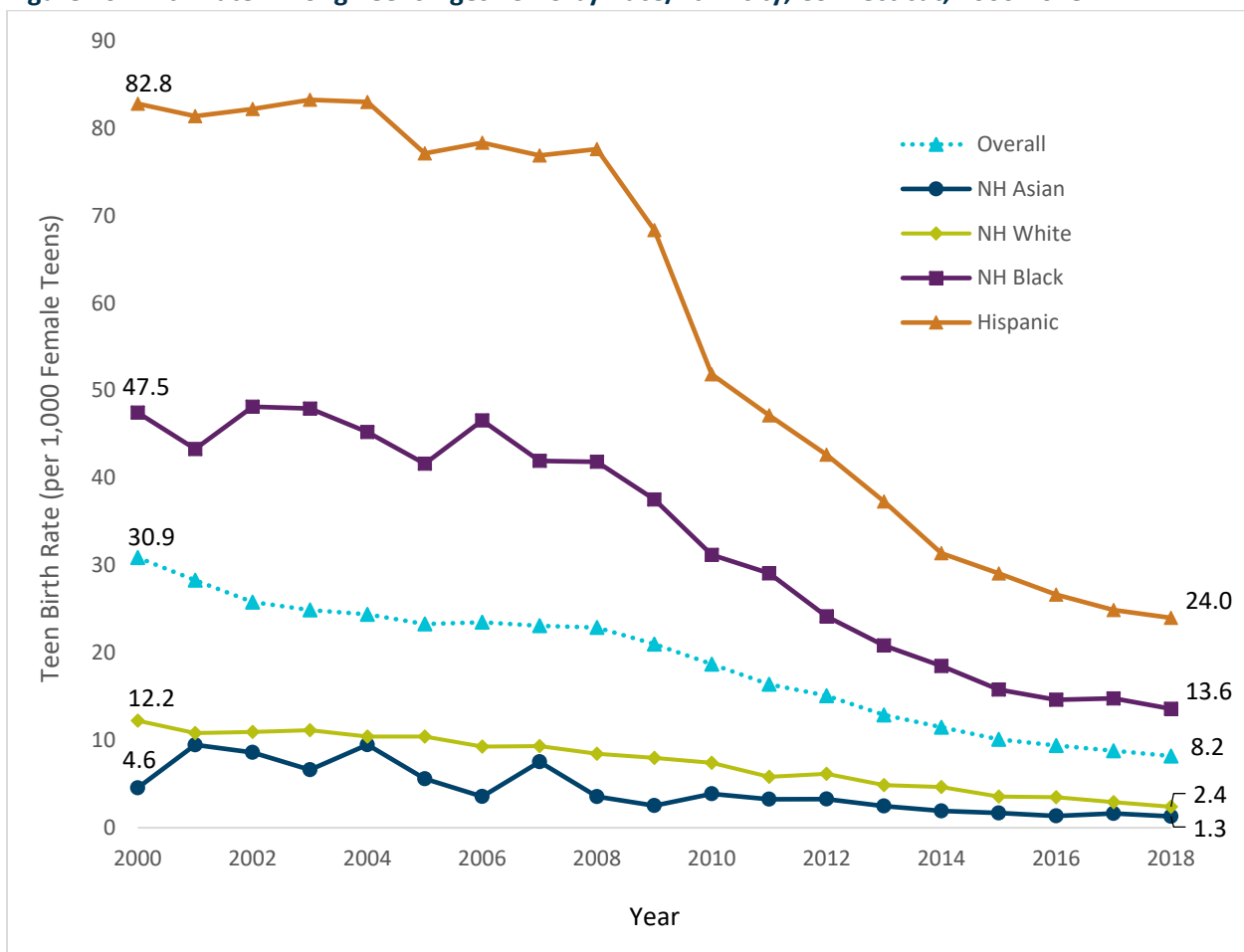
Across all 50 states, teen pregnancy and childbearing are at historic lows. In Connecticut:

- The **teen birth rate has declined across all racial/ethnic groups**; however, disparities are still present.
- **Most teen births are to older teens** (ages 18-19).
- The teen birth rate decline in 2015 resulted in **public savings of \$39 million**.

Source: Power to Decide. Connecticut Data. <https://powertodecide.org/what-we-do/information/national-state-data/connecticut>

Over the past two decades, teen births in Connecticut declined three-fold overall and declined among teens of all races/ethnicities. These declines mirror national trends. Despite the decrease in rates, disparities between racial/ethnic groups remain stable, with Hispanic teens 10 times more likely and Black teens 5.6 times more likely than White teens to have a teen birth in 2018 (Figure 10).

Figure 10: Birth Rate Among Teens Ages 15-19 by Race/Ethnicity, Connecticut, 2000-2018



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2000-2017 and provisional 2018 data

Family Planning

Health begins in the womb, and the health of a woman before and throughout her pregnancy can profoundly influence the lifelong health of her fetus and child.¹⁷ The conditions and exposures that babies encounter in utero and resulting health outcomes can be optimized through family planning efforts that improve pregnancy intention, planning, and prenatal care that prevents adverse birth outcomes.

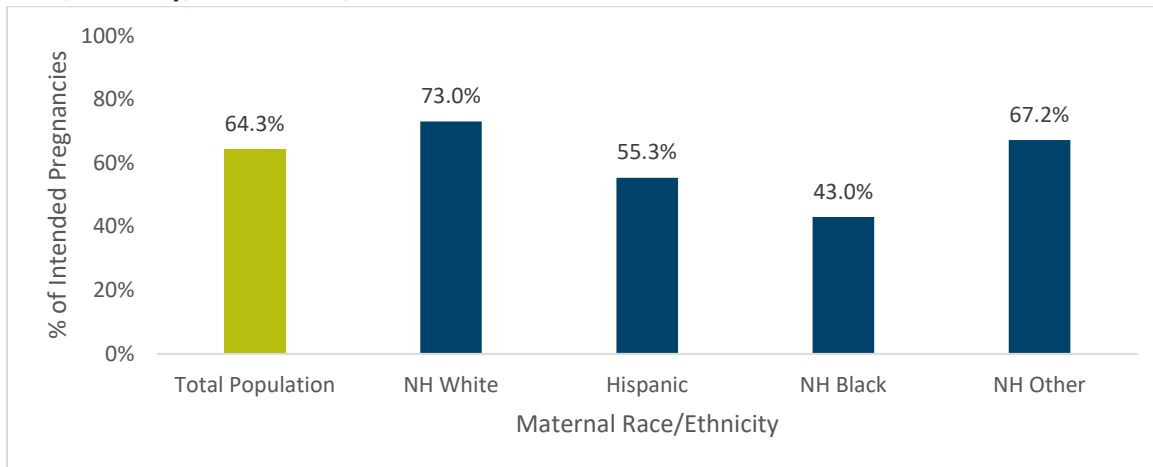
Pregnancy Intention

Pregnancy intention refers to whether a pregnancy is wanted or expected. Circumstances that might make a pregnancy unintended include desire or timing. Because “intention” among women who reported not knowing what they wanted is difficult to determine, the data are broken out into three distinct categories: intended (women who reported wanting to become pregnant at the time they did or sooner), unintended (women who reported not wanting to be pregnant at the time that they did (mistimed) or women who did not want to be pregnant then or at any time in the future (unwanted)), and unsure (women who reported not being sure how they felt about becoming pregnant at the time that they did).

Unintended pregnancy can lead to increased health risk for both the woman and baby; if the pregnancy is unintended, a woman’s health status might not be optimal for childbearing and prenatal care might be delayed.¹¹ Unintended pregnancy also can limit a woman’s opportunities for higher education, employment, and income stability.¹³ Additionally, unintended pregnancy can be costly to federal and state governments due to expenditures related to births, abortions, and miscarriages. In 2010, it was estimated that public spending for unintended pregnancies in Connecticut totaled \$209 million, with \$80.1 million paid for by the state. Strategies to reduce unintended pregnancies include increasing access to contraception and its correct and consistent use. Specifically, use of Long-Acting Reversible forms of Contraception (LARC) can be very effective in reducing the prevalence of unintended pregnancies.¹²⁾

Among women delivering a live birth in Connecticut in 2016-2018, 64.3% of women reported their pregnancies were intended, 20.8% were unintended, and 14.9% were not sure how they felt about becoming pregnant/what they wanted. The proportion of *intended* pregnancies was 73.0% among non-Hispanic White women, compared to only 43.0% among non-Hispanic Black women (Figure 11). Note that these data reflective of women who delivered a live birth, and do not include pregnancies that were terminated or resulted in fetal loss. Therefore, it’s possible that some of these racial/ethnic differences could be due to differences in rates of termination between racial/ethnic groups. Persistent racial/ethnic disparities in pregnancy intentionality should be assessed in combination with other sociodemographic factors such as age, poverty level, marital status, nativity, and number of other children.

Figure 11: Percentage of Intended Pregnancies Among Women Having a Live Birth by Maternal Race/Ethnicity, Connecticut, 2016-2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System 2016 – 2018

Among women who were not trying to get pregnant, there were a variety of reasons why they were not using contraception at the time they got pregnant. The most common reasons were that they did not mind getting pregnant (53.5%), that they could not get pregnant at the time (27.6%), and that their husband/partner did not want them to use contraception (13.5%) (PRAMS, 2016-2018).

Following birth, 79.6% of women in Connecticut reported using contraception postpartum, including 16.7% using LARC (e.g. IUD, contraceptive implant). According to CDC standards, about 29.1% of women were using a highly effective method of contraception, 28.8% an effective method, and the remaining 35.9% a less effective method (PRAMS 2016-2018). Further public health efforts are needed to increase usage of LARCs and other highly effective contraception methods, particularly among postpartum women.

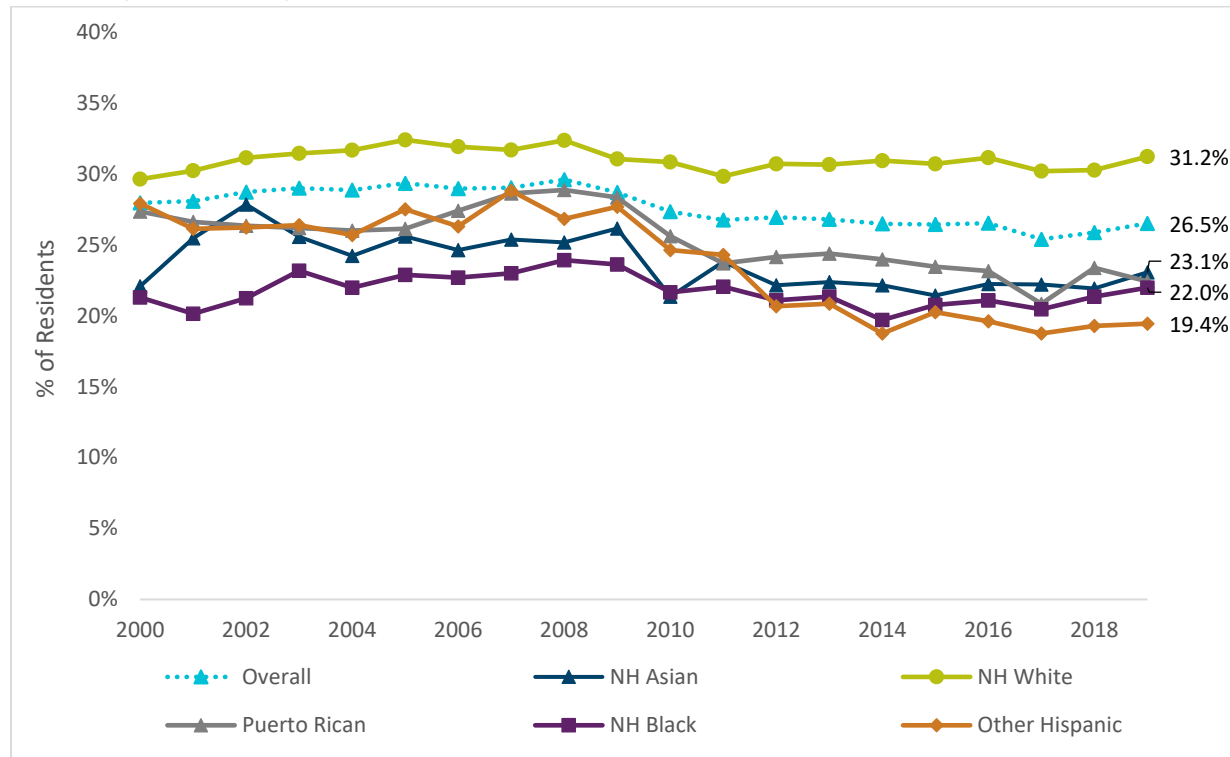
A converse problem families face is trying to get pregnant but grappling with fertility issues. There are substantial differences by sociodemographic factors in prevalence of women taking fertility drugs or receiving medical procedures to help get pregnant. Over 15% of non-Hispanic White women and almost 13% of non-Hispanic Other race women report using Assisted Reproductive Therapies (ART), versus only 6.8% of non-Hispanic Black women and 7.0% of Hispanic women (PRAMS, 2016-2018). This is likely correlated with different patterns of age at pregnancy by race/ethnicity, as 21.1% of women 35 years and older report using ART, and older pregnant women are more likely to be White and Other races. Fertility drugs (39.6%) and assisted technology (38.5%) were the most common types of ART used (PRAMS 2016-2018).

Short Interpregnancy Intervals

For women experiencing multiple pregnancies throughout her lifetime, sufficient spacing between pregnancies is important for a healthy birth outcome. The infants of women with short interpregnancy intervals, defined here as pregnancies resulting in live births conceived within 18 months of a previous live birth, are at an increased risk of adverse outcomes such as preterm birth, low birthweight, and small size for gestational age, and infant death.¹⁸ The Healthy People 2020 goal for the percentage of all pregnancies with short interpregnancy intervals is 29.8% for all pregnancies, including those that result in pregnancy loss.¹⁹

Among Connecticut mothers who delivered a live birth in 2018, 38.6% of mothers conceived that child within 18 months of a previous live birth (CT DPH Office of Vital Records), substantially higher than the goal for 2020. Prevalence of short interpregnancy intervals have remained remarkably stable over time in Connecticut (Figure 12), with non-Hispanic White women consistently having the highest prevalence, between 2000-2019. More research is needed to understand reasons that women choose to have short interpregnancy intervals, or conversely, what barrier they encounter in preventing longer spacing.

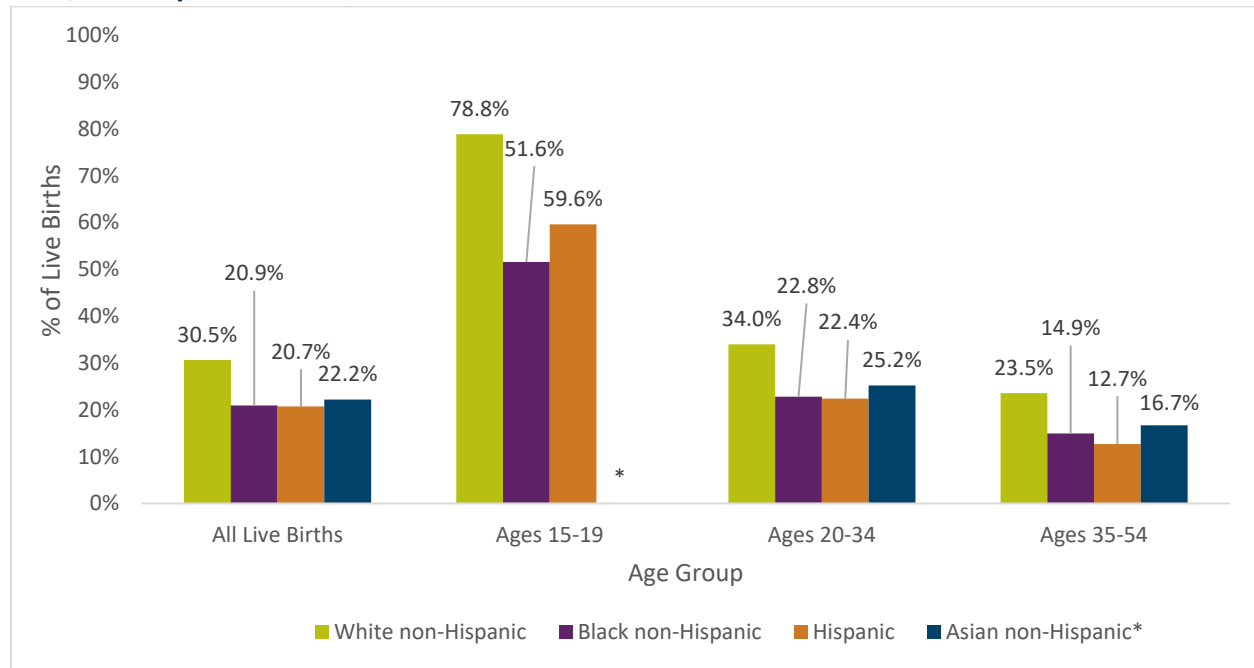
Figure 12: Percentage of Connecticut Residents Delivering Live Births Within 18 Months of a Previous Live Birth, Connecticut, 2000 - 2018



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2000-2019

Combining all Connecticut births from 2016-2018, and comparing subgroups of women, different patterns emerge. Non-Hispanic White residents in Connecticut are most likely to have a short interpregnancy interval among all racial/ethnic groups, regardless of age group (Figure 13). Women ages 15-19 years are the most likely age group to have a short interpregnancy interval consistently across all race/ethnicity groups – with three out of five women (61.5%) conceiving again within 18 months. The likelihood of a short interpregnancy interval declines with increasing maternal age in Connecticut (Figure 13). Among all deliveries between 2016 and 2018, the percentage of women with private insurance who had short interpregnancy intervals (28.8%) was higher than that for women with Medicaid (23.2%). However, for non-Hispanic Black, Hispanic, and teen populations, the percentages with short pregnancy intervals do not differ between private insurance and Medicaid.

Figure 13: Percentage of Live Births with Short Interpregnancy Interval by Maternal Age Group and Race/Ethnicity, Connecticut, 2016-2018



*Data not shown for non-Hispanic Asian 15-19 due to low numbers

Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2016-2017 and provisional 2018 data

Preconception care and family planning efforts—such as educational efforts around the potential risks of short interpregnancy intervals—are essential to making sure that a woman is healthy and ready for pregnancy before she conceives.²⁰ Previous research has found approximately 55% of live births with short interpregnancy intervals were unintended.²¹ Increased access to and use of LARCs has been shown to reduce the rate of women with short interpregnancy intervals.²² Older women trying to conceive a second time may often have to consider the risk of adverse birth outcomes associated with advanced maternal age with those of short interpregnancy intervals when planning to get pregnant.²³ Research supports lower rates of unintentional pregnancy among pregnancies with short interpregnancy intervals for women that are older, college graduates, and using a primary payer other than Medicaid for delivery.²¹ Further understanding of the dynamics of pregnancy intention and family planning, race/ethnicity, and socioeconomic status as it relates to short interpregnancy intervals in Connecticut is needed, particularly among teenage mothers for whom the risk is highest.

In 2016-2018, 89.9% of women in Connecticut reported discussing birth control methods at their postpartum checkups. Over 43% were prescribed birth control, and 19.7% received an intrauterine device (IUD) or implant (PRAMS 2016-2018).

Partnership Spotlight: Every Woman Connecticut Learning Collaborative

- **Goal:** Increase the expertise and self-efficacy of health care workers to implement routine pregnancy intention screening and appropriate care, education, and services to ultimately improve birth spacing and increase pregnancy intentionality and discussions around health before and between conceptions.
- **326 providers from 39 cities/towns and 9 statewide programs** have been involved.
- Collaborative members receive access to implement **One Key Question screening** in their respective sites and programs, by asking women, **“Would you like to become pregnant in the next year?”**
- The screening tool is used by community-based teams of clinicians and partners in communities with **high volume/burden of poor birth outcomes** who **demonstrate readiness** for this program.
- Connecticut Department of Public Health is incorporating One Key Question screening into several Department of Mental Health and Addiction Services sponsored programs that provide “whole person care” to **women and men of childbearing ages who are suffering from mental health illness, substance use disorders, and other chronic comorbidities** within a behavioral health medical home framework.

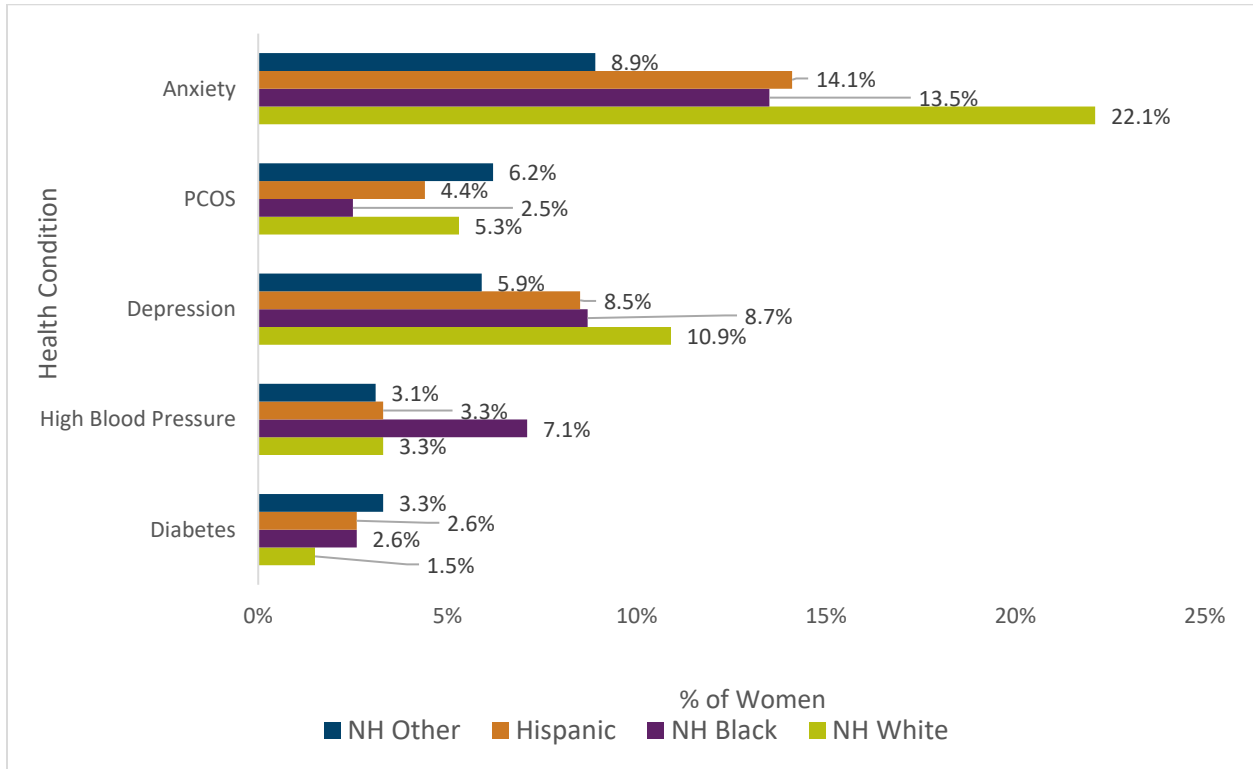
For more information, see: <https://www.everywomanct.org/>

Physical and Oral Health

Prepregnancy

In the three months prior to becoming pregnant, disparities in the prevalence of chronic health conditions are apparent in Connecticut by race/ethnicity. For example, 7.1% of non-Hispanic Black women reported high blood pressure, compared to just over 3.0% of Hispanic, non-Hispanic White, and non-Hispanic Other race women. In contrast, anxiety (22.1%) and depression (10.9%) were most commonly reported among non-Hispanic White women (Figure 14). Disparities are also apparent regarding prepregnancy health behaviors, where 64.0% of non-Hispanic White women reported multivitamin use, compared to 39.7% of non-Hispanic Black and 37.4% of Hispanic women (PRAMS, 2016-2018).

Figure 14: Prevalence of Health Conditions (3 Months Prior to Pregnancy) by Race/Ethnicity, Connecticut, 2016–2018

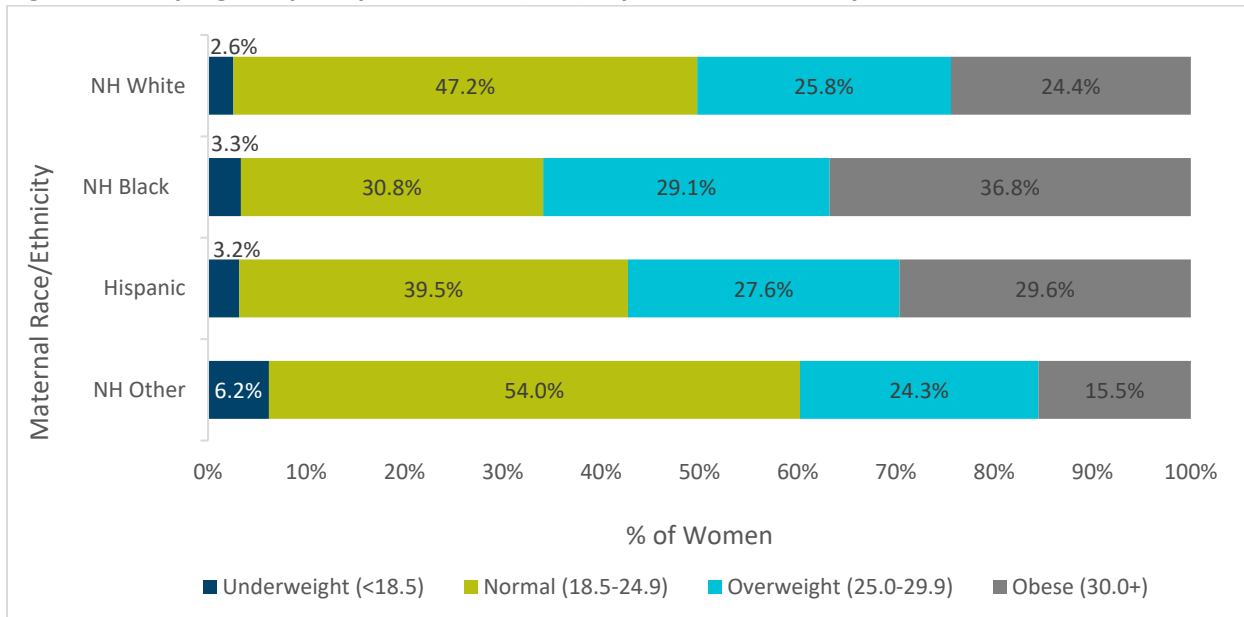


Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

Being over- or under-weight can introduce health problems during pregnancy and may affect the fetus and infant. Constellations of sociodemographic factors result in disparities in average Body Mass Index (BMI) among people of different race/ethnicities. In Connecticut, in 2016-2018, women of non-Hispanic Other races were twice as likely to be underweight than women in other racial/ethnic categories – factors such as poverty, nativity, and insurance status should be assessed in case targeted interventions are needed.

Non-Hispanic Black and Hispanic women were more likely to be overweight or obese than their non-Hispanic White or non-Hispanic Other race counterparts (Figure 15). Structural factors related to poverty, transportation, neighborhoods, income, and education must be addressed in order to move the curve on healthy weight for the entire population. Given the number of unintended pregnancies described above, initiatives to promote healthy weight should be targeted broadly.

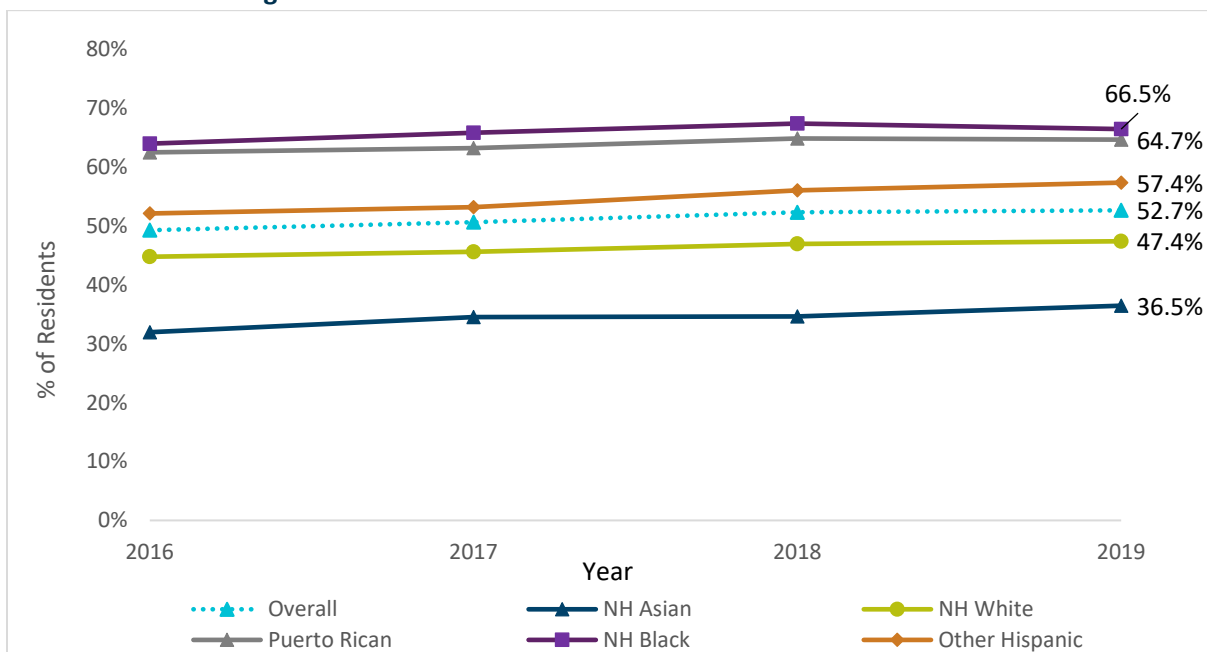
Figure 15: Prepregnancy Body Mass Index (BMI), by Race and Ethnicity, Connecticut, 2016 – 2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

Even with years of public health efforts aimed at addressing overweight and obesity, prevalence within racial/ethnic groups has changed very little over time, and in fact have increased slightly among all groups between 2016-2019 (Figure 16). Structural change takes time, but evidence has shown that focusing on individual behavior change has limited impact on the prevalence of overweight and obesity at the population level.

Figure 16: Percentage of Connecticut Residents Delivering Live Births with Prepregnancy BMI Classified as Overweight or Obese



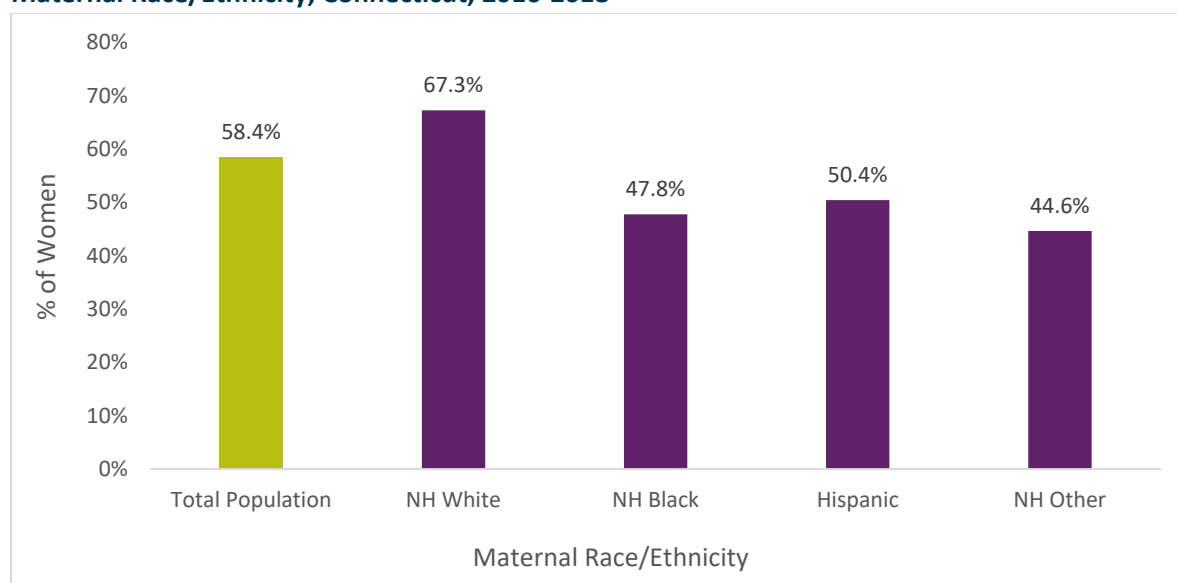
Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2000-2019

During Pregnancy

There are also sociodemographic disparities in physical health morbidity *during* pregnancy. In 2016-2018, 11.2% of women in Connecticut developed preeclampsia (PRAMS 2016-2018), which was highest among non-Hispanic Black women (16.3%) and lowest among non-Hispanic Other race women (7.0%). There was little variation by age or insurance status. Overall, 10.6% of women in Connecticut developed gestational diabetes, which was highest among non-Hispanic Other race women (16.0%) and lowest among non-Hispanic White women (6.5%). The prevalence of gestational diabetes was also strikingly high among the uninsured (17.1%), and is increasingly common with age. Overall, 7.3% of women had thyroid problems, with the highest prevalence among non-Hispanic White women and older women. Finally, 3.7% of women had polycystic ovarian syndrome (PCOS), with a range of 4.4% among non-Hispanic White women to 2.2% among non-Hispanic Black women.

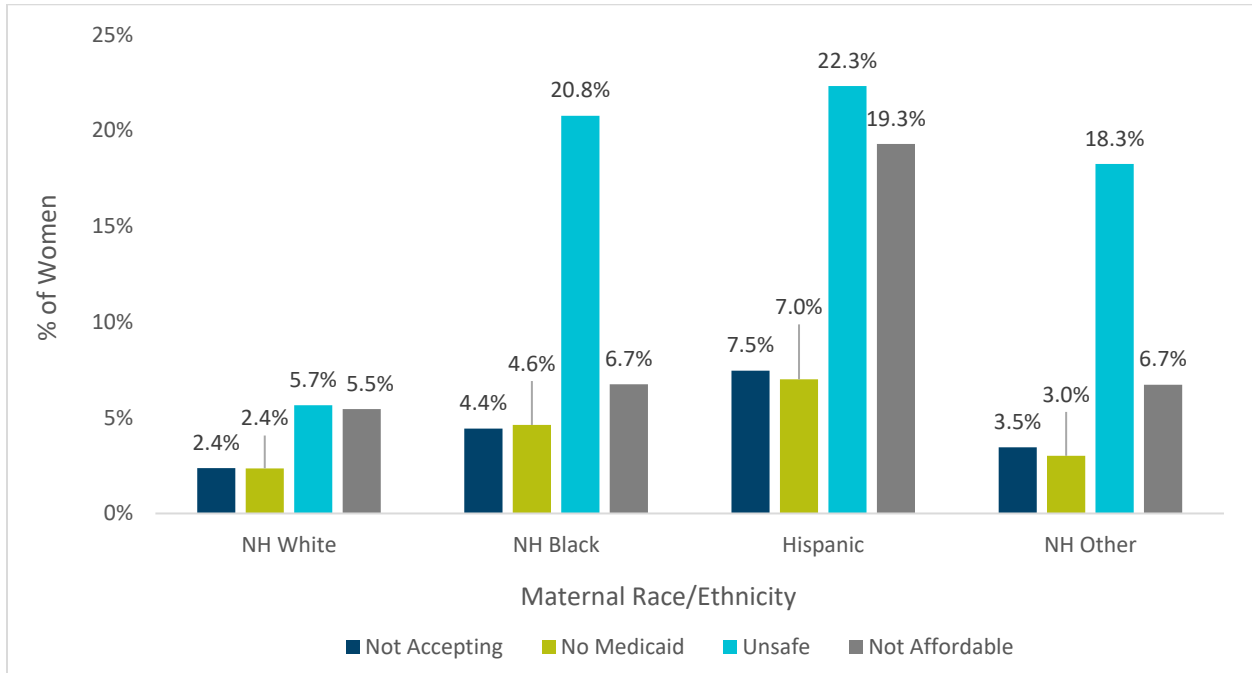
Over 58% of women in Connecticut had a dental cleaning during their most recent pregnancy in Connecticut in 2016-2018. This ranged from 67.3% in non-Hispanic White women to 44.6% in non-Hispanic Other race women (Figure 17). Among women of all races, the most prevalent reason for not going to the dentist while they were pregnant was that they thought it was unsafe (Figure 18).

Figure 17: Percentage of Women Who Had a Dental Cleaning During their Most Recent Pregnancy by Maternal Race/Ethnicity, Connecticut, 2016-2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018

Figure 18: Barriers to Going to Dentist During Pregnancy by Maternal Race/Ethnicity, Connecticut, 2016-2018



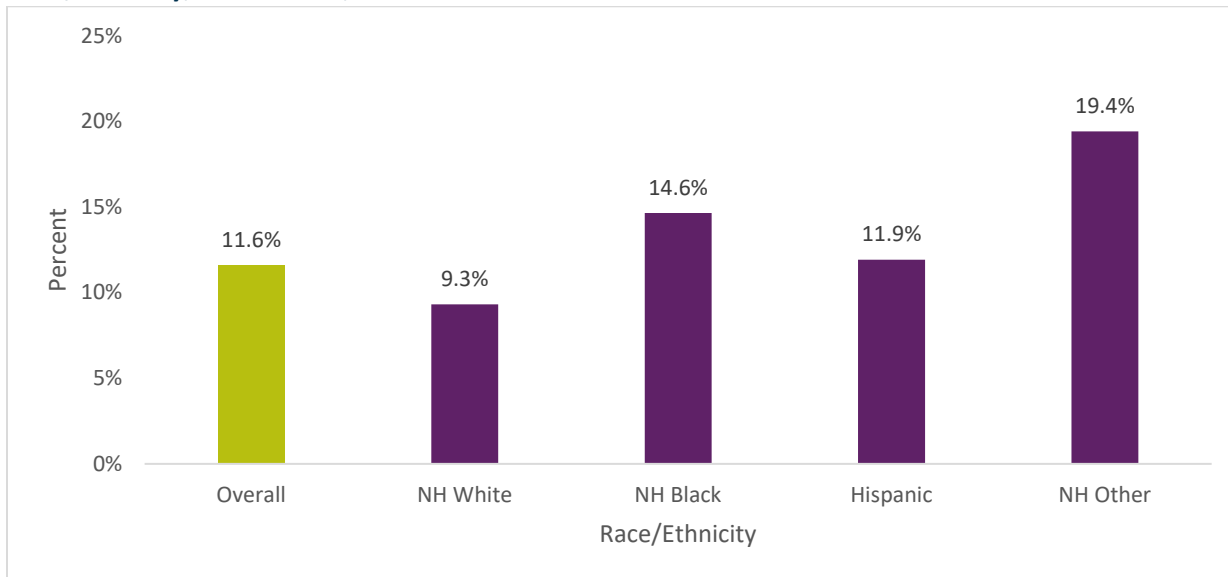
Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018

Mental Health

In Connecticut between 2016-2018, overall, 9.8% of women reported depressive symptoms *during* pregnancy (PRAMS 2016-2018). This was highest among Black women (11.4%) and lowest among Other race women (5.9%), while 15.0% of women on Medicaid reported depression. Overall, 16.3% of women reported anxiety symptoms during pregnancy. This was highest among White women (19.8%) and lowest among Other race women (8.5%). Anxiety was also strikingly prevalent among teen mothers (23.1%) and those on Medicaid (20.3%). There was also a relatively high prevalence of comorbid depression and anxiety during pregnancy, with 8.5% of women reporting anxiety alone, 7.6% both disorders, and 2.2% depression alone.

Following delivery of a live birth in 2016-2018, 11.6% of women in Connecticut reported *postpartum* depressive symptoms (PRAMS 2016-2018). However, the racial/ethnic patterns shift, with lowest prevalence among White women (9.3%) and highest among Other race women (19.4%) (Figure 19).

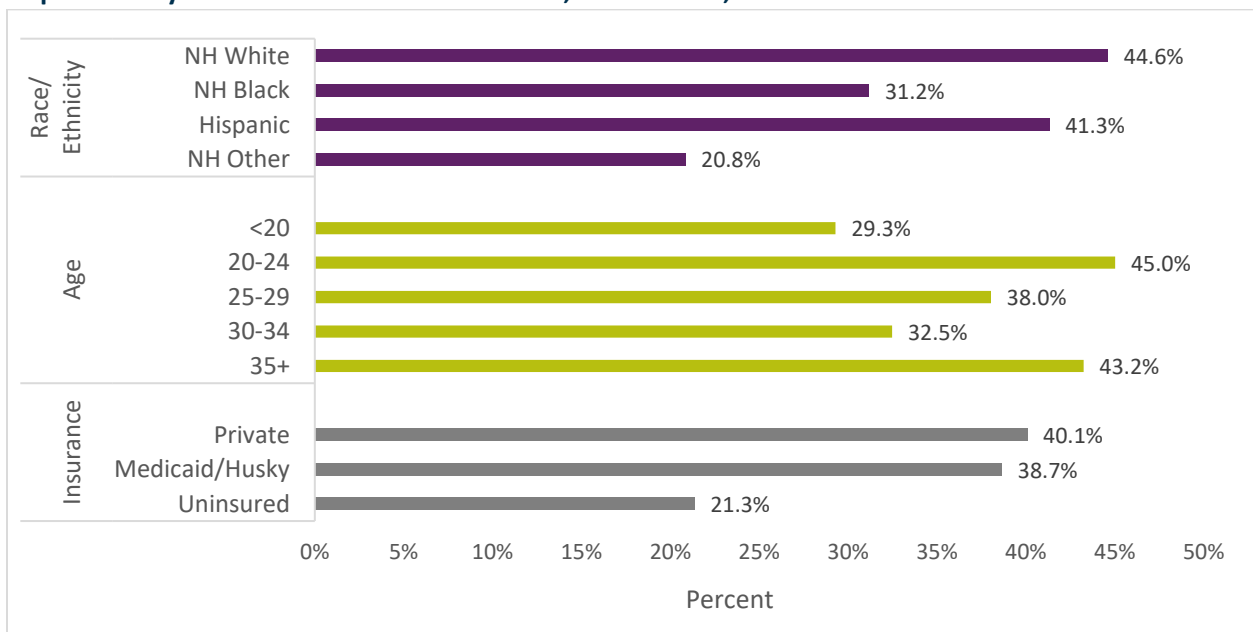
Figure 19: Percentage of Women Who Reported Postpartum Depressive Symptoms, by Maternal Race/Ethnicity, Connecticut, 2016-2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

Among women with postpartum depression symptoms however, 44.6% of non-Hispanic White women sought help, compared to only 20.8% of women of non-Hispanic Other race. Help-seeking was also rarer among women who were uninsured (Figure 20).

Figure 20: Percent of Women with Postpartum Depression Symptoms Who Sought Help for Depression by Select Maternal Characteristics, Connecticut, 2016-2018



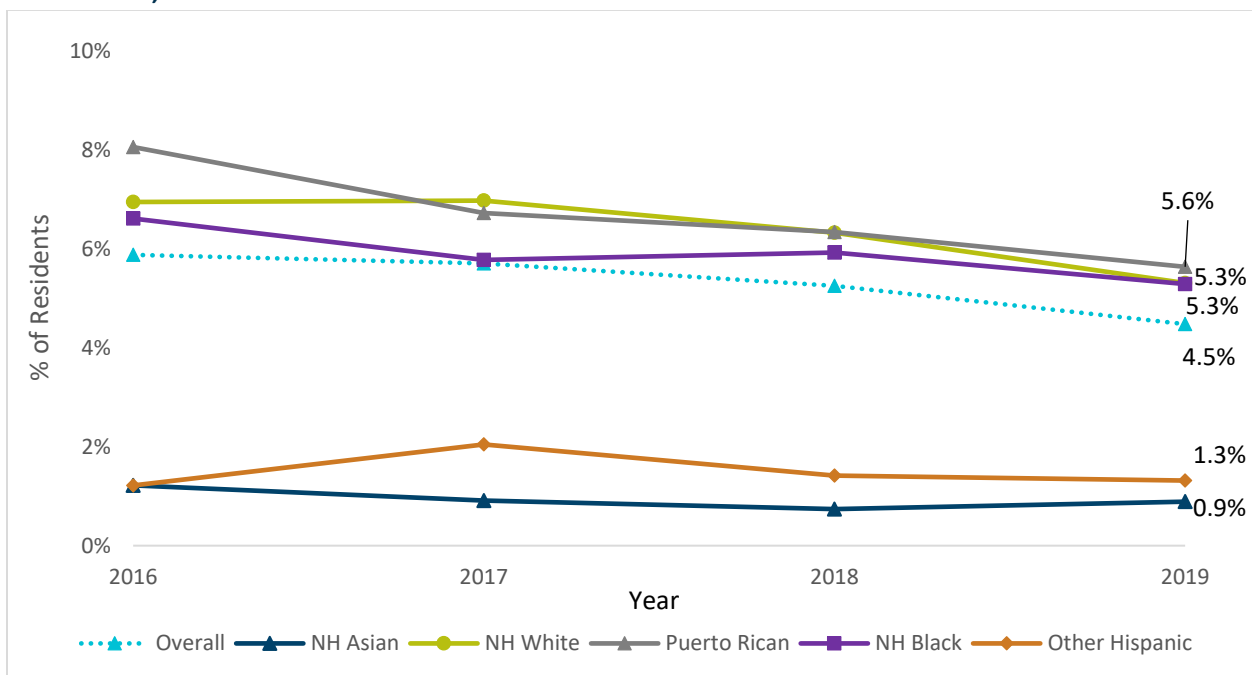
Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

Substance Use

It is widely understood that tobacco, alcohol, and other substance use during pregnancy can be extremely damaging to the fetus. However, problems with substance abuse and dependence do not resolve with pregnancy. While Connecticut has overall very low rates of substance use during pregnancy, those who still use substances may need extra or specialized treatment to assist them in quitting or reducing use.

In 2016-2019, 4.5% of women in Connecticut who delivered a live birth reported smoking tobacco during pregnancy (Figure 21). Racial/ethnic patterns were not typical – Other Hispanic and non-Hispanic Asian women had the lowest prevalence, while non-Hispanic White, non-Hispanic Black, and Puerto Ricans had the highest prevalence.

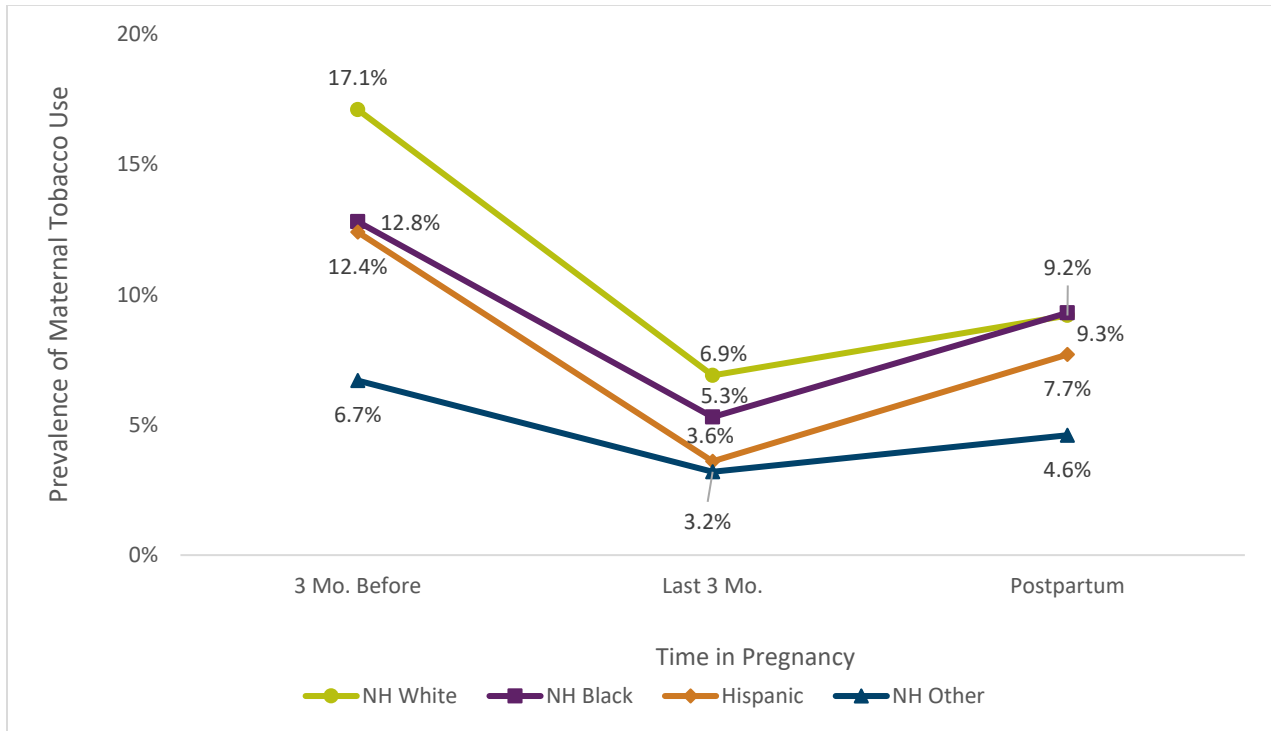
Figure 21: Percentage of Connecticut Residents Delivering Live Births Who Smoked During Pregnancy, Connecticut, 2016 - 2019



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2016-2019

Using a different dataset with participants from 2016-2018, Figure 22 shows that non-Hispanic White women in Connecticut had the highest prevalence of tobacco smoking at all time periods assessed: in the 3 months prior to becoming pregnant, in the last 3 months of pregnancy, and postpartum at the time the survey was conducted. Of note, substance use during pregnancy is generally discouraged, so self-reporting by these participants may be especially susceptible to false reports due to social desirability bias. Prevalence estimates should be interpreted with caution, particularly the substantial drop in tobacco use during pregnancy.

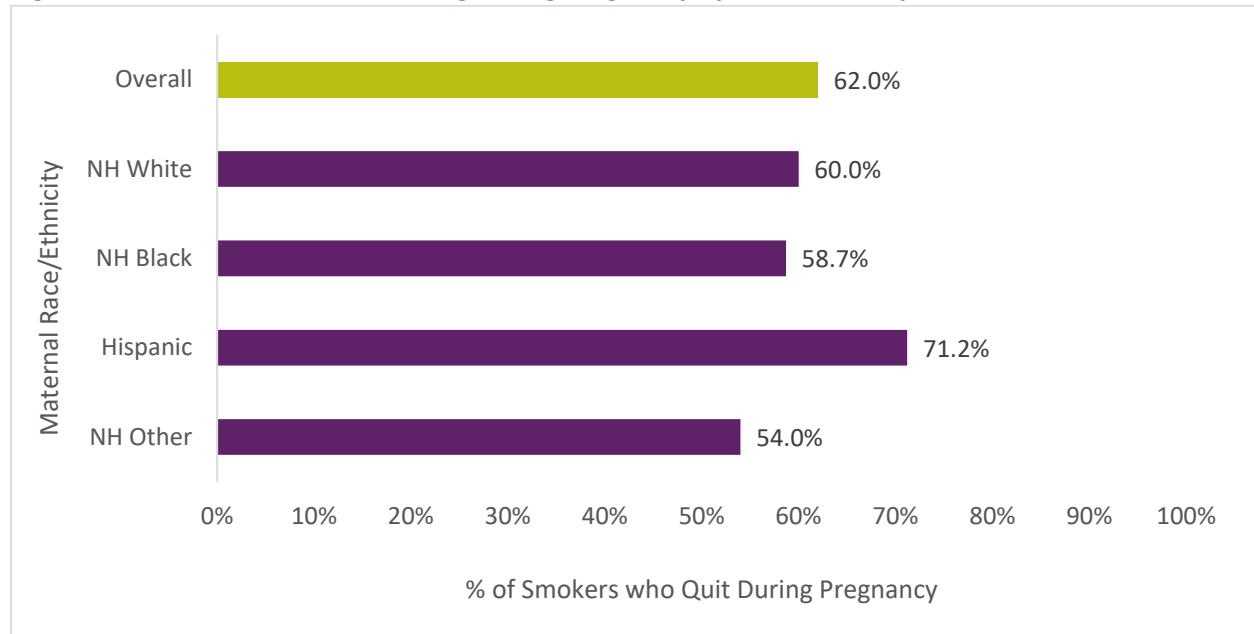
Figure 22: Time Trends in the Prevalence of Maternal Tobacco Use in the 3 Months Before Becoming Pregnant, the Last 3 Months of Pregnancy, and Postpartum, by Race/Ethnicity, Connecticut, 2016-2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

Given the apparent sharp decrease in smoking reported by women of all racial/ethnic groups during pregnancy (Figure 22), the perinatal period would appear to be an important moment for providing smoking cessation resources to women that could help them maintain abstinence from tobacco in the long-term. Unfortunately, some women appear to return to smoking postpartum (Figure 22). In Connecticut overall, 62.0% of women who smoked reported quitting smoking during pregnancy in 2016-2018. This ranged from 71.2% of Hispanic women to only 54.0% of non-Hispanic Other race women (Figure 23). Notably, only 31.9% of uninsured women in Connecticut reported quitting smoking during pregnancy (PRAMS 2016-2018), so efforts must be made to reach this vulnerable group with smoking cessation assistance, perhaps outside of the health care system.

Figure 23: Women Who Quit Smoking During Pregnancy by Race/Ethnicity, Connecticut, 2016-2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

Only 4.5% of women who gave birth in Connecticut reported using e-cigarettes in the past two years (PRAMS, 2016-2018). This was highest among White women (5.8%), women <20 years old (10.3%), and women on Medicaid (7.4%). Fewer than 20 women in the full sample reported e-cigarette use during the last three months of their pregnancy. Perinatal e-cigarette use therefore does not appear to be a major concern in Connecticut. However, trends among younger cohorts (discussed below) should be monitored as they approach pregnancy and motherhood.

Overall, 9.0% of women in Connecticut reported alcohol use in the last trimester of their pregnancy in 2016-2018 (PRAMS, 2016-2018). Given the mixed messaging about light alcohol use during the third trimester in recent decades, atypical socio-demographic patterns are apparent for alcohol use. Prevalence was highest among non-Hispanic White women (10.8%) and lowest among non-Hispanic Black (5.6%) and non-Hispanic Other race (5.7%) women, with Hispanic women (8.5%) falling in between. By age, reported alcohol use showed a graded trend, with more older women reporting use (11.9% in women 35+). However, older pregnant women are more likely to be non-Hispanic White, so further investigation is needed to disentangle the role of age and race/ethnicity. Of note, substance use during pregnancy is generally discouraged, so self-reporting by women is especially susceptible to false reports due to social desirability bias. In the case of alcohol use during pregnancy, the media has reported mixed recommendations from scientists over recent decades. This could lead to differential reporting bias among women of different races/ethnicities and socioeconomic status. Prevalence estimates should be interpreted with caution.

Perinatal Stress and Violence

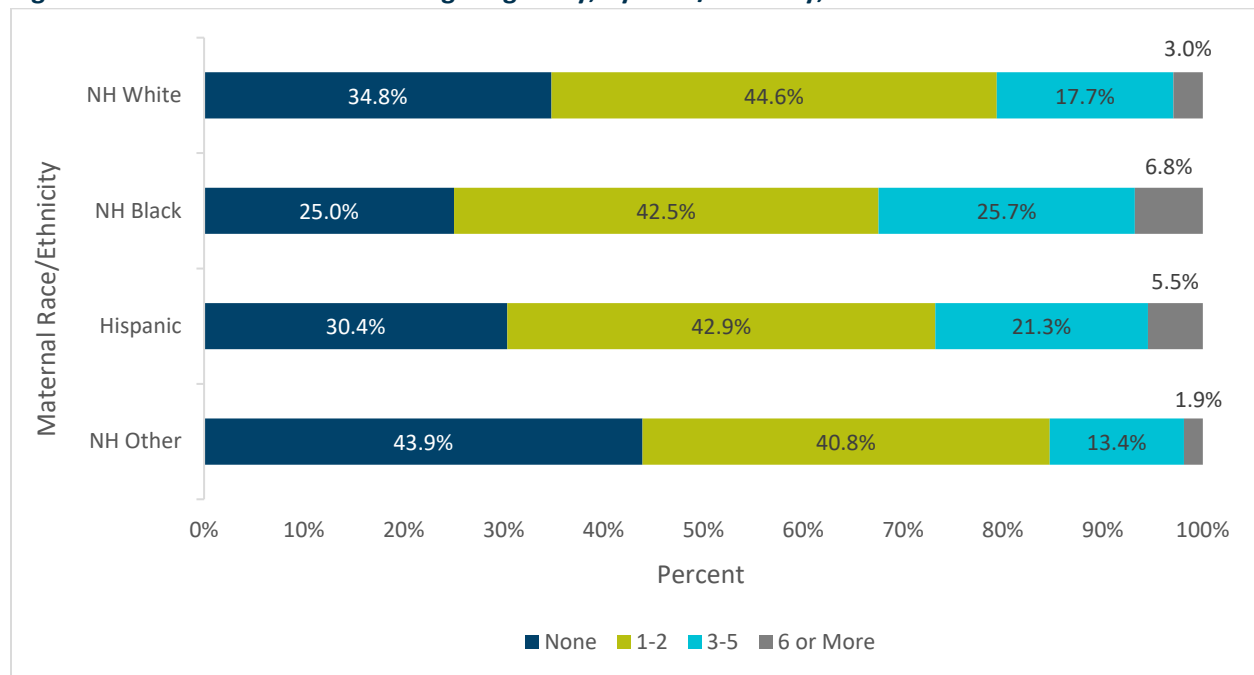
Discrimination, violence, and other forms of life stress can have deleterious effects on anyone, when experienced acutely or often. Stress can have a profound and prolonged impact on our bodies, altering neuroendocrine functions, and leading to health issues such as cardiovascular disease, psychiatric disorders, substance use disorders, and premature mortality. A developing fetus is especially vulnerable

to the effects of an altered neuroendocrine environment, making assessment of stress during pregnancy, and its sociodemographic patterns, especially important for MCH initiatives.

Women who delivered a live birth in Connecticut in 2016-2018 were asked about major life stressors (e.g. divorce, moved homes, lost a job, someone close died, someone close had drug/alcohol problems, etc.) that occurred to them in the year before their baby was born. Overall, 33.3% of women reported no major life stressors, 43.5% reported one to two, 19.2% reported three to five, and 4.0% reported experiencing six or more of these stressors (PRAMS 2016-2018).

Exposure to stressors is not distributed evenly by race/ethnicity. Among non-Hispanic Black women, 6.8% reported six or more stressors in the past year, and among Hispanic women, 5.5% (Figure 24). Non-Hispanic Other women were the most likely to report no major stressors in the past year (43.9%), however, this is a very heterogeneous racial/ethnic category, so prevalence may vary in different subgroups.

Figure 24: Maternal Stressors During Pregnancy, by Race/Ethnicity, Connecticut 2016-2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018

Discrimination

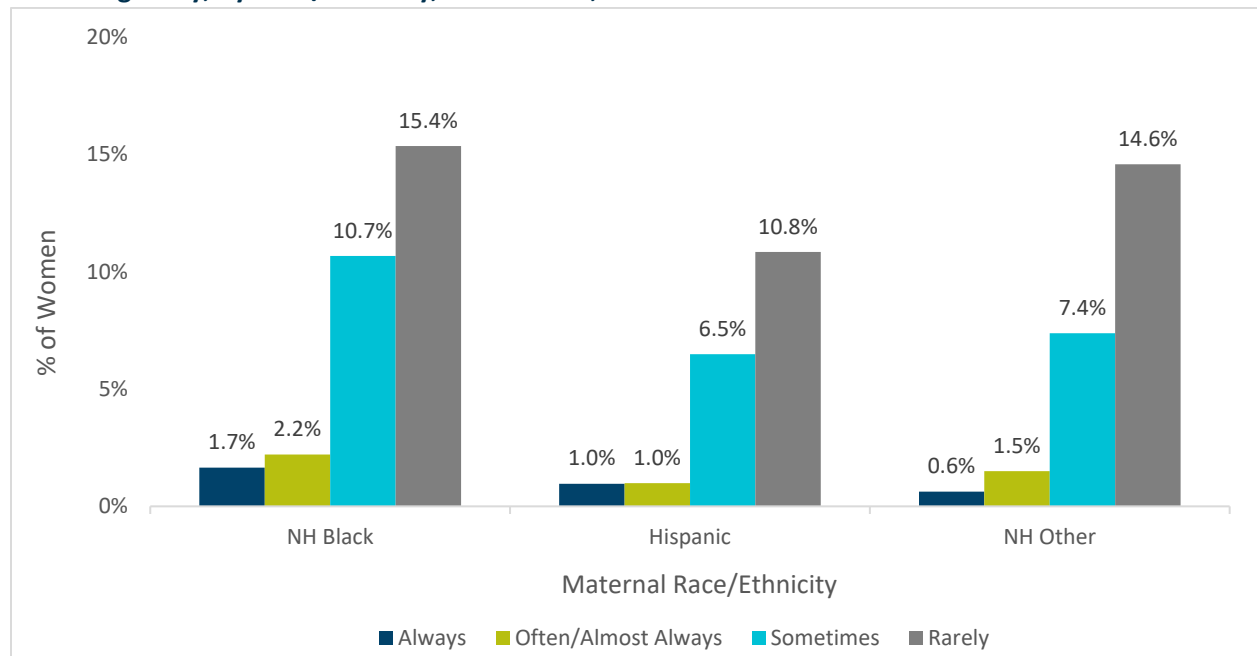
Discrimination can be defined as unfair treatment based on socially-defined group membership that is patterned by relationships of dominance and oppression.²⁴ Dominant social groups discriminate against oppressed groups to maintain power and privilege.²⁵ By this definition, dominant social groups cannot be discriminated against and are not included in these analyses. However, non-Hispanic White participants were asked about their experiences of racial discrimination, so results are presented for context.

Structural, interpersonal, and internal discrimination induces stress reactions and can be detrimental to the health of women and children over the life course. The stress, sadness, and anger induced by experiencing discrimination is chronic, as it is tied up in the history of the U.S. and the world we

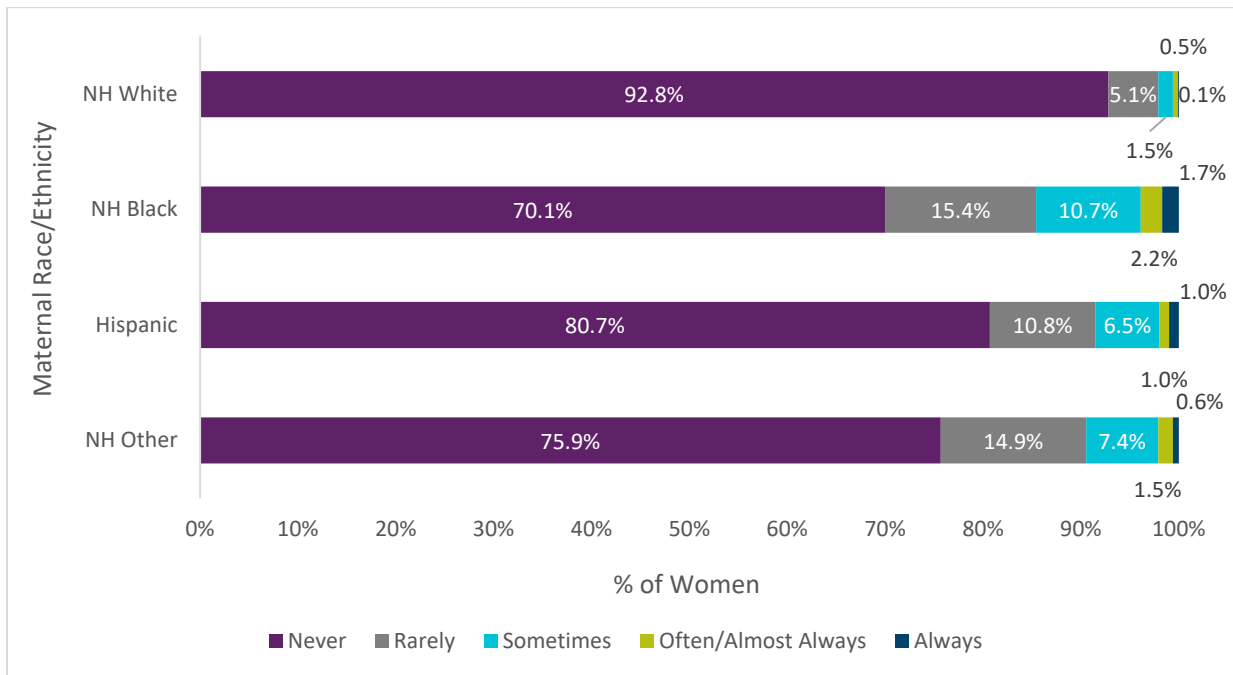
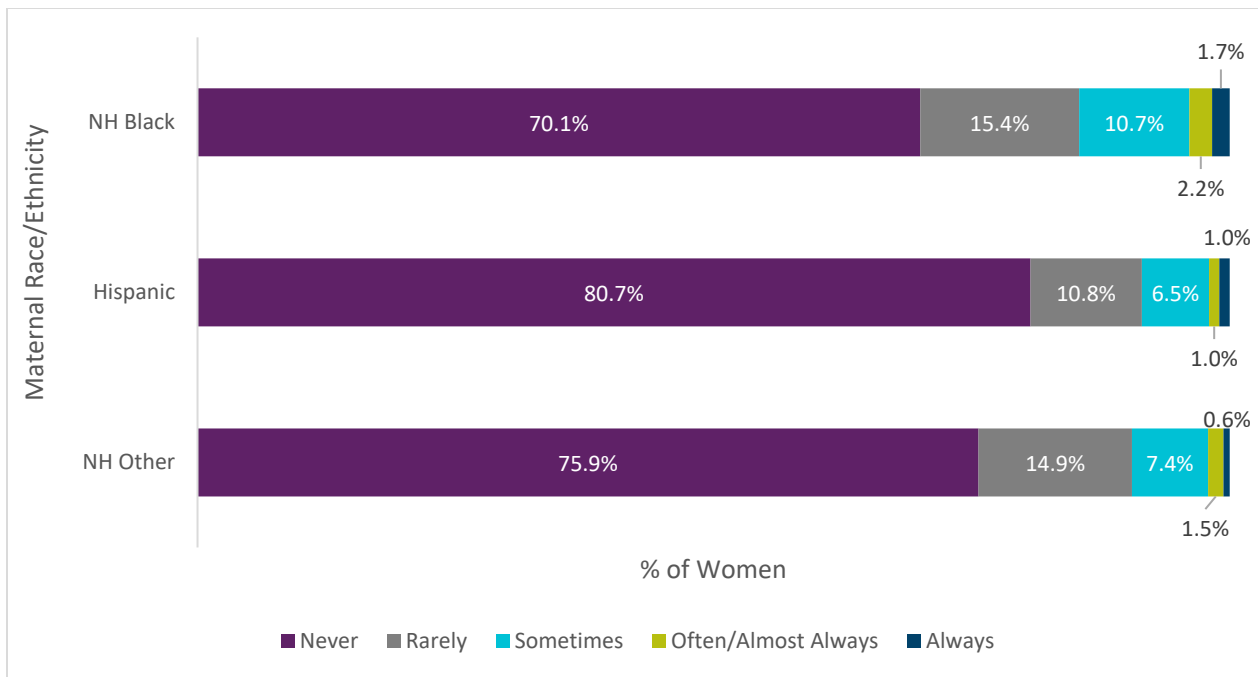
currently inhabit. Some evidence suggests that racism is at least partly responsible for preterm and low birth weight infants, infant mortality, and shortened life expectancies among people of color, and especially Black people in the U.S.

Interpersonal discrimination or harassment based on race is only one form of racism and discrimination. However, it may play a more acute role in inducing a palpable stress response, which over time, could be harmful to the woman and fetus. Women who delivered a live birth in Connecticut in 2016-2018 were asked how often they had experienced discrimination or harassment based on their race, ethnicity, or culture in the year before becoming pregnant. Most women reported *never* experiencing this discrimination/harassment in the year prior to pregnancy. Responses based on frequency are shown in Figure 25 for those that *did* report discrimination/harassment. Discrimination/harassment based on race, ethnicity or culture was experienced *Rarely* by 15.4% of non-Hispanic Black women, and slightly less among Hispanic and non-Hispanic Other race women (Figure 25). Non-Hispanic Black women were more likely to report experiencing discrimination/harassment at all levels of frequency, compared to their Hispanic and non-Hispanic Other counterparts.

Figure 25: Percentage of Women Who Experienced Race Discrimination/Harassment in the 12 Months Prior Pregnancy, by Race/Ethnicity, Connecticut, 2016-2018



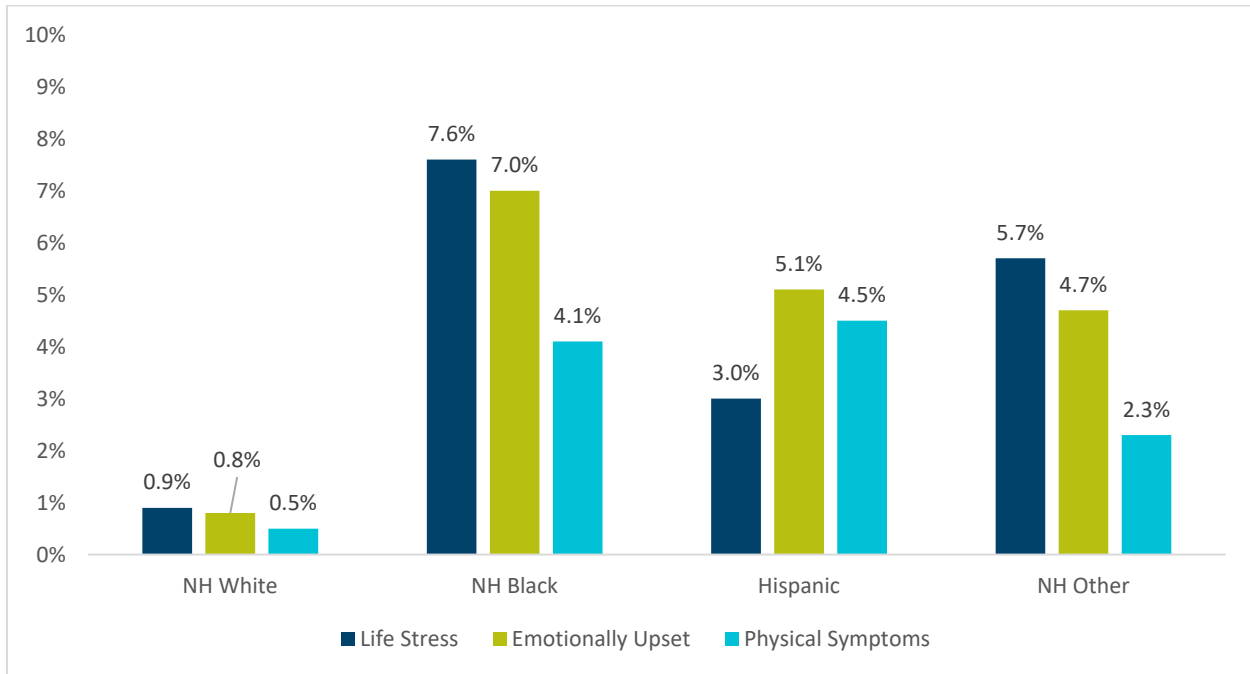
Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018



When asked about experiences that happened *during* their most recent pregnancy, non-Hispanic Black women, 7.6% reported that their race or ethnic background contributed to the stress in their lives; 7.0% reported they felt emotionally upset as a result of how they were treated based on their race or ethnic background; and 4.1% reported experiencing physical symptoms that they felt were related to how they were treated based on their race or ethnic background (Figure 26). More research is needed to determine the role of racism and discrimination in the other racial disparities in health outcomes presented in this report. However, racism and discrimination are clearly detrimental to individuals and

to societies. Plans to improve maternal, infant, and child health must therefore feature anti-racism campaigns prominently in order to have long-term impact.

Figure 26: Effects of Racial or Ethnic Discrimination During Pregnancy, by Race/Ethnicity, Connecticut, 2016-2018



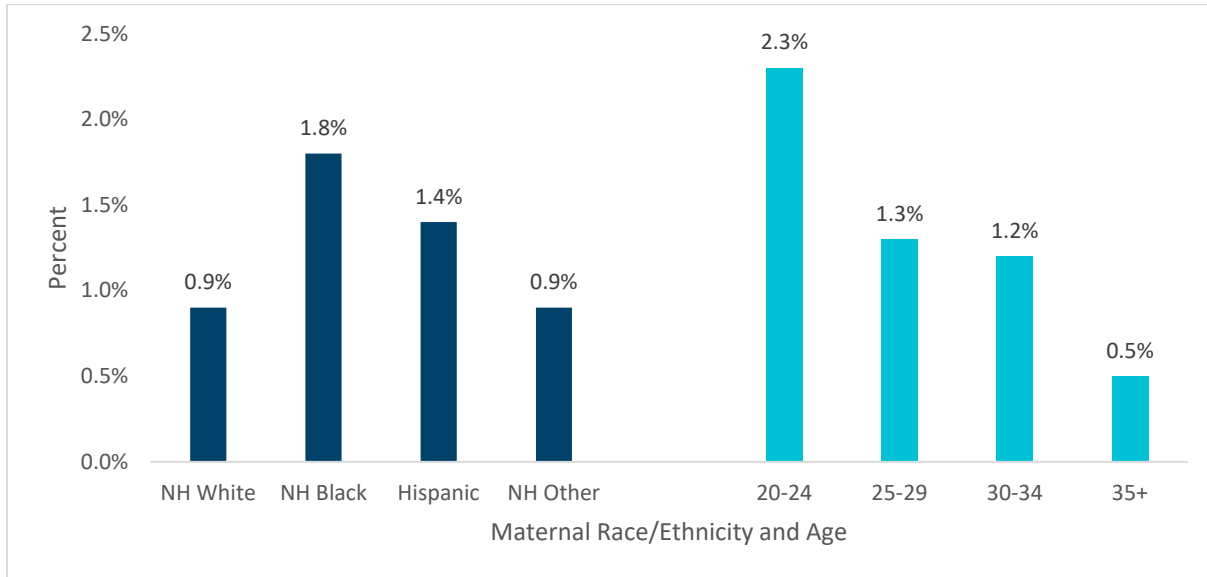
Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018

Interpersonal Violence

Another form of stress that can also cause direct physical harm is interpersonal violence (IPV). In the year before becoming pregnant, 1.1% of women in Connecticut reported experiencing physical violence from their husband or current partner (PRAMS, 2016-2018). The overall prevalence of IPV is so low that any patterns must be treated with caution. However, there is some evidence that IPV may be more prevalent among non-Hispanic Black women, compared to non-Hispanic White and Other race women, and among 20-24-year-olds, compared to other age groups. Patterns in the prevalence of IPV *during* pregnancy were very similar by race/ethnicity and by age (Figure 27). This is consistent with national trends for women overall, where non-Hispanic Black women and women aged 18-24 have significantly higher prevalence of rape, physical violence, or stalking by an intimate partner compared to their counterparts.²⁶

Among women experiencing domestic or other interpersonal violence, 40.9% reported being depressed during their pregnancy, relative to only 9.0% of women who did not experience violence (PRAMS 2016-2018). The medical care and social services sought during pregnancy could be an opportune time to introduce interventions for these women and their partners.

Figure 27: Physical Violence by a Current Partner During Pregnancy, by Race/Ethnicity and Age, Connecticut 2016-2018

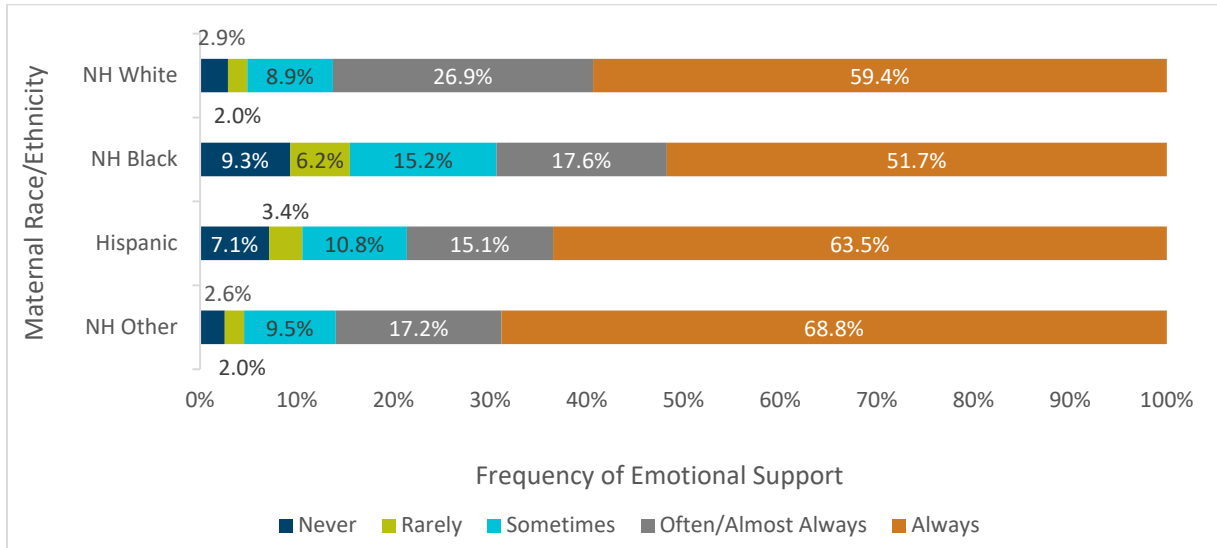


Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018

Social Support

The changes that come with becoming pregnant and caring for an infant can also be very stressful for some women, combined with the physical effects of pregnancy, delivery, and lack of sleep. Material and emotional support from a partner and family and friends can be very important for the mental and physical well-being of a mother and her infant in the postpartum period. In Connecticut in 2016-2018, 68.8% of non-Hispanic Other race women, 63.5% of Hispanic women, 59.4% of non-Hispanic White women, and 51.7% of non-Hispanic Black women reported “always” feeling emotionally supported by their husband or partner in the perinatal period (Figure 28). Non-Hispanic Black (9.3%) and Hispanic (7.1%) were the most likely to report no emotional support from a partner.

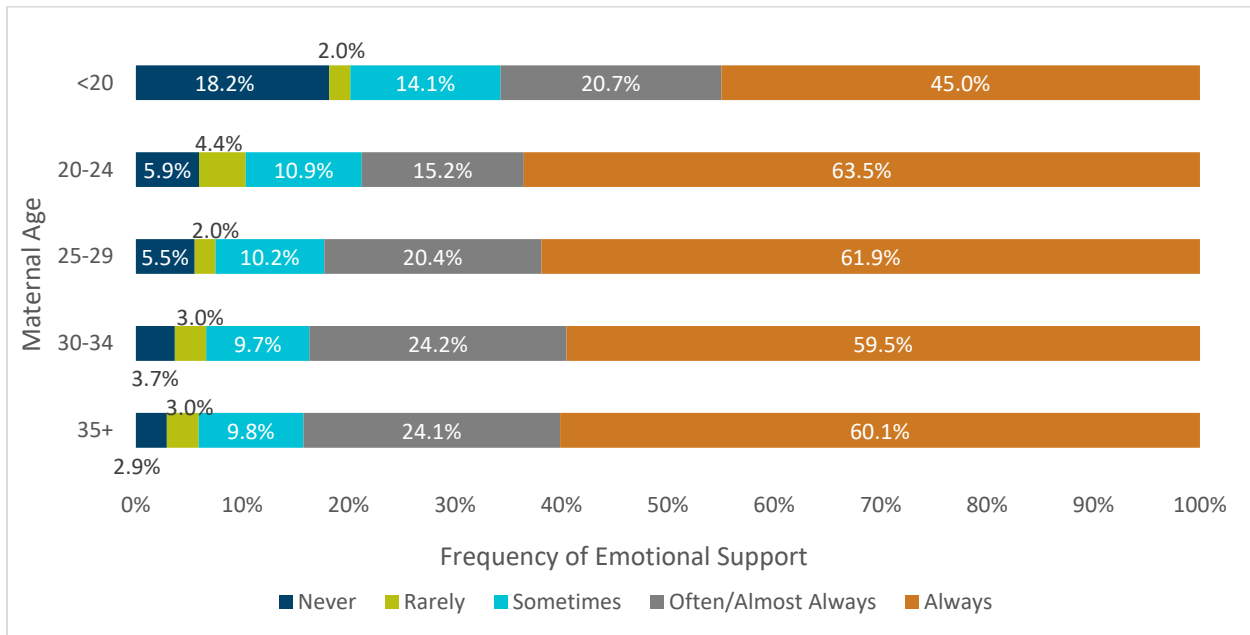
Figure 28: Frequency of Postpartum Emotional Support from Husband/Partner, by Race, Connecticut 2016-2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018

Almost 20% of teen mothers reported receiving no emotional support from a husband or partner postpartum (Figure 29). There was an inverse graded relationship between no emotional support and age among women.

Figure 29: Frequency of Postpartum Emotional Support from Husband/Partner, by Age, Connecticut 2016-2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018

While a husband or partner was the most common source of postpartum social support for women of all race/ethnicities in Connecticut in 2016-2018, women also commonly reported receiving support from parents or in-laws, other family members, and friends (Table 2). Non-Hispanic Black women most commonly reported support from a religious community (24.4%), followed by Hispanics (17.6%), non-

Hispanic Whites (12.2%), and non-Hispanic Other race women (1.4%). Very few women reported they had no one who could support them postpartum.

Table 2: Postpartum Sources of Support for Women, by Race/Ethnicity, Connecticut, 2016-2018

	Non-Hispanic White	Non-Hispanic Black	Hispanic	Non-Hispanic Other
Husband/partner	95.3%	81.1%	86.5%	95.2%
Mother/Father/In-Laws	88.4%	75.7%	69.4%	70.0%
Other Family	67.4%	65.8%	57.4%	44.6%
Friend	65.4%	56.2%	45.3%	48.2%
Religious Community	12.2%	24.4%	17.6%	1.4%
Other	4.9%	9.4%	5.5%	3.8%
No one	0.5%	1.9%	1.7%	0.2%

Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018

Maternal Healthcare

Prepregnancy Care

From 2016-2018, almost 75% of women who delivered a live birth reported visiting any type of health care provider in the 12 months prior to pregnancy (PRAMS, 2016-2018). Over 55% of women received a regular checkup, 76.1% had a checkup with an OB/GYN, 19.1% had a visit for family planning, 11.9% had a visit for depression or anxiety, and 69.2% visited a dentist (responses not mutually exclusive).

Race/ethnicity, age, and insurance status all influence the prevalence of healthcare visits in the year before becoming pregnant in Connecticut. For example, over 80% of non-Hispanic White women saw an OB/GYN in the year before becoming pregnant, compared to 75.8% of non-Hispanic Black women, 69.6% of Hispanic women, and 63.1% of non-Hispanic Other race women (Table 3). Similarly, over 70% of women with either private health insurance or Medicaid/Husky saw an OB/GYN in the prior year, but only 53.8% of uninsured women. Prevalence of past-year dental visits were similarly disparate by insurance status, with 75.0% of women with private insurance reporting a dental visit, compared to only 55.7% of those on Medicaid/Husky, and 49.3% of those uninsured. See Table 3 for additional comparisons.

Table 3: Healthcare Visits in the 12 Months Before Pregnancy, by Race/Ethnicity, Age, and Health Insurance Status, Connecticut, 2016-2018

	Any healthcare visit	Regular checkup	OB/GYN visit	Family planning visit	Depression/Anxiety visit	Dental visit
White	85.6%	52.1%	80.1%	19.2%	14.0%	73.5%
Black	68.6%	65.0%	75.8%	18.4%	9.3%	62.8%
Hispanic	56.7%	59.0%	69.6%	21.0%	9.4%	63.4%
Other	67.7%	58.2%	63.1%	14.8%	6.3%	61.8%
Age						
<20	51.4%	67.5%	45.6%	15.9%	18.8%	73.6%
20-24	56.5%	57.0%	65.4%	25.4%	12.6%	56.3%
25-29	69.5%	60.2%	72.7%	18.7%	12.1%	62.3%
30-34	81.4%	51.2%	80.8%	19.7%	9.8%	71.6%
35+	82.4%	55.6%	78.9%	16.8%	14.0%	76.4%
Insurance						
Private insurance	84.3%	54.3%	79.4%	20.2%	10.8%	74.9%
Medicaid/Husky	64.2%	61.4%	71.2%	15.9%	17.1%	55.7%
Uninsured	37.9%	49.6%	53.8%	16.0%	6.9%	49.3%

Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018

Prenatal Care

To assure optimal health outcomes for a pregnant woman and her child, preventive care is critical. Early and continuous prenatal care, including oral health care, throughout a woman’s pregnancy helps medical providers identify and treat health problems early. Doing so can support the health of the mother and provide unborn babies with as healthy of a start to life as possible.

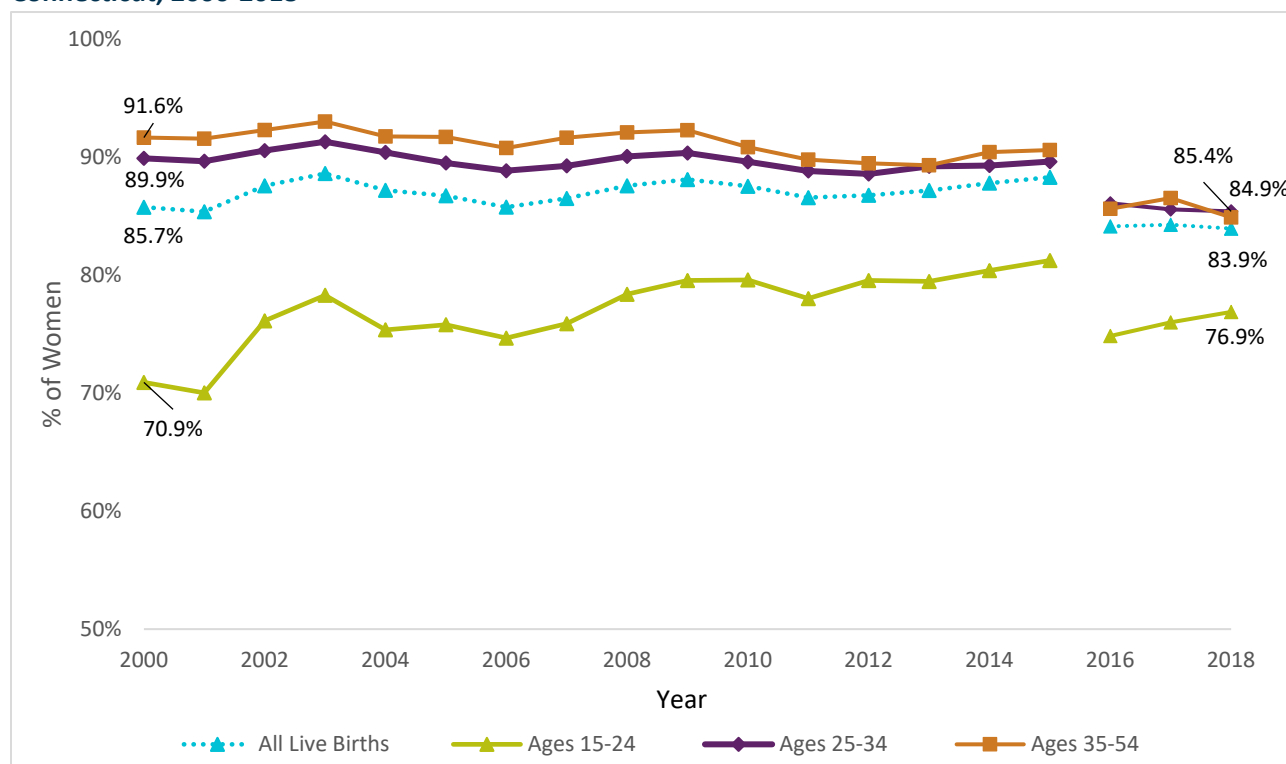
Beginning prenatal care in the first trimester of pregnancy and following the prescribed visit schedule improves the likelihood of positive health outcomes for mother and baby.²⁷ Infants whose mothers do not receive prenatal care are three times more likely to be born low birthweight and five times more likely to die compared to infants born to mothers who receive prenatal care.²⁸ Early and regular prenatal care is protective against maternal and infant adverse outcomes, including infant mortality, low birthweight, and maternal complications. By receiving early and continuous care, early diagnosis, treatment, and prevention of health problems is more likely, and doctors can also discuss topics such as breastfeeding, infant safe sleep environment, and depression to help promote health and well-being in the postpartum period.

Healthy People aims for 77.9% of women to have early prenatal care. Connecticut has exceeded that goal for the past three years (84.0% for 2016-2018) and fares better than the U.S. as well (77.0% in 2016 and 2017).^{29,9} Percentages of women receiving early prenatal care also appear to have been higher than the Healthy People 2020 goal of 77.9% for years before 2016, with the minimum percentage of 85.4% occurring in 2001. However, caution in comparing rates before and after 2016 is warranted due to changes in collection methods. Due to shifts in rates between 2015 and 2016, reporting of long term trends for timing of prenatal care initiation is limited to the years prior to 2016.³⁰ In 2016, Connecticut adopted the 2003 Revision of the US Birth Certificate which included changes to how timing of prenatal care initiation was collected. Specifically, the 2003 Revision collects the date of the first prenatal care visit rather than the month of pregnancy during which prenatal care began. Due to these changes, rates based on prenatal care timing are not directly comparable between Revisions. Internal review by DPH suggests that reporting of date of prenatal care initiation, rather than month, yields more accurate

estimates of timing of prenatal care initiation and thus rates for 2016 and later are considered to have slightly higher validity than those released prior to 2016.

Rates of early prenatal care utilization for the entire population of Connecticut were stable from 2000 to 2015. Many subgroups of women have shown no appreciable change in rates of early prenatal care. For the period 2000-2015, percentages of early prenatal care initiation were stable for non-Hispanic Asian (88.2%) women, mothers aged 25 years and older (Figure 30), and mothers with private insurance (92.6%). Among women with Medicaid as payer, rates declined between 2000 and 2006, but held stable (72.5%) between 2006 and 2015. Improvement did occur among women under 25 years of age (Figure 30) and among Hispanic women (76.5% to 83.1%). Improvement also occurred in non-Hispanic Black populations beginning in 2006 and through 2015 (74.7% to 81.8%). Non-Hispanic White women showed a modest decline from 93.5% to 91.0% between 2000 and 2013.

Figure 30: Percentage of Pregnant Women Who Received Early Prenatal Care by Maternal Age Group, Connecticut, 2000-2018



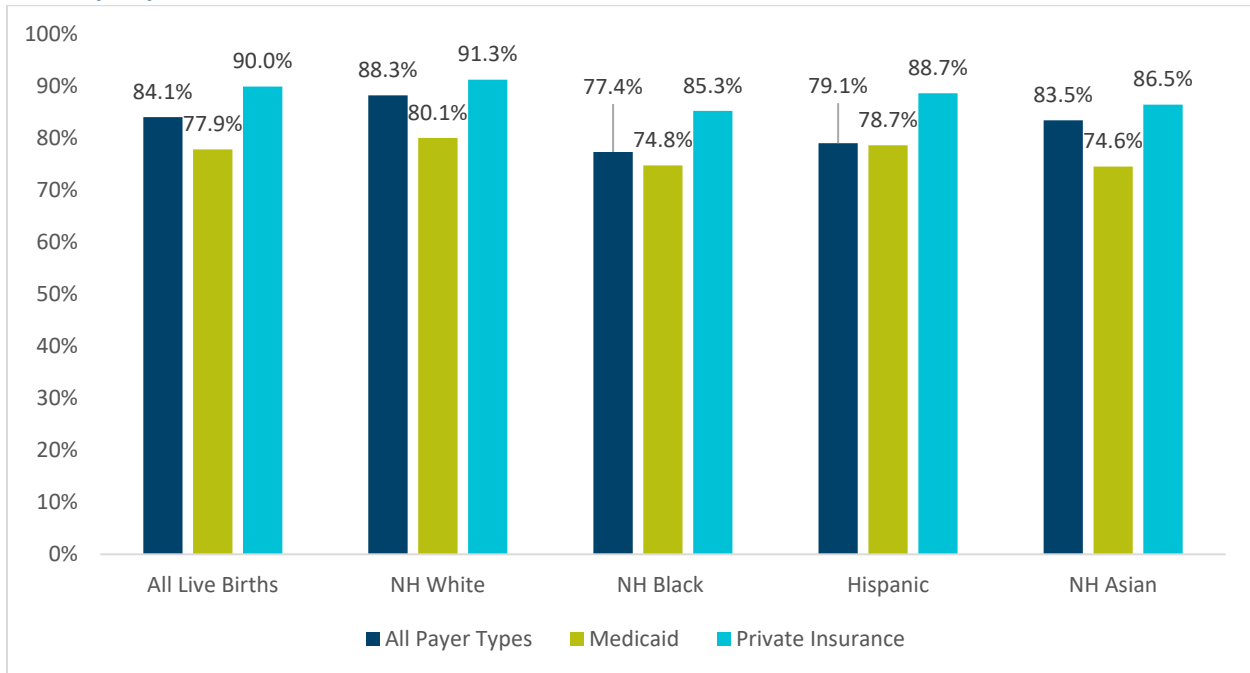
*See note above about changes in reporting methods between 2015 and 2016

Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2000-2017, and provisional 2018 data

While the earlier data provides information on changes over time, analysis of newer data on rates of prenatal care for the period 2016-2018 reveals current disparities by race/ethnicity, maternal age group, and primary payer at delivery. Across all payer types, non-Hispanic Black and Hispanic women have the lowest rates of early prenatal care initiation with a rates that were 8-10 percentage points lower than non-Hispanic White women (Figure 31). When comparing age groups, the percentage of women aged 15-24 years with early prenatal care is 10 percentage points lower than mothers 25 years and older. The largest gaps in early prenatal care occurred between payer types. Across all races and ethnicities,

women with Medicaid insurance were less likely to have early prenatal care compared with private insurance (Figure 31), a difference of 12 percentage points. Some of the disparities in prenatal care and pregnancy health noted later could be related to pregnancy intentionality among women of different races and ages, as noted above.

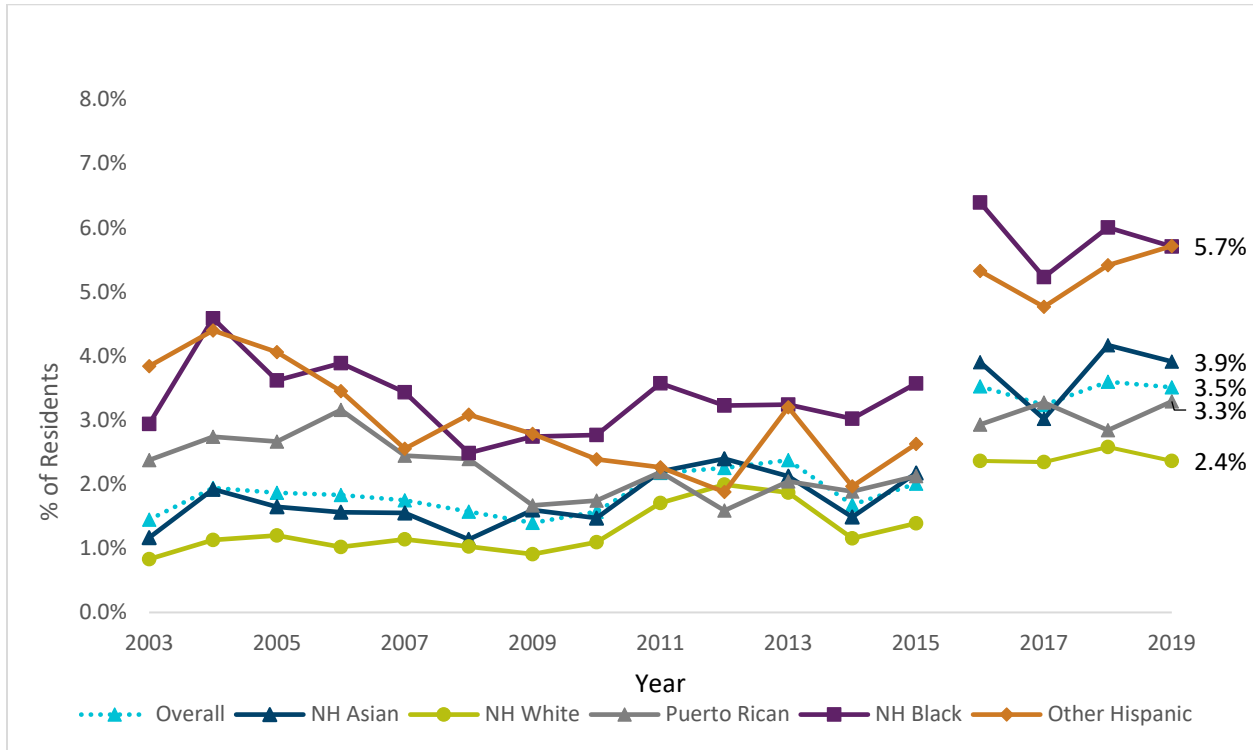
Figure 31: Percentage of Pregnant Women Who Received Early Prenatal Care by Race/Ethnicity and Delivery Payer, Connecticut, 2016-2018



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2016-2017 and provisional 2018 data

Racial/ethnic disparities are even more apparent when considering women who did not initiate prenatal care until the 3rd trimester, or *never* received prenatal care. In 2019, 5.7% of non-Hispanic Black and Other Hispanic women delivered live births following late or no prenatal care, compared to only 2.4% of non-Hispanic White women (Figure 32).

Figure 32: Percentage of Connecticut Residents Delivering Live Births with Initiating Late (3rd Trimester) or No Prenatal Care, Connecticut, 2003 – 2019

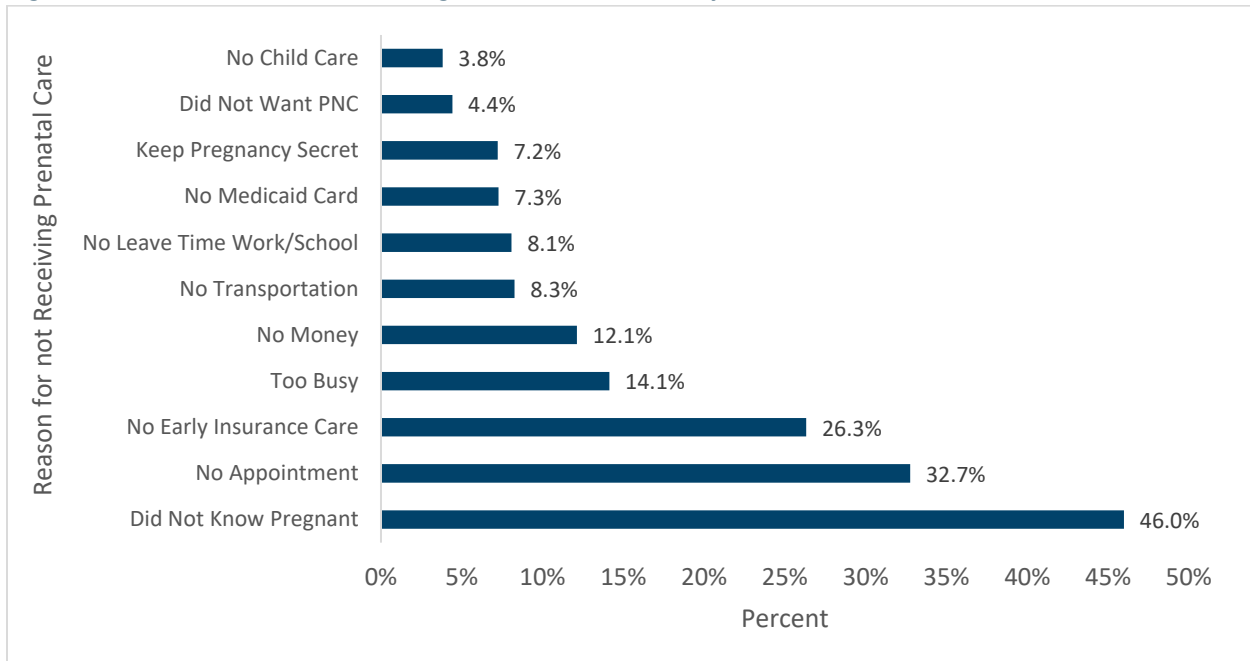


*See note above about changes in reporting methods between 2015 and 2016

Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2003-2019

Only 9.8% of women in Connecticut reported not receiving prenatal care as early as they desired (PRAMS, 2016-2018). Of these, 46.0% noted a reason was that they did not know they were pregnant (Figure 33). This indicates the importance of family planning and pregnancy intentionality (discussed above) in achieving early prenatal care for women in Connecticut.

Figure 33: Reasons for Not Receiving Prenatal Care as Early as Desired, Connecticut, 2016 - 2018



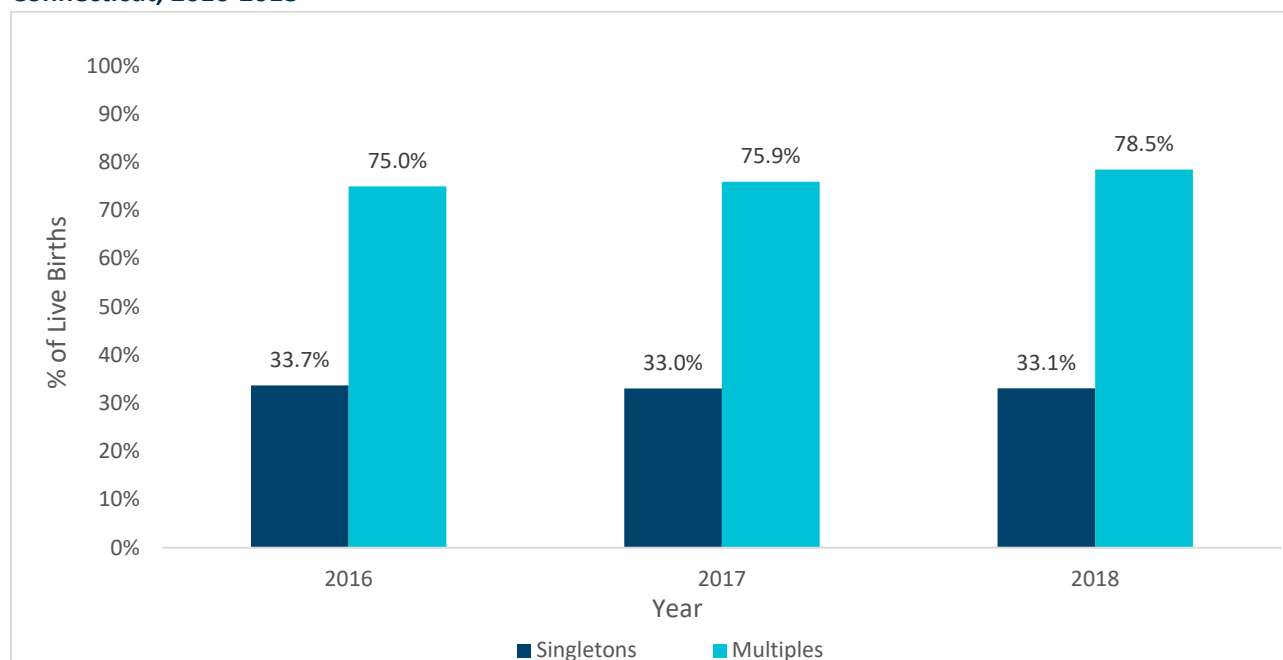
Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

In 2017-2018, about 84% of women in Connecticut received prenatal care beginning in their first trimester (CT DPH Office of Vital Records). DPH strives to improve access to prenatal care by supporting primary care sites and providing free pregnancy testing at family planning clinics. At these sites, patients are referred for early prenatal care, in keeping with established protocols. Outreach services in Hartford and New Britain through the federal Family Wellness Healthy Start program help encourage pregnant women to utilize early and regular prenatal care. Additionally, changes in 2015 in the state's public insurance policies, such as expanding eligibility for pregnant women with incomes up to 263% of the federal poverty level (FPL) and presumptive eligibility for pregnant women,³¹ could continue to encourage early entry into prenatal care.

Cesarean Deliveries

Between 2016-2018, prevalence of Cesarean deliveries in Connecticut remained constant at about one-third of singleton births. For multiples, there was a slight increase from 75.0% in 2016 to 78.5% in 2018 being delivered by C-section (Figure 34). But overall, rates have remained stable in recent years.

Figure 34: Annual Percentages of Cesarean Deliveries to Connecticut Residents by Birth Plurality, Connecticut, 2016-2018



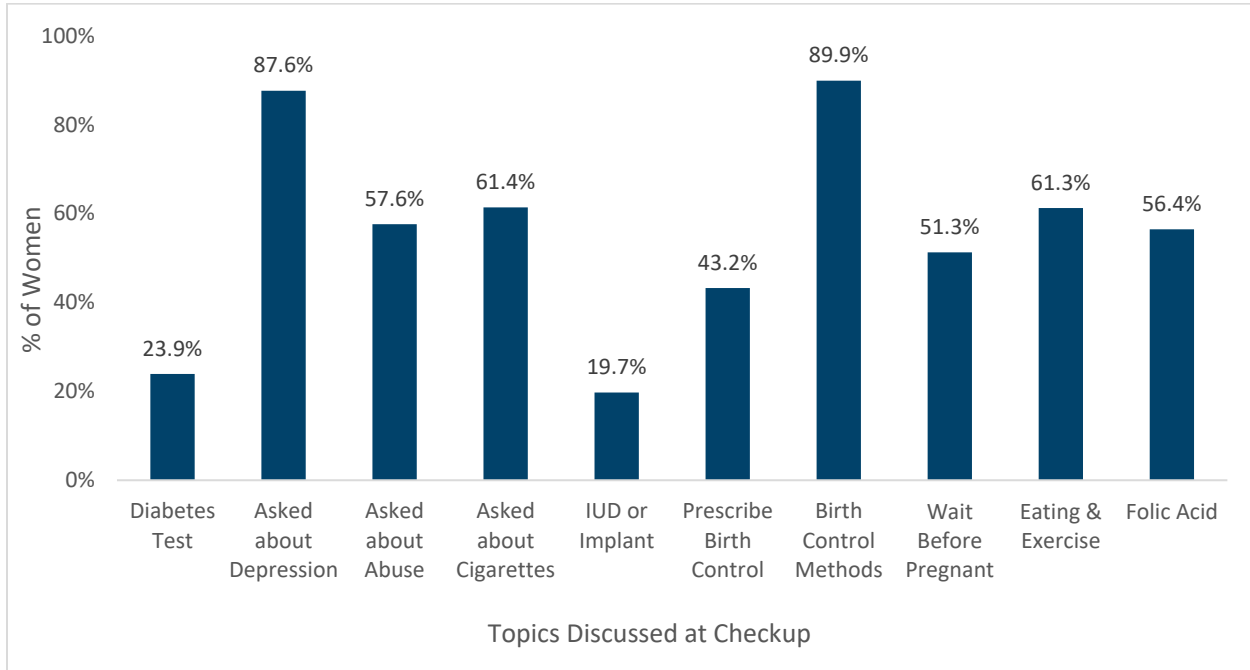
Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2016-2017 and provisional 2018 data

Postnatal Healthcare

Almost 95% of women in Connecticut reported visiting a healthcare provider for a postpartum checkup in 2016-2018. Prevalence of postpartum visits were lower among non-Hispanic Black (91.0%) and Hispanic (91.9%) women. Only 88.7% of uninsured women reported a postpartum visit.

Among women reporting a postpartum visit, the majority reported being asked by their healthcare provider about depression, domestic abuse, smoking cigarettes, birth control methods, pregnancy spacing, eating and exercise, and taking folic acid (Figure 35).

Figure 35: Postpartum Checkup Experiences among Women, Connecticut, 2016 - 2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

However, reported postpartum checkup experiences again vary substantially by race/ethnicity. Notably, non-Hispanic Black (53.3%) and Hispanic (51.5%) women were much more likely to be prescribed contraceptives than their non-Hispanic White (38.0%) and non-Hispanic Other race (39.3%) counterparts (Table 4). Similar trends are evident for having an IUD inserted at a postpartum checkup. While family planning and access to contraception are important components of promoting the health of women and children, the racial disparities in these prevalences may be evidence of a history of forced sterilization among poor women of color in U.S. history. Other barriers to LARC insertion, such as low levels of provider knowledge and training on counseling patients about LARC, and insertion and removal procedures, may also impact awareness of and access to these methods for patients. Clinic stock of LARC methods can also impact access as many clinics do not keep LARCS on-hand and are therefore unable to provide same day insertions. Requiring patients to schedule an insertion appointment at a later date can be a barrier, especially for patients who do not receive paid time off and/or have caregiving responsibilities. This concerning racial disparity should be explored further, in consultation with medical providers and patients.

Table 4: Postpartum Checkup Visit Experiences Prevalence, by Maternal Race/Ethnicity, Connecticut, 2016-2018

	Non-Hispanic White	Non-Hispanic Black	Hispanic	Non-Hispanic Other
Take Folic Acid	53.9%	55.8%	58.6%	65.4%
Discuss Healthy Lifestyle	59.0%	66.0%	62.3%	65.2%
Discuss Interpartum Wait Time	49.8%	57.1%	49.7%	56.4%
Discuss Birth Control	90.3%	91.4%	89.3%	86.8%
Prescribe Contraceptive	38.0%	53.3%	51.5%	39.3%
Insert IUD	16.5%	23.8%	26.1%	17.5%
Discuss Smoking Status	54.4%	67.4%	74.7%	59.6%
Discuss Domestic Abuse	47.3%	71.0%	73.6%	58.5%
Screen for Depression	87.8%	87.8%	88.2%	84.9%
Test for Diabetes	11.7%	39.3%	41.8%	29.4%

Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

Hispanic women were much more likely to report that their healthcare provider asked them about smoking cigarettes during their postpartum visit (74.7%) compared to their counterparts, especially White women (54.4%) (Table 4). This is *not* in line with prevalence of smoking during the perinatal period by race/ethnicity (described above).

Maternal Mortality

Many chronic conditions and diseases are associated with pregnancy complications. Rising rates of chronic disease such as obesity, hypertension and cardiovascular disease have contributed to the rise in maternal deaths.^{32,33} Research shows that 40% of deaths from pregnancy-related complications are potentially preventable through improvements to health before pregnancy and improved quality of medical care.³⁴ To prevent maternal mortality, the following are important to promote:

- **Preconception health.** A healthy pregnancy begins before conception. Improving women’s health across the lifespan and preventing chronic disease results in healthier pregnancies with fewer complications.^{35, 36} Treatment of cardiovascular disease prior to conception may help prevent maternal deaths caused by cardiovascular complications.³²
- **Prenatal care.** Having prenatal care is associated with healthy pregnancy outcomes, especially during the first trimester.³⁷ Management of chronic conditions during pregnancy is key to preventing complications throughout pregnancy and delivery.³⁵ To promote access to prenatal care, the 2010 Affordable Care Act requires insurance plans to cover prenatal and maternal care.
- **Medical care improvement.** Improvements to hospital protocol and patient safety tools have been found to be effective strategies to reduce maternal mortality. In one study, severe maternal morbidity from hemorrhage was reduced by 20 percent through a collaborative quality improvement program.³⁸ Systems to detect early warning signs can prevent delays in diagnosing and treating conditions that lead to maternal death.³⁹ Quality improvement toolkits, maternal early warning systems and other resources are available to support and guide quality improvement efforts in health facilities.

- **Dismantling systems of racism and oppression.** Non-Hispanic Black women have consistently higher rates of maternal mortality than other racial/ethnic groups, even when accounting for socioeconomic status. Implicit bias and racism experienced by non-Hispanic Black women over the life course induces physical and emotional harm. Improvements in maternal mortality will only be achieved by addressing institutional and systemic racism throughout our society.

In the US, maternal mortality has been on the rise, increasing 26.6% from 2000 to 2014.⁴⁰ Compared with other high-income countries in North America and Western Europe, the United States has the highest rate of maternal mortality despite a global trend of decreasing maternal deaths.⁴¹

There are substantial and persistent disparities in maternal deaths by race and ethnicity. Specifically:

- For non-Hispanic Black women, the rate of maternal mortality has been three to four times that of White women for over a century.³⁶
- 47.2 maternal deaths per 100,000 live births occurred up to 42 days postpartum among non-Hispanic Black women, 2.6 times the maternal death rate of non-Hispanic White women (18.1 deaths per 100,000 live births), and 4 times higher than the rate among Asian/Pacific Islander women (11.6 deaths per 100,000 live births) and Hispanic women (12.2 deaths per 100,000 live births).⁴²

In addition, women at greater risk of maternal mortality include:

- Women aged 40 or older, with 31.9 percent of maternal deaths from 2013-2014 occurring in this population.⁴³
- Women who are obese.⁴⁴
- Uninsured women are three to four times more likely to die of pregnancy-related complications than their insured counterparts.³⁷

In 2018, Connecticut passed legislation establishing a maternal mortality review program to review medical records and data related to each maternal death case in the state. The legislation also established a maternal mortality review committee within CT DPH to conduct a comprehensive, multidisciplinary review of cases in order to identify factors associated with maternal mortality and make recommendations to reduce the incidence of maternal deaths. Through the work of this committee, Connecticut identifies and characterizes these maternal deaths as Pregnancy-Related or Pregnancy-Associated maternal deaths, which are approximately 8-10 maternal deaths per year. In Connecticut from 2015-2017, 11 out of 32 maternal deaths were Pregnancy-Related.

PERINATAL AND INFANT'S HEALTH

The perinatal period refers to the period immediately before and after birth. The World Health Organization defines the perinatal period as beginning at 22 completed weeks of gestation and ending seven completed days after birth.⁴⁵ The health of the mother and child during this period are closely intertwined and indicators during the perinatal period provide an indication of the quality of health care before, during, and after pregnancy.^{46, 47} Specifically, perinatal health is linked to birth outcomes including preterm and low birthweight births and infant and maternal mortality.

Fetal Mortality

Between 2000-2017, the rate of fetal deaths per 1,000 births ranged from 3.9 in 2014 to 5.9 in 2004 (Figure 36). The rate at both the start and end of this period was 5.2. While rates increased and decreased over these years, no clear temporal pattern is apparent, implying these changes may be “noise” in the data for this relatively rare event.

Figure 36: Fetal Death Rate among Connecticut Residents, by Year, Connecticut, 2000-2017



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2000-2017

Preterm Birth

Preterm and low birthweight births, referring to infants born before 37 completed weeks gestation and infants weighing less than 5 lbs. 8 oz., respectively, are standard measures of perinatal health globally. Both indicators are important for predicting infant survival, child development, and well-being.⁴⁸ They also frequently occur together as the majority of births that are preterm are also low birthweight. Preterm birth and low birthweight are among the leading causes of infant deaths in Connecticut as well as nationally.^{49, 50} Infants born preterm and/or low birthweight are at risk for serious health consequences, such as respiratory problems, intellectual and developmental disabilities, vision and

hearing loss, and cerebral palsy.^{51, 52} It is estimated that preterm birth costs the US at least \$26.2 billion annually.⁵³

Major risk factors for preterm birth include pre-eclampsia or eclampsia, previous preterm birth, periodontal disease, low body-mass index of the mother, and the experience of being a black woman in the United States.

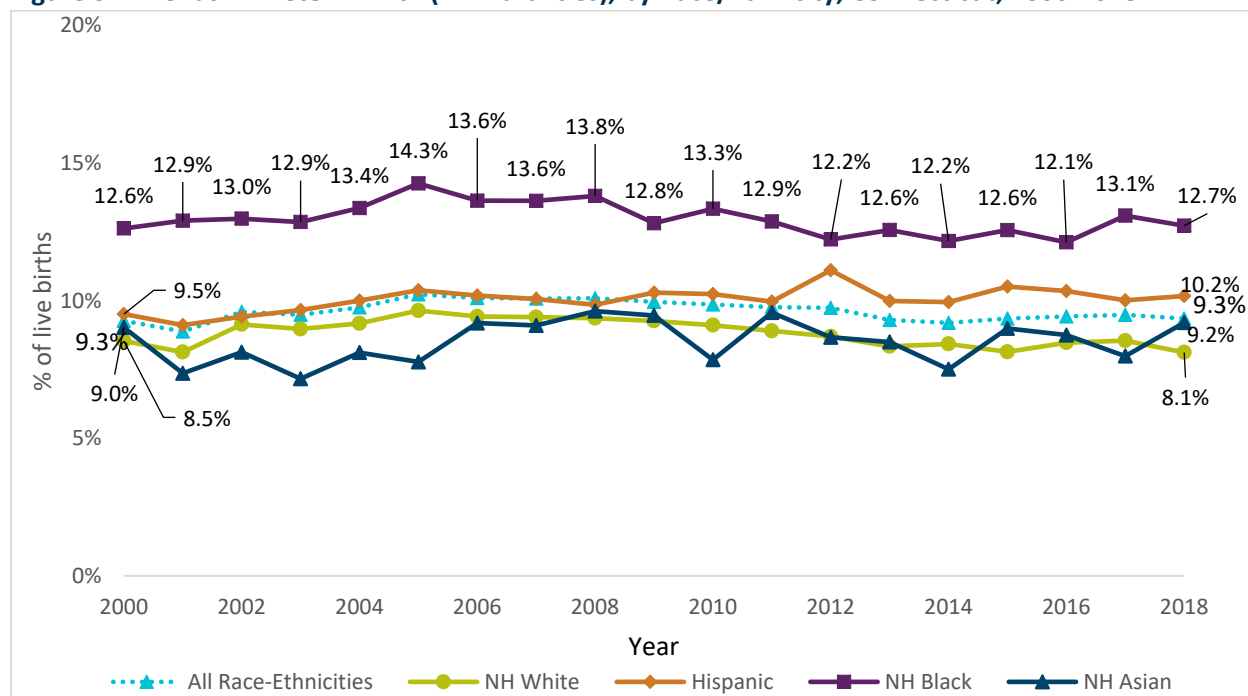
Mothers carrying multiples are also at an increased risk for preterm birth.⁵⁴ The national rate of preterm births among all multiples rose over the period 1980 - 2006. Major drivers behind the upward trend were increases in non-medically indicated inductions, cesarean deliveries, and use of assisted reproductive technology (ART), such as in vitro fertilization which often results in multiple births.⁵⁵ As a state with relatively high usage of ART in the population, higher rates of preterm birth in Connecticut may be expected. Rates of multiple births also vary between population subgroups.

Because preterm delivery is more common among multiples, rates of preterm birth are often reported separately for all births and for single infant births (singletons). Providing rates for singletons only removes the influence that varying rates of multiple births may have on overall preterm rates.

Since 2007, national rates of preterm birth declined. This decline has primarily been attributed to reductions in the number of births to women <25 who are more likely to have preterm births as well as reduced rates of preterm birth across all maternal age groups.⁵⁶ These reduced rates across all maternal age groups have been attributed to fewer multiple births, state-level smoking bans, and interventions including use of hormonal interventions in women at high risk for preterm birth.⁵⁷ However, declining preterm birth rates hit a low of 9.6% in 2014 have increased annually through 2017.^{58, 59}

Connecticut had a lower rate of preterm birth in 2017 compared to U.S. as a whole (9.5% versus 9.9%, respectively).⁶⁰ The Healthy People 2020 target aims to reduce preterm birth to no more than 9.4% of all live births. Connecticut reached the Healthy People 2020 preterm birth rate goal of 9.4% in 2013 after declining from a peak in preterm birth rates of 10.4% in 2005 (Figure 37). However, the preterm birth rate has not consistently stayed below the HP2020 goal since 2013. In 2016 and 2017, the state rate for preterm birth among all pluralities was 9.4% and 9.5%, respectively. Preliminary data for 2018 suggest that rates were similar to those in 2017. In Connecticut, the long-term declines in preterm birth rates appear to have slowed or possibly ceased altogether during the period of 2014 - 2018. These rate changes are similar to trend changes at the national level.^{58, 59}

Figure 37: Trends in Preterm Birth (All Pluralities), by Race/Ethnicity, Connecticut, 2000-2018

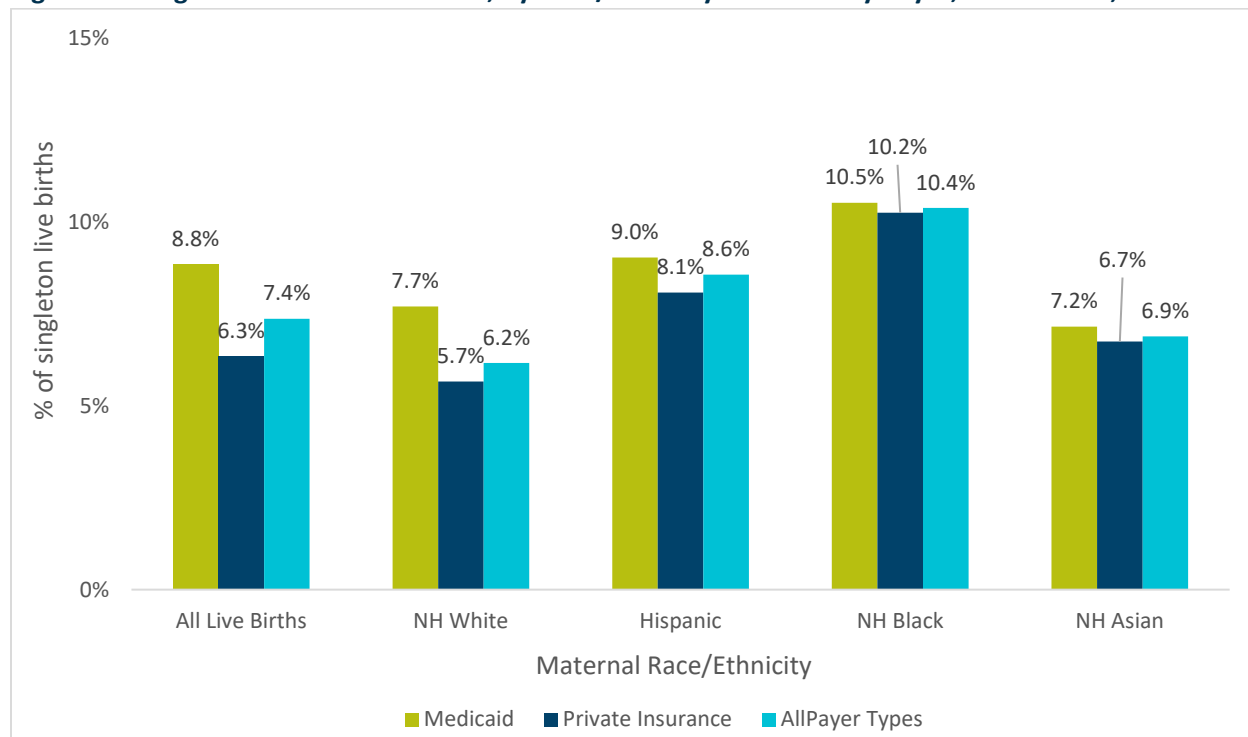


Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2000-2017 and provisional 2018 data

Within Connecticut, disparities by race/ethnicity, primary payer, and age persist. As with many adverse birth outcomes, non-Hispanic Black women consistently have the highest percentage of preterm births but their rates have shown continual, yet modest, improvement since 2006. Rates among non-Hispanic White mothers are trending lower as well. In contrast, rates of preterm births among Hispanic women, which are higher than the rates among non-Hispanic white women, have slightly worsened since 2000. Preterm births among non-Hispanic Asian women are more variable from year to year and have not shown evidence of rate changes over time.

While race and ethnicity are key to understanding differences in risk of preterm birth in Connecticut mothers, insurance status is also a strong predictor of risk. For both Hispanic and non-Hispanic White women, the rate of singleton preterm birth is significantly lower for women with private insurance versus Medicaid as the delivery payer (Figure 38). However, both Hispanic and non-Hispanic White women on Medicaid have lower rates of singleton preterm birth than non-Hispanic Black women with private insurance in Connecticut.

Figure 38: Singleton Preterm Birth Rate, by Race/Ethnicity and Delivery Payer, Connecticut, 2014-2018



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry 2014-2017 and provisional 2018 data

Singleton preterm birth rates in Connecticut differ among maternal age groups. When comparing women across 5-year age groups, singleton preterm births were highest among women ages 40 years and older (9.7%), higher among teens aged 15-19 years (9.3%) and lowest among women for 30-34 years of age (6.9%) for the combined years of 2014-2018. Thus, women at both ends of the age spectrum are at highest risk for preterm birth in Connecticut which is consistent with national data. While teenage and older mothers often share risk factors for preterm birth, such as low socioeconomic status, smoking, and body mass extremes, physiological immaturity is a primary risk factor specific to teenage mothers and preexisting chronic disease conditions is a primary risk factor specific to mothers over 40 years of age.⁵⁶

Prevalence of receiving the 17P injection to prevent preterm birth also varies by sociodemographic characteristics, though it is not possible to tell whether this is due to underlying variation in rates of risk for preterm birth or instead in differences in receipt of healthcare. For example, 9.9% of non-Hispanic Black women reported receiving a 17P shot, versus on 4.4% of non-Hispanic White women (Table 5). Rates were also high among 20-24-year-olds (9.6%), women 35 years and older (8.7%), and women on Medicaid/Husky (8.1%). Also notable are the relatively large number of women who did not know if they had received a 17P shot, specifically 10.2% of uninsured women and 8.8% of women under 20 years old. This indicates there may be a need for enhancing medical communication in some populations, so that women are informed and empowered in their health care decisions during pregnancy.

Table 5: Prevalence of Women Receiving 17P Shots to Prevent Preterm Birth, by Maternal Race/Ethnicity, Insurance Status, and Age, Connecticut, 2016 -2018

	Yes (%)	Don't Know (%)
Race/Ethnicity		
White non-Hispanic	4.4%	1.6%
Black non-Hispanic	9.9%	4.3%
Hispanic	8.2%	6.8%
Other non-Hispanic	6.1%	6.4%
Insurance		
Private	5.1%	1.9%
Medicaid/Husky	8.1%	6.2%
Uninsured	7.2%	10.2%
Age		
<20	6.7%	8.8%
20-24	9.6%	7.7%
25-29	5.2%	4.0%
30-34	4.2%	2.9%
35+	8.7%	2.0%

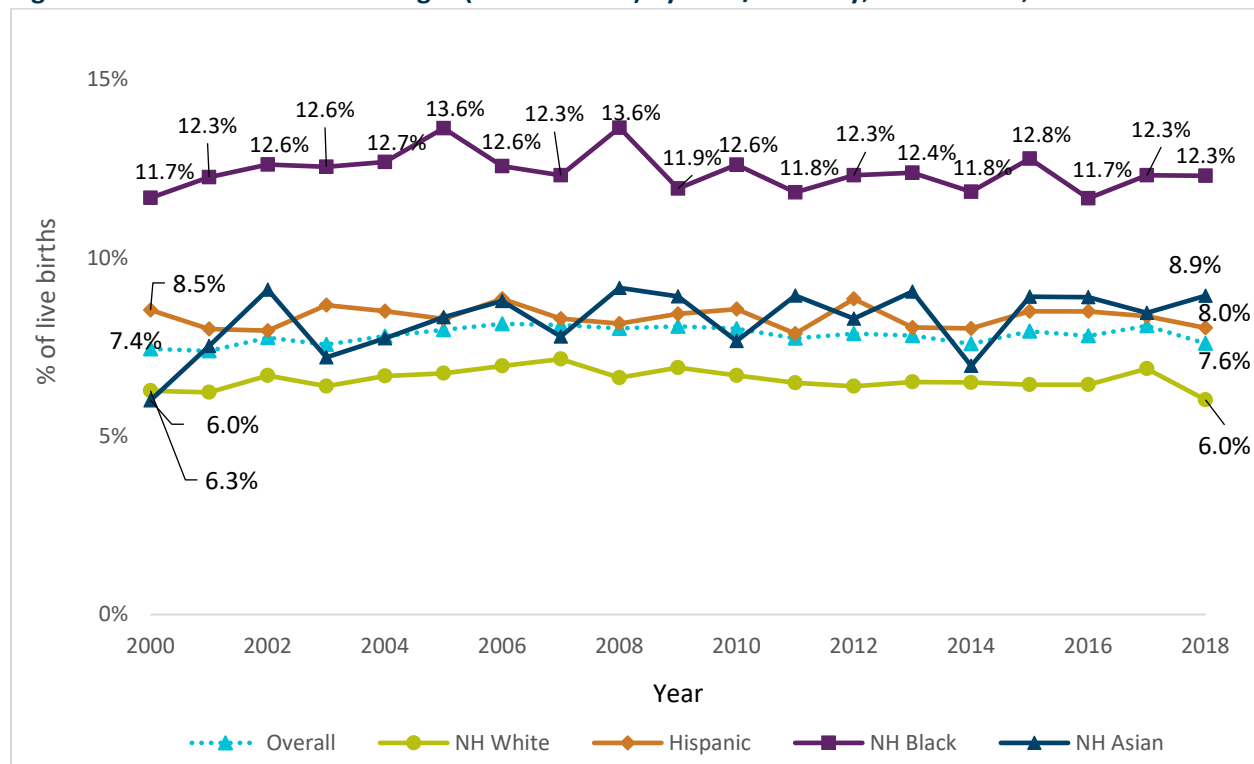
Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016-2018

Low Birth Weight

The risk factors involved in preterm birth are multiple and complex. Low birth weight (LBW) in an infant is associated with two underlying risks: a preterm delivery in which case the infant had less time to grow or a full-term delivery in which case the infant did not grow as large as expected based on population rates (a condition known as small-for-gestational-age). Infants who are born with LBW are often preterm and therefore share many of the same risk factors and outcomes discussed in the Preterm Births section. Infants who are born small for their gestational age (SGA) have been associated with maternal prepregnancy underweight or inadequate gestational weight gain, substance use during pregnancy, hypertensive conditions, short stature, and multiple births.

Rates of LBW in Connecticut (8.1%) were not different than the national rate (8.2%) in 2017.⁶⁰ Healthy People 2020 aims for low birthweight rates to be reduced to 7.8%. Connecticut surpassed that goal in 2014 as part of a declining trend in the rate of in LBW between 2006 and 2014 (Figure 39) but recent years have ticked back up with the rates in 2015, 2016, 2017, and 2018 (preliminary data) being 7.9%, 7.8%, 8.1%, and 7.6%, respectively. These recent shifts in rates are consistent with the trend changes for preterm births described in the previous section and are similar to national trends.⁵⁹ Reasons for lack of continued decline in both preterm and LBW births since 2015 warrants further research.

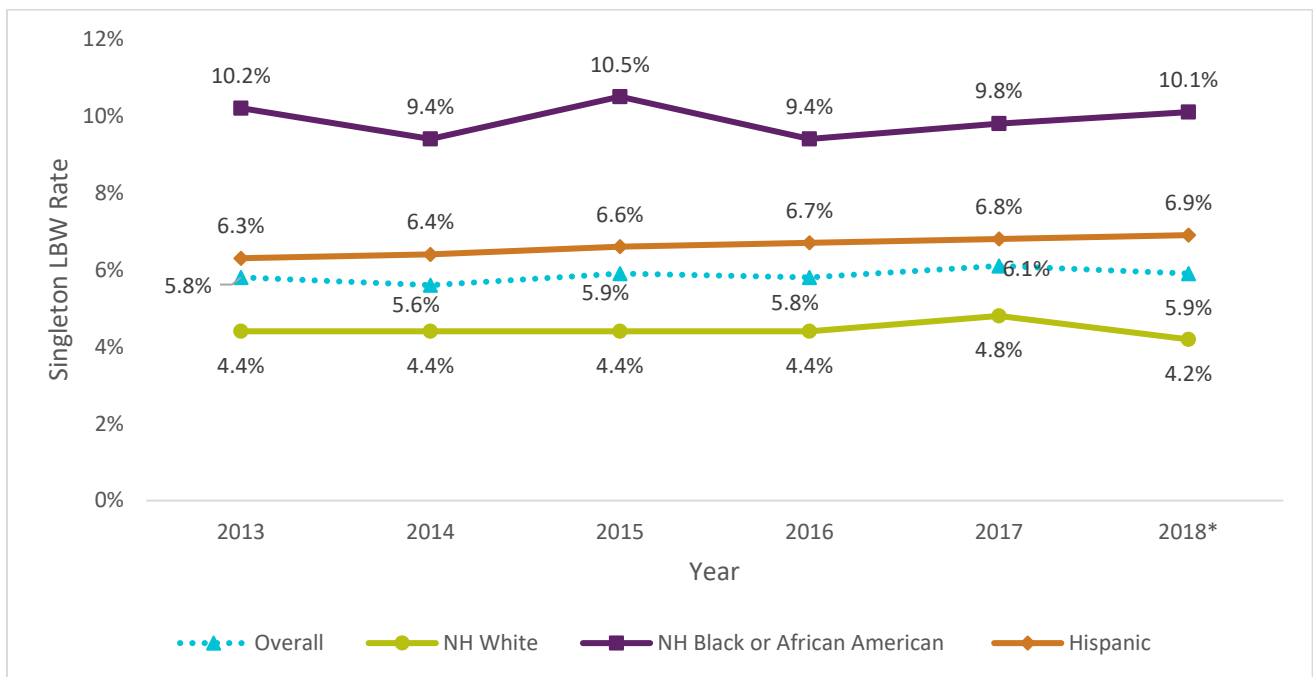
Figure 39: Trends in Low Birthweight (All Pluralities) by Race/Ethnicity, Connecticut, 2000-2018



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2000-2017 and provisional 2018 data

Related to the racial/ethnic disparities noted for prepregnancy and perinatal health, infant health outcomes also vary by race/ethnicity. Among singleton births in Connecticut between 2013-2017, non-Hispanic Black women had the highest rate of LBW infants, followed by Hispanics, and non-Hispanic Whites, with no change in rank over time (Figure 40). For infants with Very Low Birth Weight, 88.2% were delivered in facilities for high risk deliveries and neonates in Connecticut in 2018 (Vital Records).

Figure 40: Singleton Low Birth Weight Rate, by Race/Ethnicity, 2013 – 2018



Data Source: Connecticut Vital Records, 2013 – 2018

Note: *Indicates that data are provisional

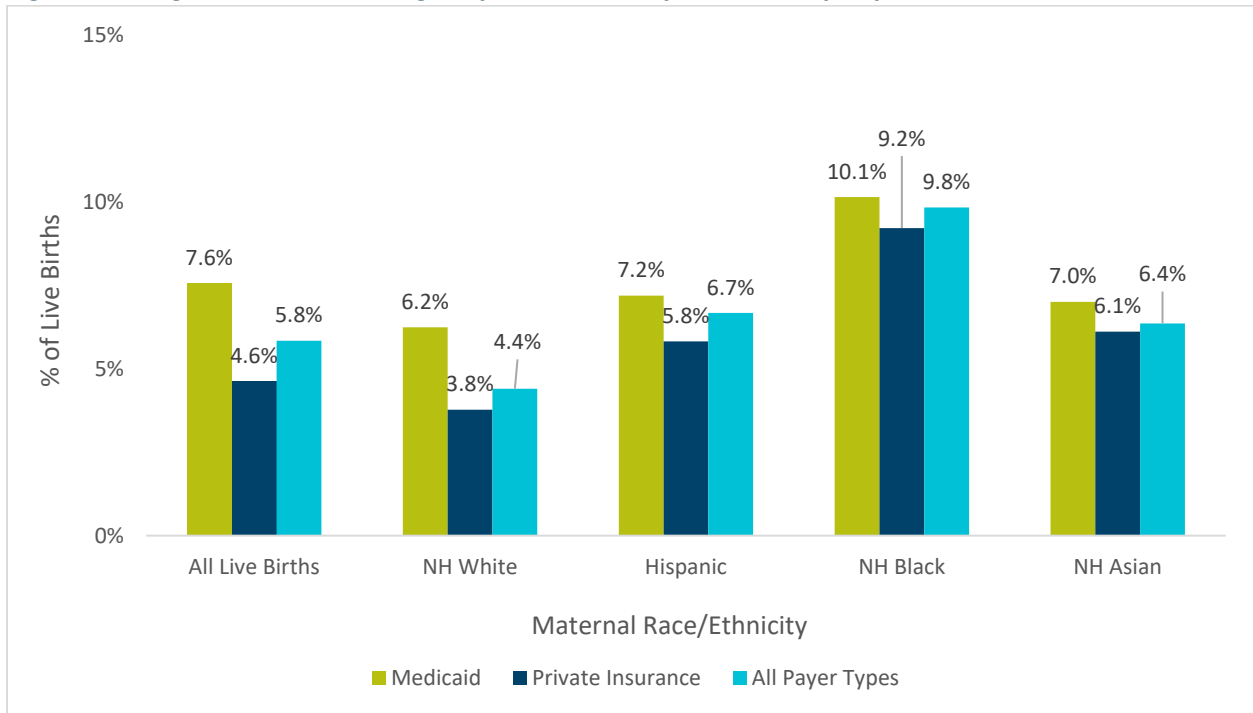
Non-Hispanic White and Hispanic women on Medicaid were more likely to have a low birthweight singleton baby when compared to women with private insurance coverage, but there was no evidence to suggest such a difference for non-Hispanic Black and non-Hispanic Asian women (Figure 41), a pattern similar to those for rates of preterm birth. Trends in singleton low birthweight for women on Medicaid have improved from 10.0% to 7.9% between 2001 and 2014 but have since stabilized at an average of 7.7% in recent years. Rates of singleton low birthweight for women with private insurance remained stable around an average of 4.6% for the period 2001-2018.

Program Spotlight: Maternal and Child Health (MCH) Coalition

- The MCH Coalition has **over 100 members** representing all aspects of maternal and child health.
- The Coalition **examines state data** related to preterm births, low birthweight, infant mortality, and associated racial/ethnic health disparities, and has deep understanding of related **policies and programs** in Connecticut and other states.
- A **State Plan to Improve Birth Outcomes** was developed to reduce perinatal health disparities and improve the health of women and infants across the life course.

For more information, see: <https://www.everywomanct.org/about-the-pibo>

Figure 41: Singleton Low Birthweight by Race/Ethnicity and Delivery Payer, Connecticut, 2014-2018

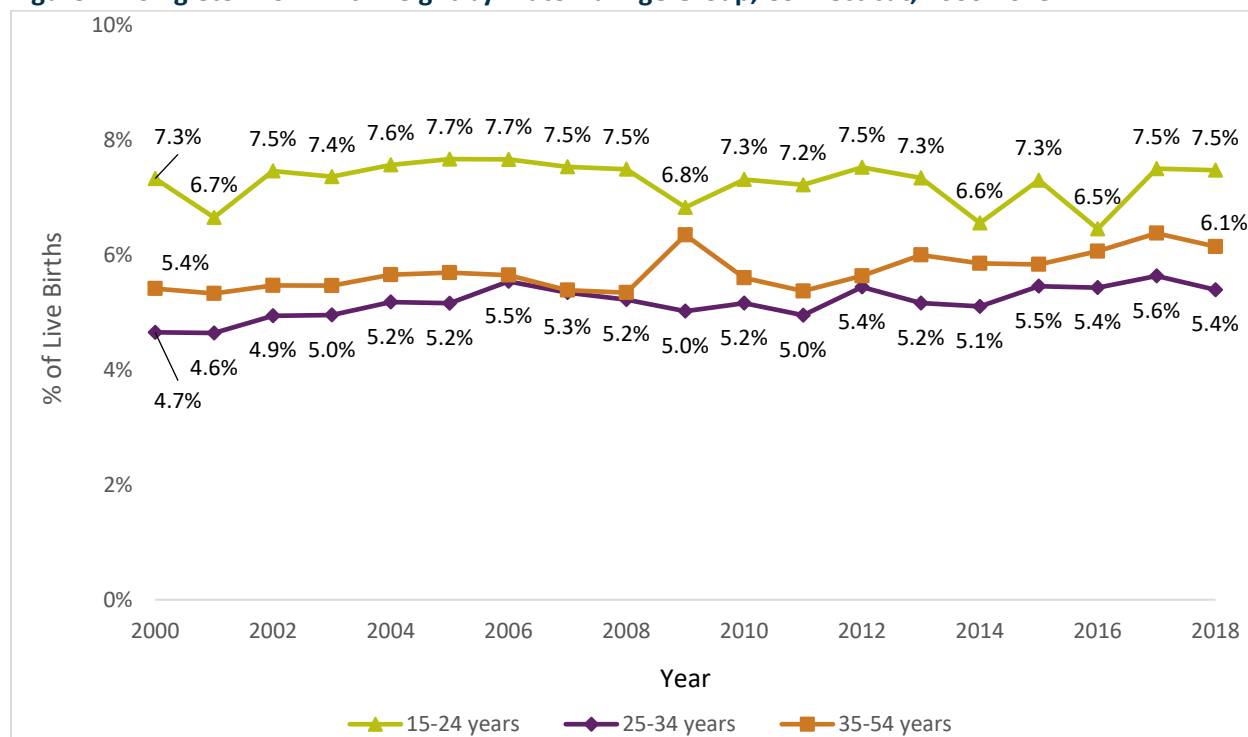


Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry, 2014 - 2018

Much like preterm birth, the likelihood of low birthweight increases toward both the younger and older ends of the maternal age spectrum. Similar to preterm birth rates, women ages 25-34 are the least likely to have a low birthweight baby in Connecticut (Figure 42).

While preterm and low birthweight rates have similar patterns overall and among subgroups of women, differences between the two outcomes exist when comparing maternal age groups over time. Singleton preterm birth rates across maternal age groups (teenagers, 20-34-year-olds, and 35-54-year-olds) have shown steady declines over the period 2000-2018. In contrast, overall rates of singleton low birthweight have remained steady over that same period and have increased among both the lowest risk age group (20-34 year-olds) and the intermediate risk age group (35 years and older, Figure 42). Reasons behind an apparent rise in the rate of singleton low birthweight in mothers outside of the teenage age group warrants further investigation and monitoring in Connecticut.

Figure 42: Singleton Low Birthweight by Maternal Age Group, Connecticut, 2000-2018



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry. 2000-2017 and provisional 2018 data

For poorer women in Connecticut, enrollment in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) at least 12 weeks before delivery has been shown to protect against LBW in infants.⁶¹ Among women who delivered a live birth in Connecticut in 2018, 32.3% participated in WIC during pregnancy (PRAMS, 2018). Increasing access to WIC for near-poor women could be a possible avenue for improving birth outcomes.

Neonatal Abstinence Syndrome

Neonatal Abstinence Syndrome (NAS) refers to a group of conditions caused when a neonate (i.e., a newborn less than 28 days of age) withdraws from certain drugs to which the infant was exposed in the womb before birth.⁶² Most commonly, NAS is caused by maternal chronic opioid exposure. All opioids can cause withdrawal symptoms, including methadone and buprenorphine which can be used for opioid treatment, as well as short-acting agents such as oxycodone, heroin and fentanyl. NAS is characterized by behavioral dysregulation that occurs within 2-3 days of birth. Signs and symptoms include altered sleep, high muscle tone (muscles feel tight or rigid), tremors, irritability, poor feeding, vomiting and diarrhea, sweating, abnormally rapid breathing, fevers and other autonomic nervous system disturbances. Several studies indicate that NAS has long-term effects on children which include neurodevelopmental problems, learning disabilities and behavioral problems.^{63 64}

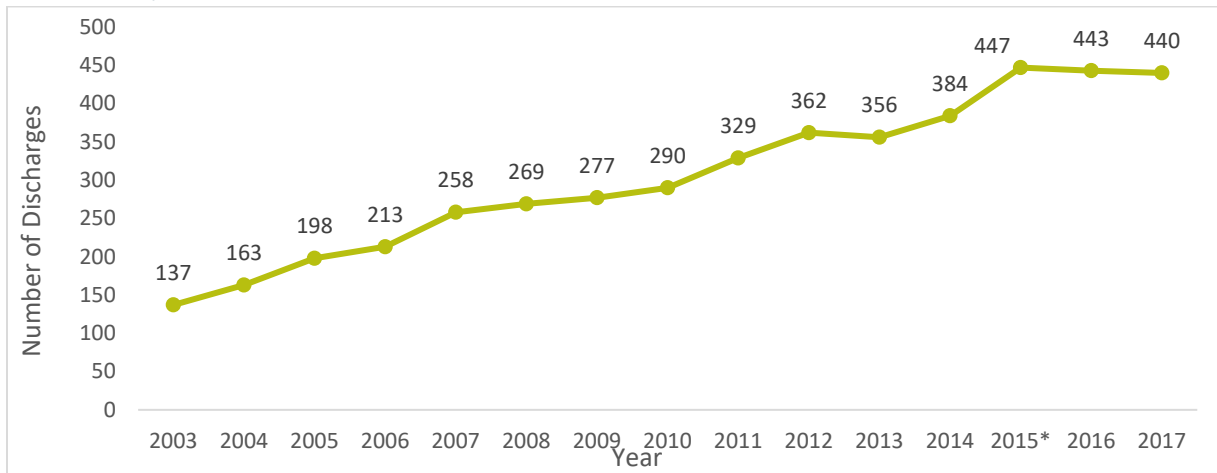
Nationally, one baby is born with signs of NAS every 15 minutes.⁶⁵ From 2004 to 2014, the incidence of NAS in the United States increased 433%, from 1.5 to 8.0 per 1,000 hospital births.

In Connecticut, the number of hospital discharges for infants born with NAS in 2017 was three times higher than the number in 2003 (Figure 43). This increase in infants born with NAS follows the increasing

prevalence of opioid use in pregnancy in Connecticut. However, increased counts may also reflect an increase in testing for NAS, or an increase in women receiving methadone treatment.

As a note, the number of discharges before 2015 cannot be directly compared to discharges from 2016 onwards due to a change in data classification that started in October 2015. While we do not have multiple years of trend data following this data classification transition, we do see a slight decrease in the number of hospital discharges for infants born with NAS from 2016 to 2017. As we gather additional years of data, we will be able to see if this trend continues.

Figure 43: Number of Hospital Discharges for Infants Born with Neonatal Abstinence Syndrome (NAS), Connecticut, 2003 – 2017

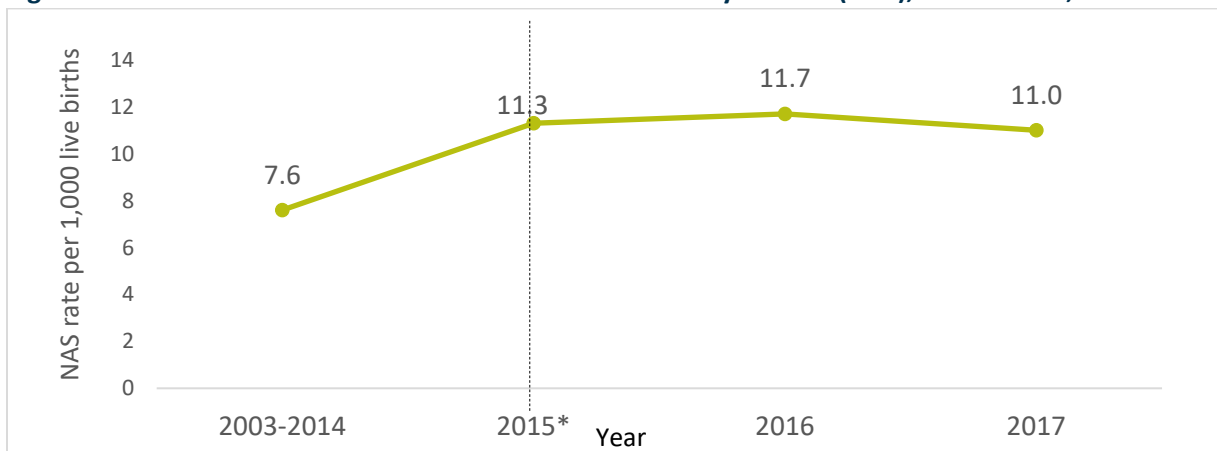


Data Source: Connecticut Inpatient Hospitalization and Emergency Department Visit Dataset, 2003 – 2017

Note: *Indicates a change in diagnostic codes

The rate of Connecticut infants born with NAS also increased between 2003 and 2017, though again rates before 2015 cannot be directly compared to rates after 2016 due to the data classification changes (Figure 44).

Figure 44: Rate of Infants Born with Neonatal Abstinence Syndrome (NAS), Connecticut, 2003-2017



*The vertical line is the break line where the diagnosis codes were converted from ICD9- to ICD10-CM (as of Oct. 1, 2015).

Data Source: Connecticut Inpatient Hospitalization and Emergency Department Visit Dataset, 2003-2017

Approach Spotlight: Collaborating to Address Neonatal Abstinence Syndrome

Understanding prenatal substance exposure and its effects and educating communities about teratogenic (i.e. causing malformation of an embryo) effects of drugs during pregnancy will help reduce NAS incidence in Connecticut. Populations of focus for these efforts include: young women, medical providers, social services and treatment providers, schools, higher education programs, child welfare staff, and foster/adoptive parents. A universal protocol that defines screening procedures for maternal substance misuse and substance use disorder needs to be developed and executed to implement comprehensive treatment for infants at risk or showing withdrawal symptoms.

To achieve this aim, collaborative partnerships have formed in Connecticut between non-governmental professional organizations, multiple state agencies, and public/private professional organizations. Partners include:

- Connecticut Department of Public Health (DPH),
- Connecticut Special Supplemental Nutrition Program for Women, Infants, and Children (WIC),
- Connecticut Perinatal Quality Collaborative (CPQC),
- Neonatal Abstinence Syndrome: Comprehensive Education and Needs Training (NASCENT) Project,
- Connecticut Substance Exposed Infants-Fetal Alcohol Syndrome Disorder (SEI-FASD) Collaborative,
- The Connecticut Alcohol and Drug Policy Council,
- The Women's Services Practice Improvement Collaborative (WSPIC).

Connecticut Department of Public Health efforts specifically include:

- Participating in the statewide NAS collaborative: *Connecticut Perinatal Quality Collaborative*;
- Analyzing hospital discharge datasets to identify the number of infants with NAS and sharing data with partners proactively;
- Tracking Fetal Alcohol Syndrome, started in 2019. (HAS THIS STARTED?)
- Strengthening bio-surveillance by conducting ongoing surveillance of the opioid crisis statewide.
- Adding substance use and withdrawal symptom fields to the Connecticut Newborn Screening System and prompting a new set of questions when NAS is present.
- Improving near real-time surveillance of the incidence of NAS statewide in order to inform prevention, treatment, and recovery services and resources across the state.
- The Connecticut Pregnancy Risk Assessment Monitoring (PRAMS) implemented CDC's opioid supplement beginning in April 2019. Data for the 2019 surveillance year will be available in Fall 2020.
- Contract with University of Connecticut Mother to Baby Program to provide a phone line and email service for pregnant women who are interested in finding out the effects of medications on their fetuses.

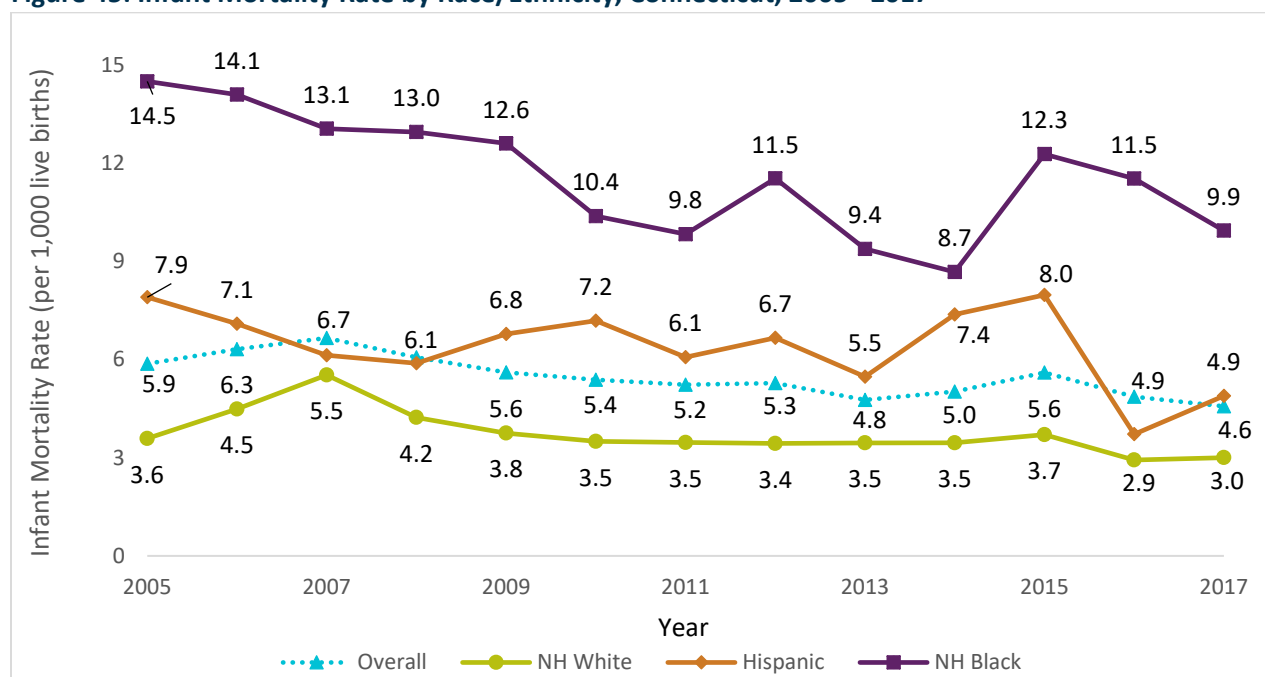
Infant Mortality

Infant mortality rate (IMR), which is the number of infant deaths within the first year of life per 1,000 live births, is an indicator of the overall health and well-being of a population.⁶⁶ The IMR in the United States is higher than that of other developed nations.⁶⁷ The leading cause of infant mortality in the United States is congenital malformations, followed by short gestation and low birthweight, Sudden Infant Death Syndrome (SIDS), maternal complications, and unintentional injuries.⁶⁸

Over the past decade the overall IMR for the U.S. as a whole has declined to 5.8 deaths per 1,000 live births in 2017 from a 6.8 deaths per 1,000 live births in 2007.^{69,66} Declines in the national IMR have been attributed to declining counts of infants born at younger gestational ages and improved survival of infants regardless of gestational age at birth.⁷⁰ Connecticut's infant mortality rate was 4.6 deaths per 1,000 live births in 2017 down from 5.9 deaths per 1,000 live births in 2005 – a decrease of about 2.4% each year (Figure 45). Connecticut's IMR has consistently remained well below both the US rate and the Healthy People 2020 target of 6 deaths per 1,000 live births since 2010.⁷¹

Reductions in the state IMR are driven by declines across many subgroups. Declines were observed among all race and ethnicity subgroups (except non-Hispanic Asian infants for which counts were too small for analysis) and were strongest among Connecticut's highest risk group, non-Hispanic Black residents, who showed an average decrease of 2.8% annually (Figure 45). Since 2005, IMRs among infants to mothers with private insurance have declined at about 3.5% each year (Figure 46). IMRs for babies with mothers on Medicaid declined quite markedly from 2005-2011 at about 6.8% annually but then plateaued from 2011 to 2017 (Figure 46). Among infants born to mothers aged 25-39 years, IMRs declined from 2005-2017 while infants born to women under 25 years and over 40 years did not have any long-term trend changes during those years.

Figure 45: Infant Mortality Rate by Race/Ethnicity, Connecticut, 2005 - 2017

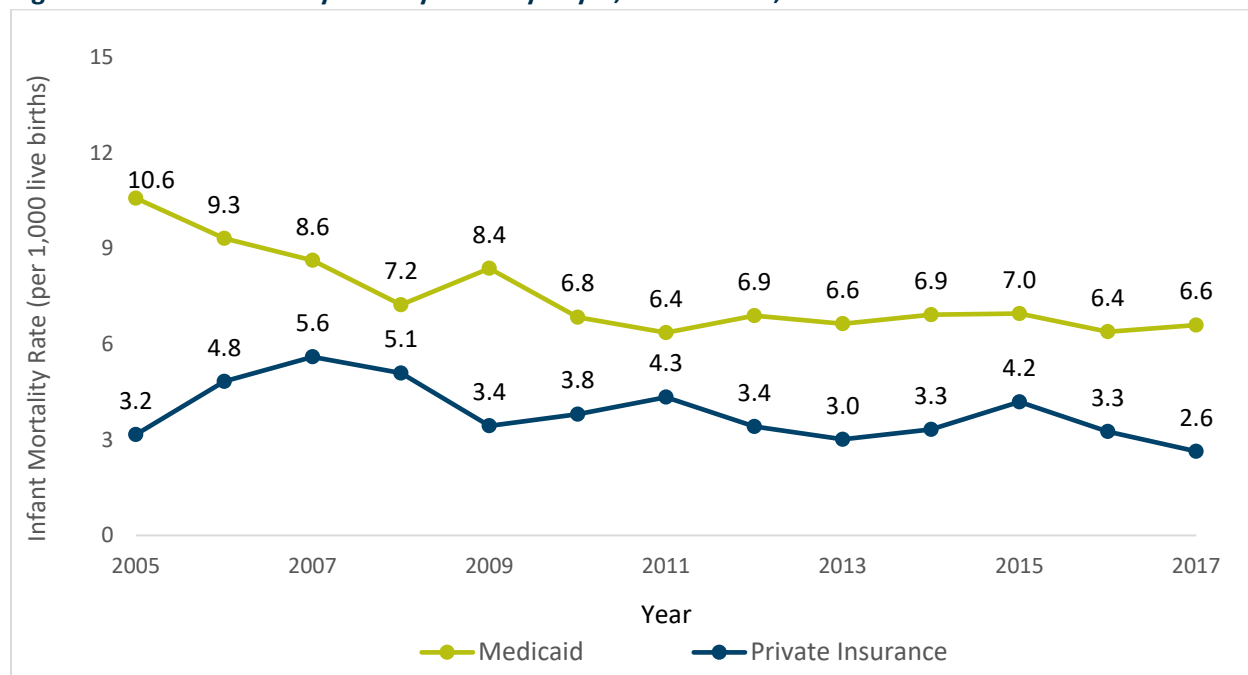


Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Births and Deaths Registries, 2005 - 2017

Progress is being made in reducing Connecticut’s IMR and in reducing the disparity between black and white infants. Connecticut was recently cited as ranking eighth among all states for reducing the black-white infant mortality gap over the period 1999-2013.⁷² Nonetheless, there is still work to be done. Non-Hispanic Black infants were more than three times as likely to die and Hispanic infants were 1.5 times more likely to die than non-Hispanic White infants in Connecticut in 2017 (Figure 45). Infants born to mothers under 25 years of age were almost twice as likely to die as babies born to mothers 35-39 years old (2013-2017 births).

As noted previously, poverty correlates with health insurance coverage, so it is not surprising that women with private insurance consistently have lower IMR than women on Medicaid (Figure 46). However, improvements have been made for women on Medicaid, with an IMR dropping from a high of 10.6 in 2005 to 6.6 in 2017.

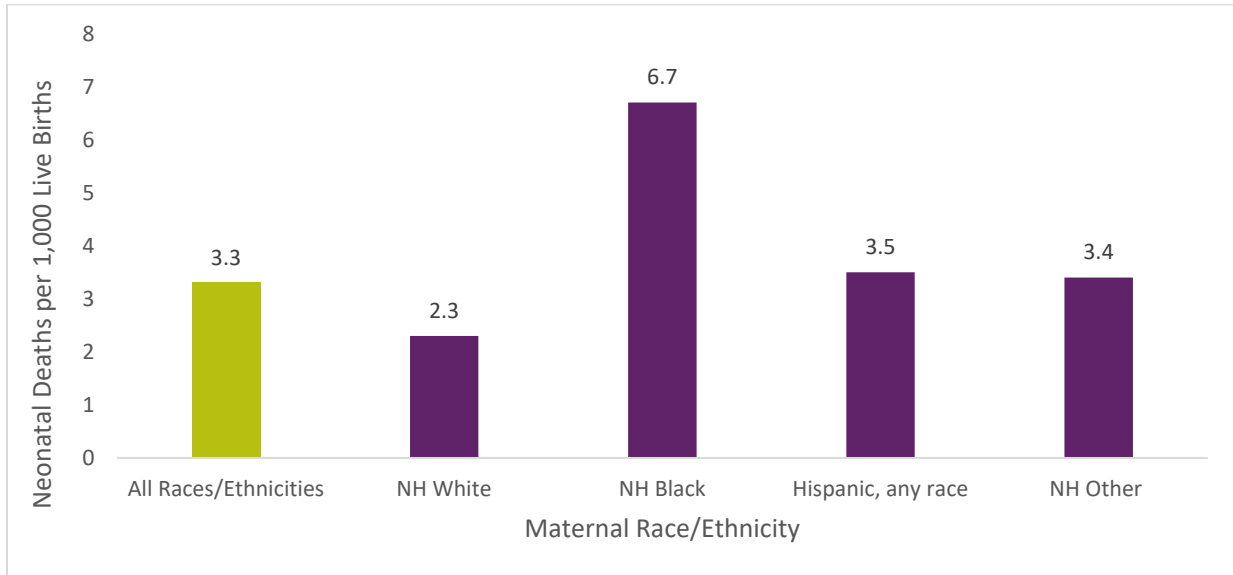
Figure 46: Infant Mortality Rate by Delivery Payer, Connecticut, 2005-2017



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Births and Deaths Registries, 2005 - 2017

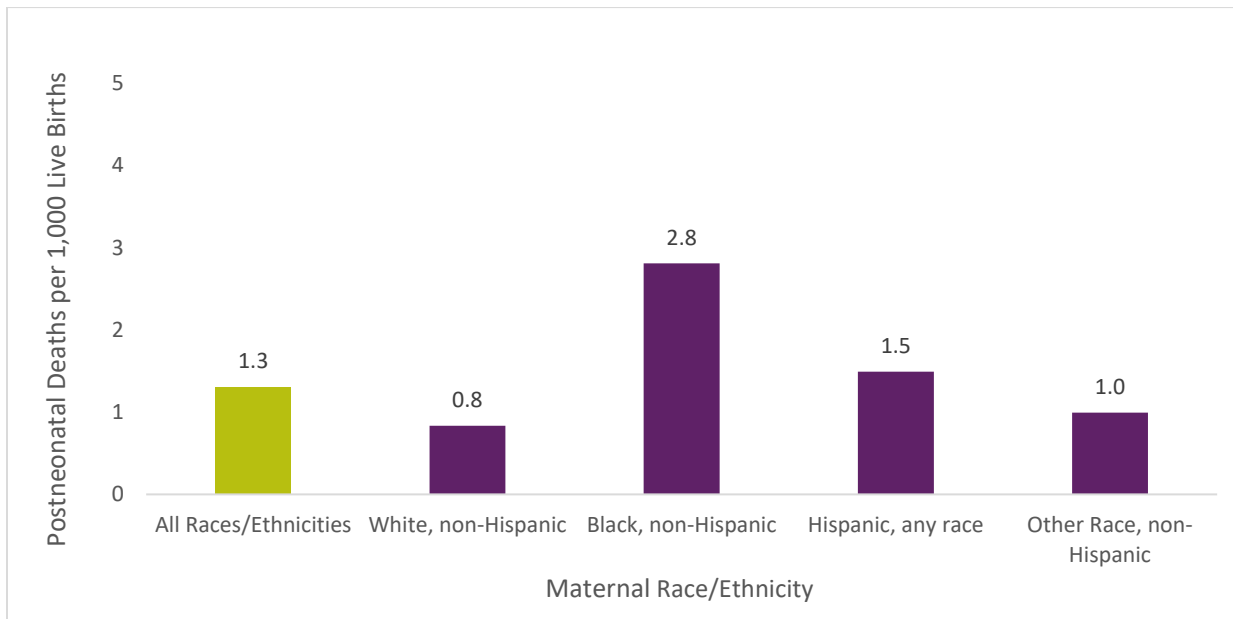
Neonatal (of, relating to, or affecting the newborn during the first month after birth) death rates in Connecticut were strikingly higher for non-Hispanic Blacks than for other racial/ethnic groups in Connecticut in 2016-2018. In 1,000 live births to Black women in Connecticut, almost seven of those newborns will die in the days following. This compares to three to four newborns for Hispanics and women of non-Hispanic Other race, and two to three for non-Hispanic Whites (Figure 47). Similarly, the post-neonatal death rate among non-Hispanic Black women in Connecticut was 3.5 times higher than that for non-Hispanic Whites in 2016-2018, again with rates for Hispanics and women of non-Hispanic Other race falling in between (Figure 48).

Figure 47: Neonatal Death Rate among Connecticut Residents by Race-Ethnicity, Connecticut, 2016-2018



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit. 2016 -2018

Figure 48: Postneonatal Death Rate among Connecticut Residents by Race-Ethnicity, Connecticut, 2016-2018

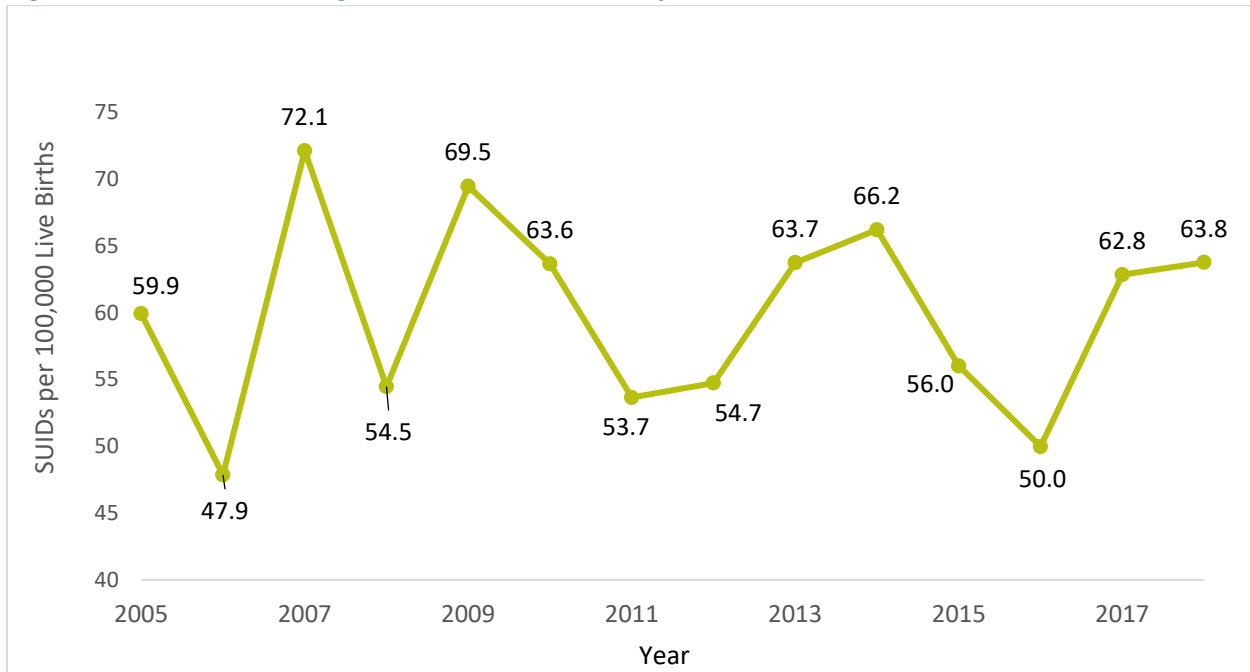


Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit. 2016 -2018

Similarly, there was a range in the rate of Sudden Unexpected Infant Death (SUID) between 2005-2018 in Connecticut, with a low of 50.0 per 100,000 live births in 2016 to a high of 72.1 in 2007 (Figure 49). It should be noted that SUID is so rare in Connecticut that reporting is on a different scale – if the rate were per 1,000 live births, as with other calculations, the equivalent would be less than one infant dying per 1,000 live births in all years assessed. SUID is often associated with an unsafe sleeping environment, leading to suffocation. Connecticut launched the Safe to Sleep Campaign in 1994, and rates of SUID

have improved since then.⁷³ However, additional education and assistance may be needed in some sociodemographic subgroups, as discussed below.

Figure 49: SUID Rate Among Connecticut Residents, by Year, Connecticut, 2005-2018



Data Source: CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit, Birth Registry 2014-2017 and provisional 2018 data

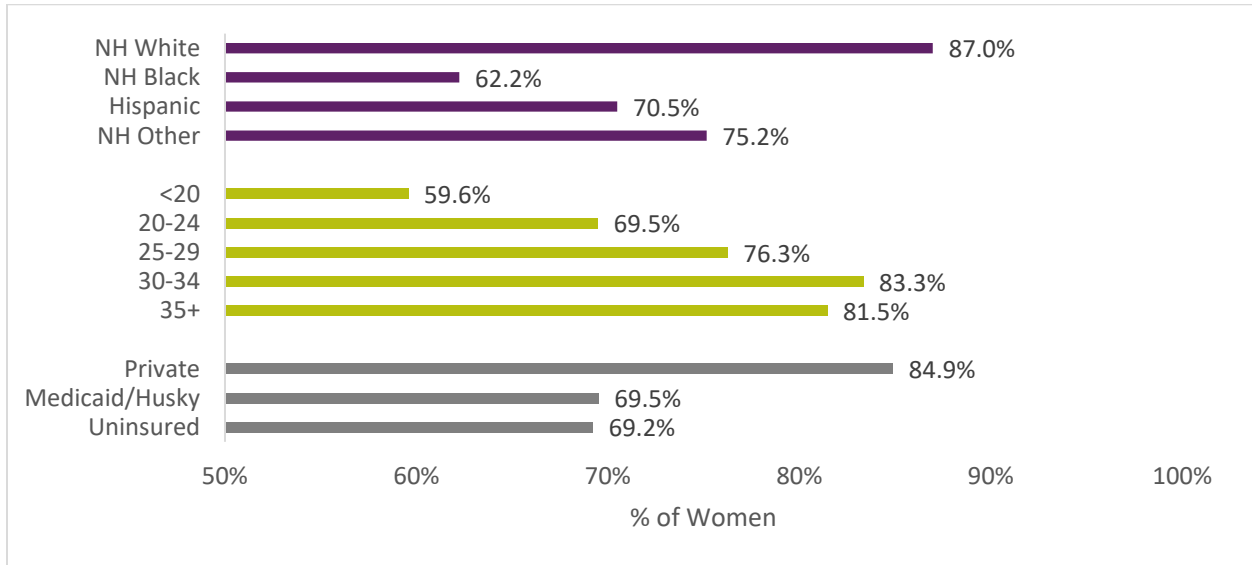
Safe Sleep

As noted above, infant deaths related to sleeping are some of the most common, though large improvements have been made since the first recommendations about back sleeping were made in the 1990s. Current health promotion around safe sleep focuses on back sleeping, as well as having infants sleep in their own cribs, but not their own rooms; and eliminating blankets, pillows, soft toys, and bumper pads from sleep areas.⁷⁴

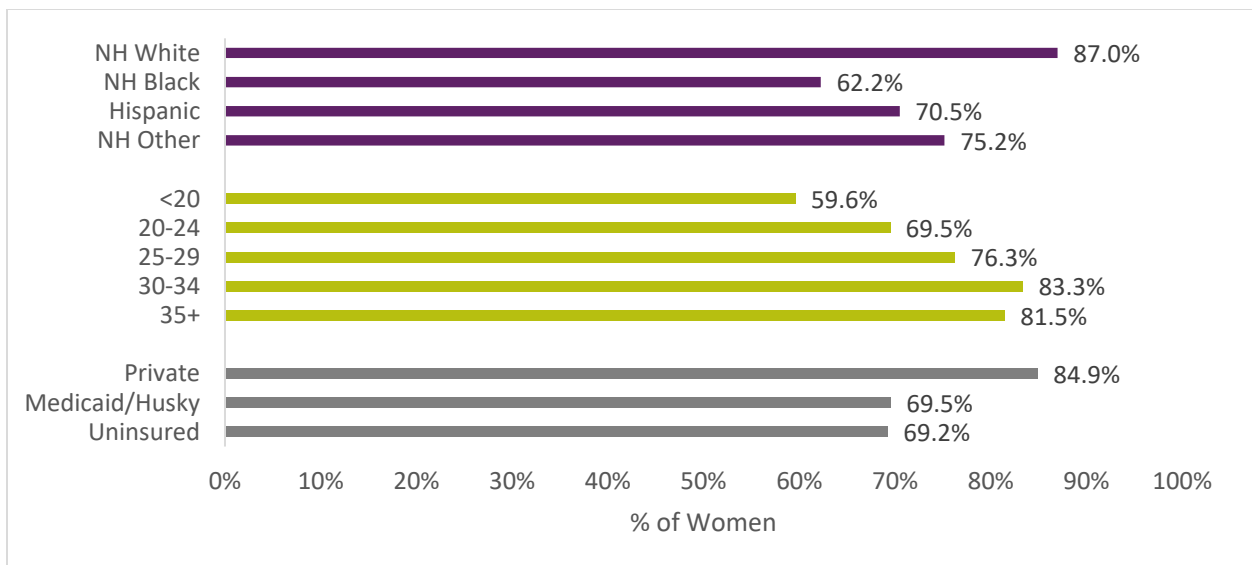
The vast majority of women in Connecticut reported that their health care provider had recommended they place their infants to sleep on their backs during 2016-2018. The proportion was highest among White women (97.0%) and lowest among Hispanic women (91.9%) (PRAMS 2016-2018). The percent of women reporting this did not vary greatly by sociodemographic characteristics. For groups defined by race/ethnicity, age, and insurance status, the only group in which less than 90% of women reported this recommendation was teens (84.9%).

However, fewer women reported actually putting their infants to sleep on their backs only. Only 62.2% of Black women reported solely back sleeping compared to 87.0% of White women (Figure 50). Disparities were also apparent by age and health insurance coverage.

Figure 50: Percent of Women Reporting Putting Infant to Sleep on Their Back Only, by Race/Ethnicity, Age, and Insurance, Connecticut, 2016 – 2018

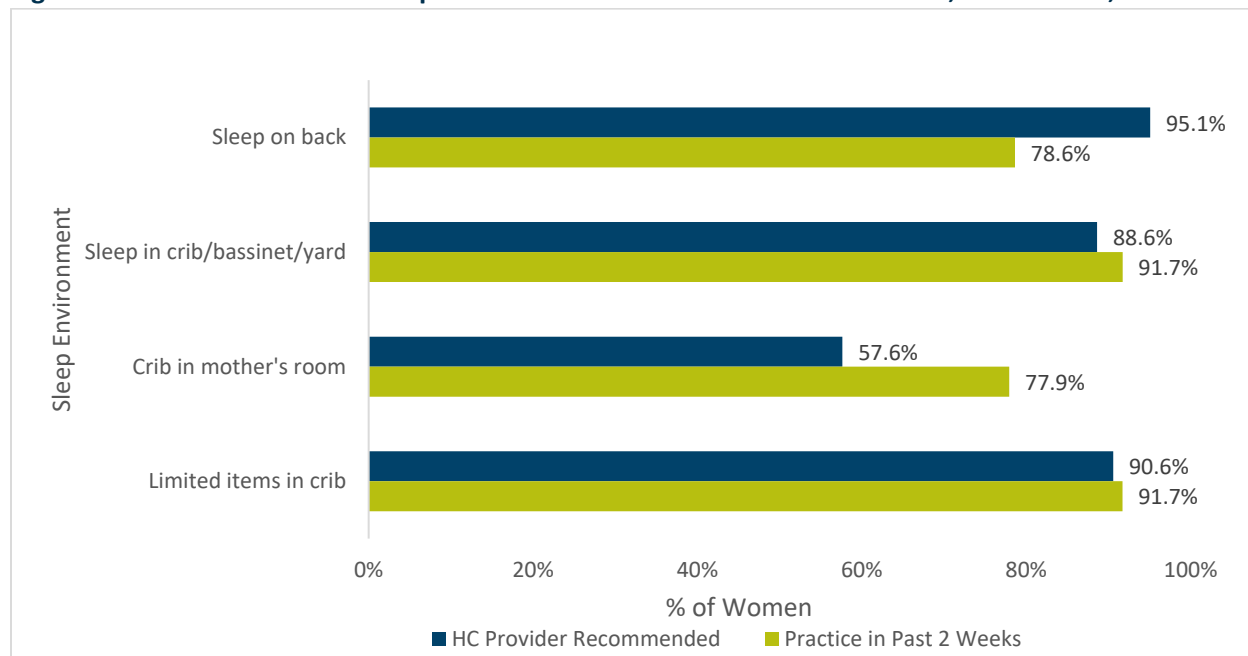


Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018



Overall, 78.3% of women in Connecticut reported that their infant sleeps in her/his own bed always or almost always, though this varied by race/ethnicity (PRAMS, 2016-2018). Over 82% of non-Hispanic White women and 80.4% of Hispanic women reported their infant sleeping alone, but only 69.2% of non-Hispanic Other race women and 64.5% of non-Hispanic Black women. Cultural and familial practices play a large role in caring for babies, particularly in multi-generational households, which are more common among non-White families in the U.S. Public health initiatives to promote safe sleeping practices may need to reach grandmothers and other caregivers with meaningful educational messages. Multiple family members from diverse communities in Connecticut should be part of a conversation on sleep health for infants.

Figure 51: Prevalence of Safe Sleep Provider Recommendations and Practices, Connecticut, 2016-2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018; HC = Healthcare

In Connecticut, 77.9% of women reported their infant slept in the same room as them (PRAMS, 2016-2018). This ranged from 68.0% among non-Hispanic White women to between 85-90% among women of all other race/ethnicities reported (PRAMS, 2016-2018). Most commonly, infants slept in cribs, bassinets, or play yards (91.7%), in car seats or swings (48.3%), and with a blanket (43.4%).

The possibility of room-sharing and other safe sleeping practices is highly correlated with socioeconomic status and the ability to afford spacious housing. *Public health messaging aimed at individual behavior change is therefore important, if these structural factors of economic inequity are not addressed.* Practitioners who want to promote safe sleeping in infants may need to target more upstream factors rather than individual education campaigns.

Breastfeeding

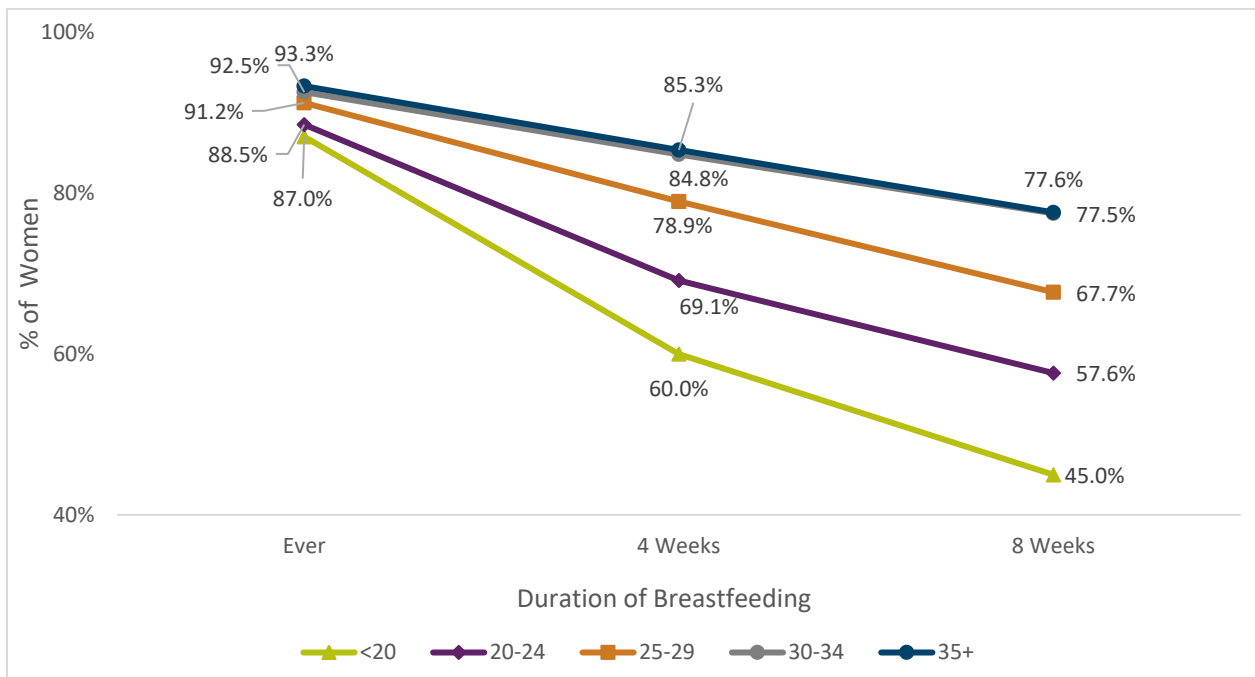
Breastfeeding has been shown to promote the health and development of infants, as well as their immunity to disease. It also confers a number of maternal health benefits, such as a decreased risk of breast and ovarian cancers and other chronic conditions, including cardiovascular disease.⁷⁵

National trends demonstrate that while breastfeeding rates are rising, 87.6% of women who gave birth to a live born infant in 2017 reported initiating breastfeeding,⁷⁶ infants born to households living in poverty, or to parents who are younger, unmarried, receiving WIC benefits, or with low educational attainment are less likely to be breastfed.⁷⁷

Prevalence of breastfeeding also varies by sociodemographic factors, for example, steadily increasing by age (Figure 52), and consistently lower in Black and Hispanic women than in Whites or women of Other race (Figure 53). Most women begin breastfeeding postnatally, but adherence declines after one and two months. Reasons for discontinuing breastfeeding should be assessed to determine if there are factors associated with type of employment, access to mother’s room, length of parental leave, etc. that

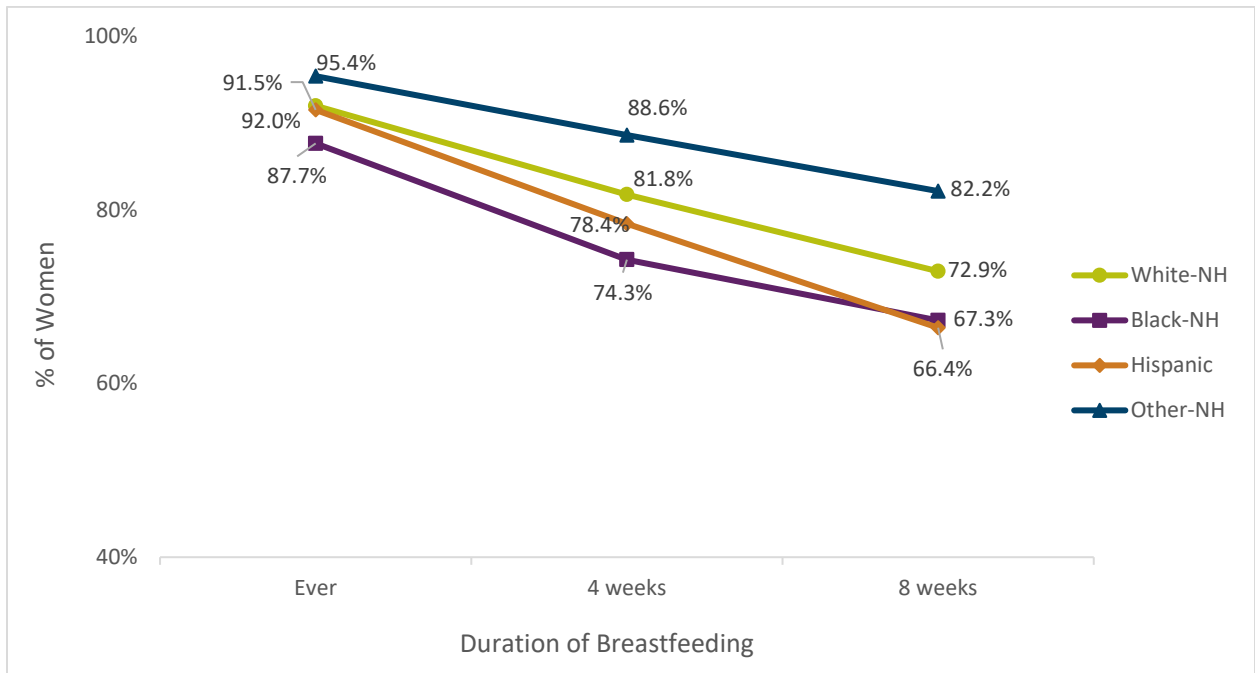
could be intervenable structural barriers that could be targeted to extend length of time postpartum that diverse women continue breastfeeding.

Figure 52: Percent of Women Breastfeeding over Weeks Postpartum, by Age, Connecticut, 2016 – 2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

Figure 53: Percent of Women Breastfeeding over Weeks Postpartum, by Race/Ethnicity, Connecticut, 2016 – 2018



Data Source: Connecticut Pregnancy Risk Assessment Monitoring System, 2016 – 2018

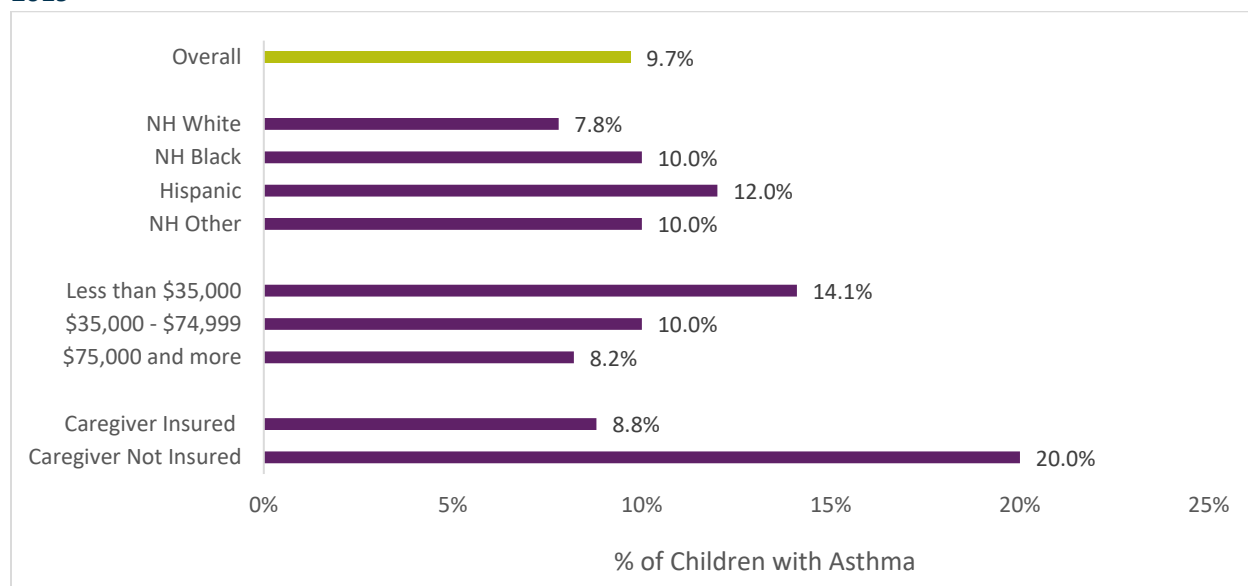
CHILD HEALTH

From birth and throughout adulthood, a person should have regularly scheduled checkups with a primary care provider. For children, these visits are known as well childcare and for adults, these visits are part of preventive care. These regular visits allow for a doctor to observe and assess a person's general health, development, and behavior, administer immunizations, screen for the early detection of diseases, and refer out to other specialists, as needed.

Physical Health

Overall, 92.2% of children aged 0-17 Years old were reported to have excellent or very good health in Connecticut in 2017-2018 (Connecticut School Health Survey, 2017-2018). Just under 10% of children in Connecticut currently had asthma in 2019, ranging from a prevalence of 8.2% in families earning >\$75,000 annually to 14.1% in families earning <\$35,000 (Figure 54). Only 8.8% of children whose caregiver was insured had asthma, compared to 20.0% of children of caregivers without insurance. This highlights to role of socioeconomic status in exposure to risk factors for asthma among children in Connecticut.

Figure 54: Proportion of Children (2-17) Ever Diagnosed with Asthma and Still Have It, Connecticut, 2019

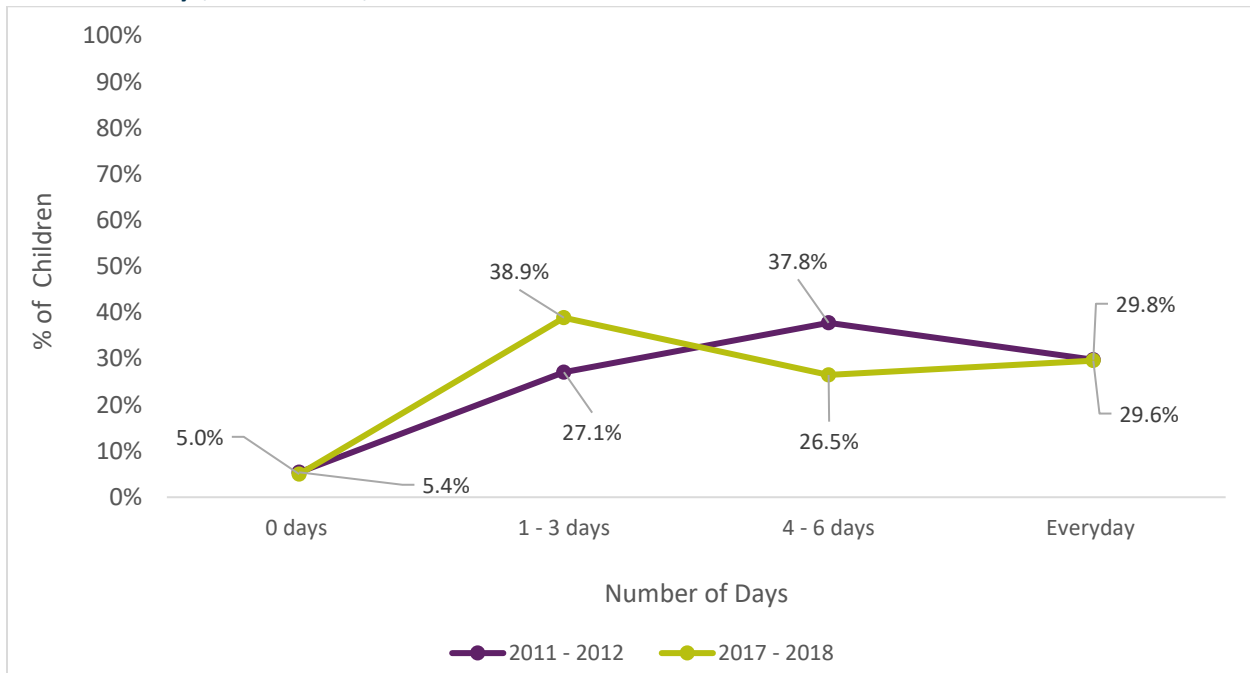


Data Source: National Survey of Children's Health, 2019

The percent of children (0-17 years-old) in Connecticut who live in households where someone smokes declined considerably between 2011/2012 and 2017/2018, from 19.3% to 12.7%. This parallels trends for the whole U.S.

Between 2011/2012 and 2017/2018, almost 30% of children aged 6-11 years-old in Connecticut were physically active at least 60 minutes per day (National Survey of Children's Health). Between these years, the number of children physically active one to three days per week increased from 27.1% to 38.9%, with a corresponding decrease in children active 4-6 days per week (Figure 55).

Figure 55: Percent of Children (6 – 11) Who Are Physically Active at Least 60 Minutes per Day, by Number of Days, Connecticut, 2011 – 2012 and 2017 – 2018



Data Source: National Survey of Children’s Health, 2011 – 2012 and 2017 - 2018

Program Spotlight: Healthy from Day One

Nurturing Healthy Children Through Family Wellness

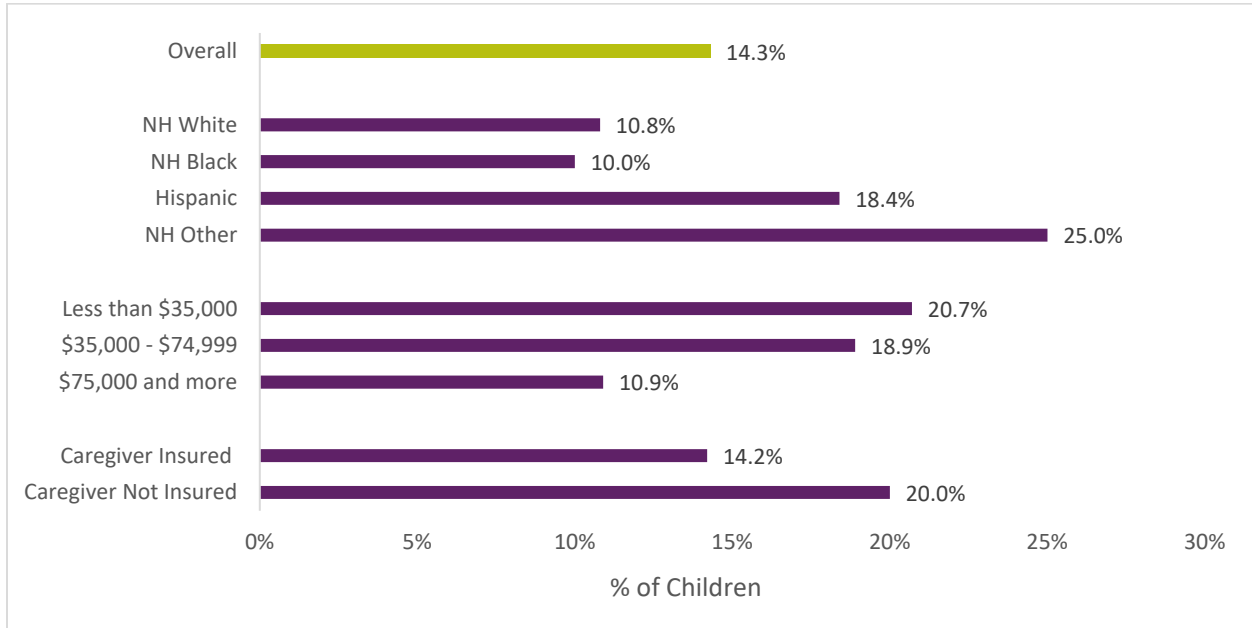
The Healthy from Day One media campaign message was developed by Project Launch members along with community partners it provides information on and promotes child wellness including child development with a focus on families and community relationships and the strengthening of families protective factors. The early months and years are important in child development. Every parent needs support to raise healthy and happy children and give them the best chance of lifelong success. To provide the best environment for children, the family unit needs to be as healthy as possible.

Healthy from Day One materials are available on the Child Development Infoline web site at cdi.211ct.org. Materials include community and national links, videos, books, brochures and posters to address physical health, emotional health, relationships and interconnectedness to the community.

Dental Care

In 2019, 14.3% of children in Connecticut had dental decay in the past year. However, the proportion varies substantially by sociodemographic subgroups. Families with incomes >\$75,000 had the lowest prevalence of children with dental decay (10.9%), while children in families earning <\$35,000 had the highest (20.7%). Similar disparities exist by race and insurance coverage (Figure 56).

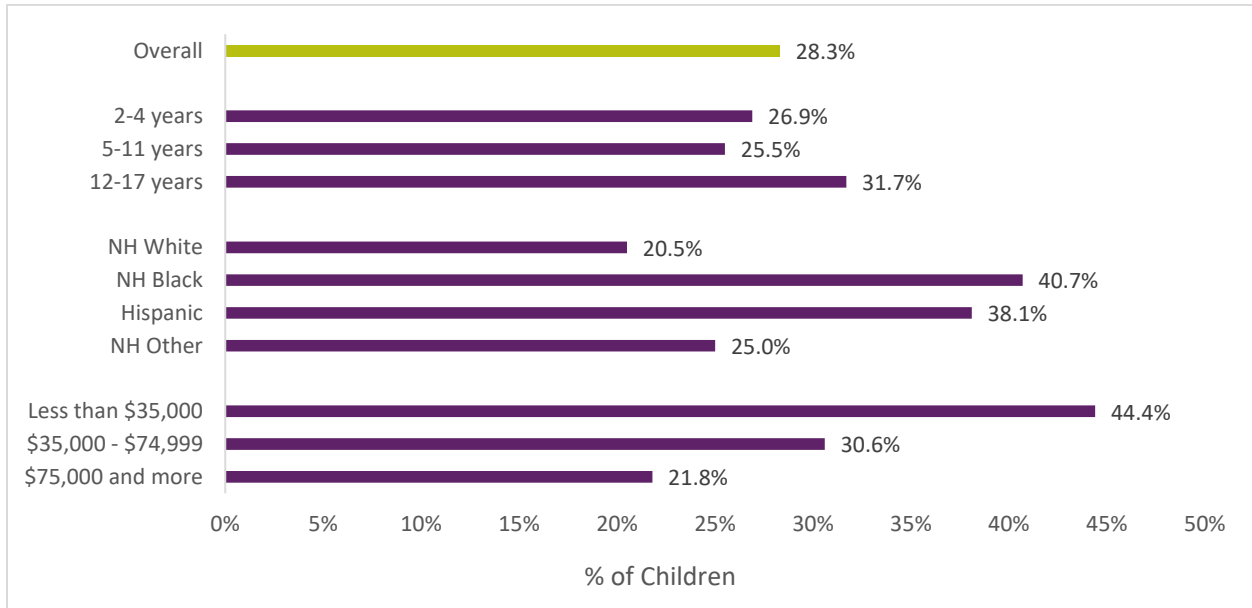
Figure 56: Proportion of Children (2-17) with Dental Decay in the Past 12 Months, Connecticut, 2019



Data Source: National Survey of Children’s Health, 2019

The primary cause of poor dental health in children is a high-sugar diet, and most of this comes from consuming sugary drinks. In 2018, 21.8% of high income children reported drinking soda or sugary drinks at least once daily, compared to 44.4% of children in low income families (Figure 57).

Figure 57: Proportion of Children (Grades 9-12) Who Drank Soda or Sugary Drinks At Least Once Daily, Connecticut, 2019



Data Source: National Survey of Children’s Health, 2011 – 2012 and 2017 – 2018

Behavioral Health

Mental health is an essential part of overall health and well-being. Mental health disorders are usually associated with significant distress or disability in social, occupational, or other important activities. A few mental health disorders manifest in behaviors that violate the rights of others or bring the individual into significant conflict with societal norms or authority figures.⁷⁸

Services Spotlight: Child Behavioral Health Counseling

The Centers for Disease Control and Prevention report that one in five American children ages 3 through 17 (about 15 million) have a diagnosable mental, emotional, or behavioral disorder in a given year. Only 20% of these children are ever diagnosed and receive treatment; 80%, or about 12 million, are not receiving treatment.

The prevalence of mental/behavioral health conditions has been increasing among children and has been found to vary by geographic and sociodemographic factors. Further, the receipt of treatment is also generally dependent on sociodemographic and health-related factors. Adequate insurance and access to a patient-centered medical home may improve mental health treatment.

In Connecticut, a slightly higher proportion of NH White children with a mental/behavioral condition received treatment or counseling, compared to Hispanic children with a mental/behavioral condition (71% and 66%, respectively). Conversely, 29% of NH White children and 34% of Hispanic children with a mental/behavioral condition did not receive treatment or counseling.

Sources:

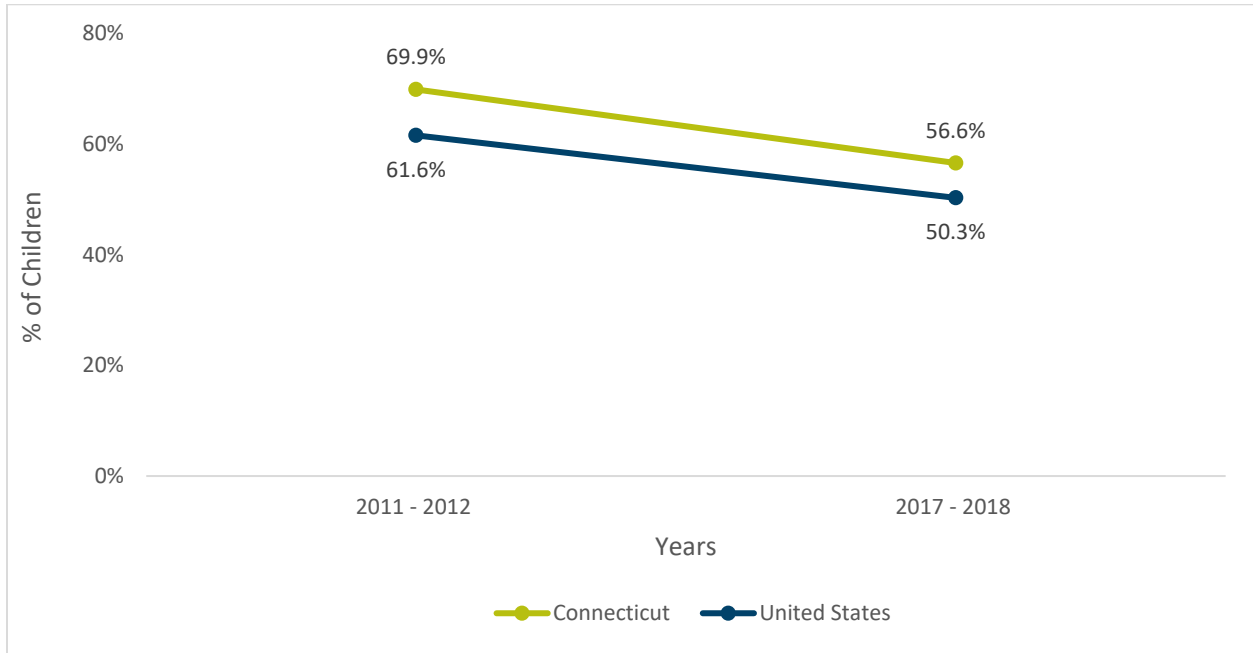
<https://www.cdc.gov/childrensmentalhealth/data.html>

<https://www.ncbi.nlm.nih.gov/pubmed/22218014>

2016-2017 National Survey of Children's Health

The proportion of children with a mental/behavioral health condition who received treatment or counseling declined in both Connecticut and the U.S. between 2011-2012 and 2017-2018. In Connecticut, the proportion declined from 69.9% to 56.6% (Figure 58).

Figure 58: Percent of Children (3 – 17) with a Mental/Behavioral Condition Who Receive Treatment or Counseling, Connecticut and United States, 2011 – 2012 and 2017 – 2018



Data Source: National Survey of Children’s Health, 2011 – 2012 and 2017 – 2018

Attention-Deficit Hyperactivity (ADHD) and Disruptive Behavior Disorders are some of the most common mental and behavioral conditions in childhood and can begin early. Symptoms of ADHD and Disruptive Behavior Disorders range from inattentiveness and disorganization to anti-social behavior and substance use disorder that can disrupt school and work.⁷⁹ Risk factors for ADHD include a woman’s use of alcohol, tobacco or other drugs during pregnancy; early exposure to environmental toxins during pregnancy; or a child’s exposure to toxins like lead at a young age. These risk factors highlight the fact that health develops over the entire life course, so improving women’s health during pregnancy can have long-term impacts on well-being well into childhood and beyond.

Developmental Screening

In the United States, about one in six children ages 3 to 17 years have one or more developmental or behavioral disabilities, such as autism, a learning disability, or attention-deficit/hyperactivity disorder.⁸⁰ In addition, many children have delays in language or other areas that can affect how well they do in school. However, many children with developmental disabilities are not identified until they are in school, by which time significant delays might have occurred and opportunities for treatment might have been missed.

Program Spotlight: Developmental Screening Workgroup

Developmental screening is a priority area for the Connecticut DPH State Health Improvement Plan Advisory Council and the Maternal, Infant, and Child Health Workgroup.

The Developmental Screening Workgroup Action Agenda contains three strategies:

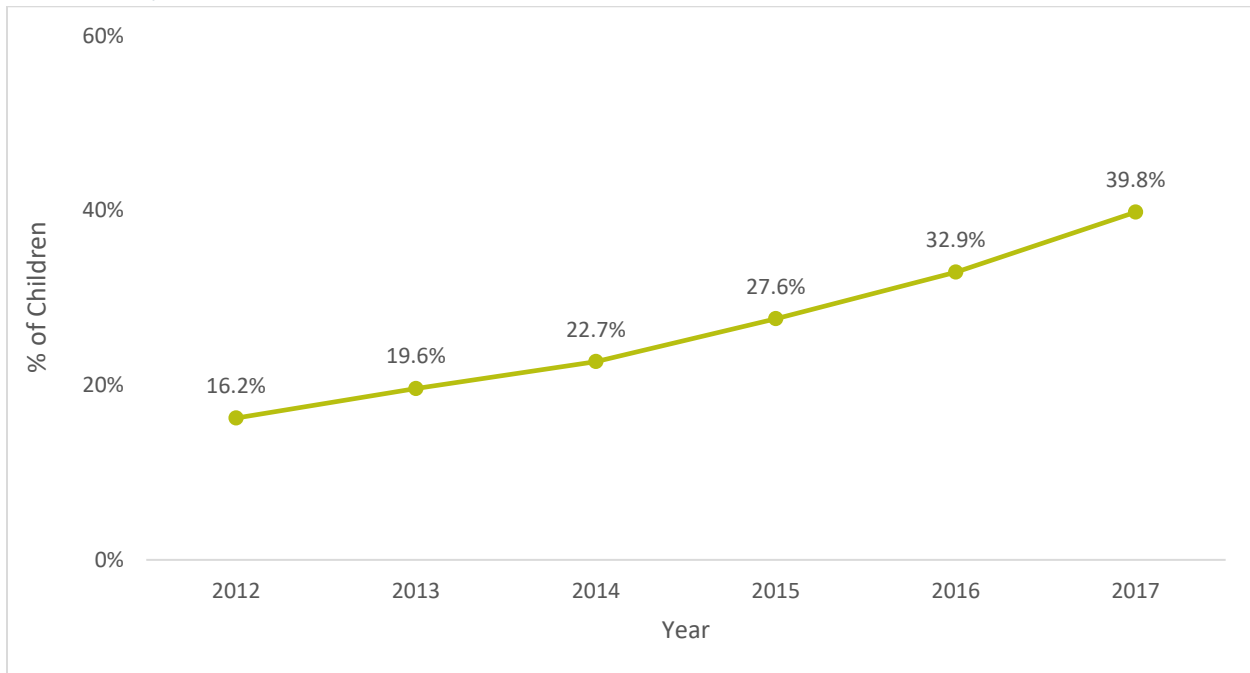
- **Project Launch media campaign.** The education and awareness campaign, Healthy from Day One, educates families and communities on the importance of developmental screening, while focusing on strengthening families and relationships and building the five Strengthening Families Protective Factors (i.e., parental resilience, social connections, knowledge of parenting and child development, concrete support in times of need, and social and emotional competence of children).
- **Training community and healthcare providers.** Trainings will focus on improving screening rates and coordinating referrals and linkages to services within the state.
- **Cross-system planning and coordination.** Members of the Workgroup will join state-level groups to support communication among and coordination of statewide efforts around developmental screening and the promotion of healthy development including Project Launch's State Level Young Child Wellness Council, the DPH State Level Care Coordination Collaborative, and the Help Me Grow Advisory Council.

Source: Center for the Study of Social Policy. Strengthening Families: Increasing positive outcomes for children and families. <https://cssp.org/our-work/project/strengthening-families/>

The American Academy of Pediatrics recommends that all children be screened for developmental delays during their regular well-check visits at 9, 18, and 24 or 30 months. To do this, healthcare providers ask parents to complete a screening tool or instrument that covers a child's development, communication, or social behaviors.

Between 2012 and 2017, the proportion of children under three years-old who received a developmental screening rose consistently from 16.2% to 39.8% (Figure 59). However, this is still less than half of the population, indicating that improvement is still needed, but appears promising, given the current trend lines.

Figure 59: Percentage of Children Less than 3 Years Old Who Received a Developmental Screening, Connecticut, 2012-2017



Data Source: Connecticut Department of Social Services Claims Data, 2012 - 2017

Common barriers to adopting new screening practices in pediatrics include a lack of time, long waits for children to be seen by mental health providers, and a lack of available mental health providers to refer children. Pediatricians have also raised concerns about the increasing number of mandates outlined in practice guidelines. Pediatricians and Family Care Practitioners have difficulty balancing the number of screenings and educational messages with the amount of time they have to serve patients in their practice. Primary Care Providers (PCPs) face ever-shrinking time for health maintenance visits and must balance time versus reimbursement pressures. Pediatricians also report a lack of confidence in their training and ability to successfully manage children’s behavioral and emotional problems. This is seen in the ability to refer and link children to the diagnostic provider and for some, direct service providers.⁸¹

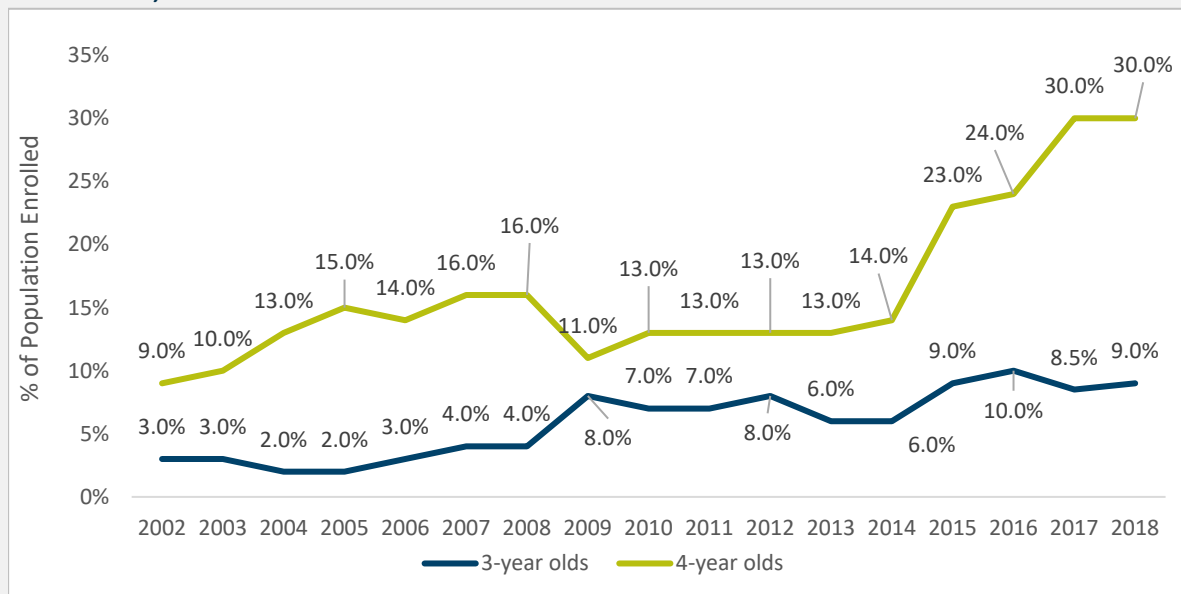
Early Education

Experiences and education within the first five years of life can shape one’s health trajectory across the lifespan. Early education and care programs can be protective against social and economic challenges and narrow inequitable gaps in health outcomes.⁸² Participating in these programs are also associated with higher educational attainment, better eating habits, increased use of preventive healthcare services, and lower rates of child injuries, child abuse/maltreatment, teen pregnancy, depression, use of tobacco or other drugs, and arrests and incarceration.⁸² The rate of Pre-K enrollment for 4-year old children in state-funded preschool programs in Connecticut has made sizable gains over the past 5 years; however, enrollment among 3-year old children has remained fairly stable over the past decade and thus far peaked at 10% in 2016.

Connecticut Ranks Ninth in the US for Early Education Spending per Child¹

- Connecticut has three state-funded pre-kindergarten programs: School Readiness Program, Child Day Care Contracts, and Smart Start¹
- In 2018, 14,585 children were enrolled in state pre-kindergarten programs¹
- On average, Connecticut spent \$7,612 per child enrolled; this reflects a 30% drop in average per child expenditure since 2011¹
- According to estimates from the 2013-2014 school year (the most recent year sociodemographic data are available), children enrolled in Connecticut early childhood and pre-kindergarten programs were:²
 - 50% NH White, 26% Hispanic/Latino, 15% NH Black or African American, and 5% NH Asian
 - 23% students with disabilities served under the Individuals with Disabilities Education Act
 - 2% English Language Learners (those speak English less than “very well”)

Figure 60: Percentage of Children Enrolled in Early Childhood and Pre-K Programs by Age Group, Connecticut, 2002-2018



Data Source: National Institute for Early Education Research. 2013, 2016 and 2018 State of Preschool Yearbooks. Retrieved from <http://nieer.org/state-preschool-yearbooks>.

1. Friedman-Krauss, A.H., et al. (2019). *The State of Preschool 2018: State Preschool Yearbook*. National Institute for Early Education Research. Retrieved from http://nieer.org/wp-content/uploads/2019/05/YB2018_Executive-SummaryR.pdf.
2. Civil Rights Data Collection, 2013-2014 State and National Estimates: Total Enrollment in Early Childhood and Pre-K.

Adverse Childhood Experiences

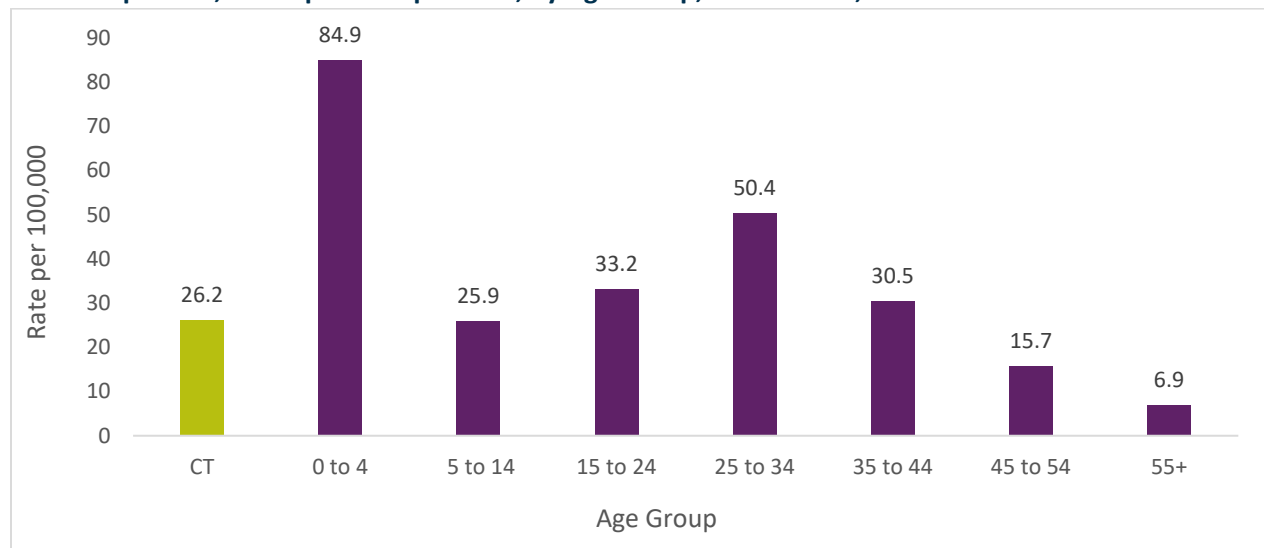
Adverse Childhood Experiences (ACEs) are stressful or traumatic events that occur during childhood. These include experiencing violence, abuse, or neglect, witnessing violence in the home or community, having a family member attempt or die by suicide, substance misuse, mental health problems, instability due to parental separation or household members being in jail or prison. These events can affect people of all backgrounds and are strongly related to the development and prevalence of a wide range of health problems throughout a person's lifespan.⁸³ There is a strong association with ACEs and other risk factors for diseases, disability, and early mortality.

The more adverse events that a child experiences, the greater his or her risk for chronic health and mental health issues. In 2017, an estimated 13.1% of adults in Connecticut experienced four or more ACEs with a higher percentage of 4+ ACEs in adults on Medicaid (26%), non-insured (19%), of Hispanic ethnicity (18.3%), or have annual income of less than \$35,000 (16.9%).⁸⁴ Additionally, mental illness and trauma are linked to violent or self-harm behaviors, including suicide.

In the United States, the total lifetime economic burden associated with child abuse and neglect and other ACEs was approximately \$124 billion in 2008.⁸⁵ This economic burden rivals the cost of other high-profile public health problems, such as stroke and type 2 diabetes. Children in low-income households or those belonging to racial and ethnic minority groups have a disproportionately greater exposure to ACEs compared to non-Hispanic White children or children from more affluent households; also, these children experience significant disparities in both early brain development and healthcare access because of increased exposure.⁸⁶

Over the last decade, all age groups experienced an increase in rates per 100,000 population of intimate partner or family violence-related emergency department (ED) visits and hospitalizations, with rates highest among children ages 0 to 4 from 2016-2017 (Figure 61). Family violence-related injuries in children under 5 years of age were three times higher than the state average.⁸⁷

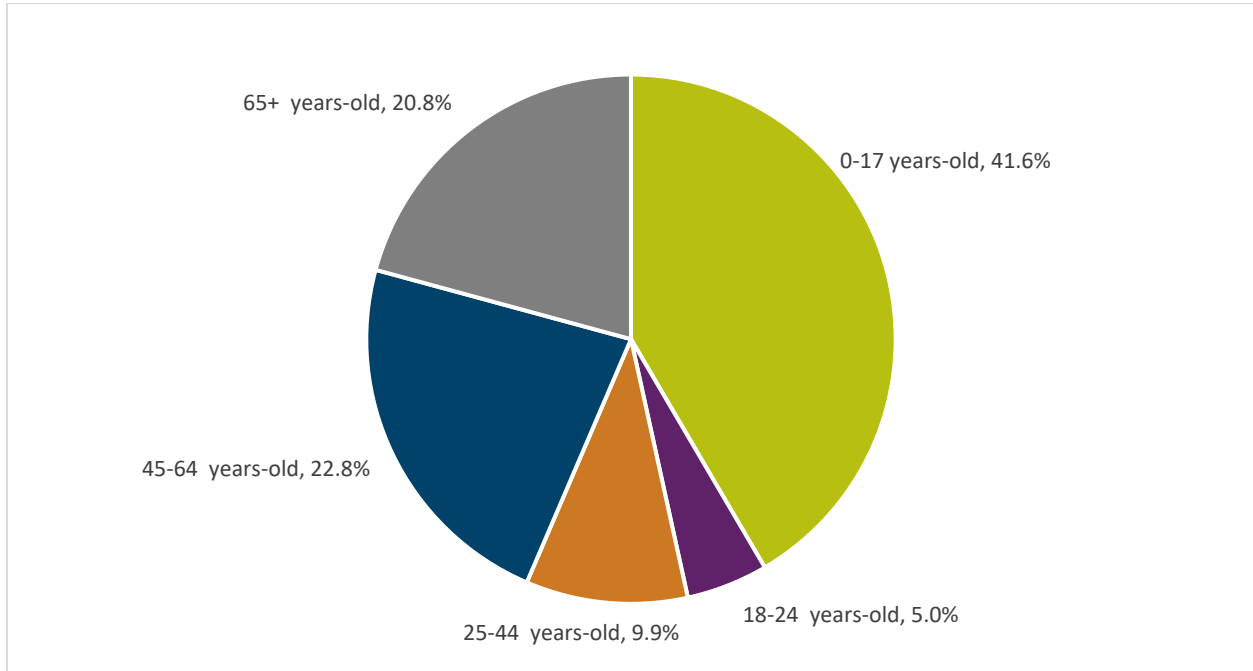
Figure 61: Rate of People Who Were Seen at the Emergency Department as a Result of Family Violence per 100,000 Population per Year, by Age Group, Connecticut, 2016 and 2017 Combined



Data Source: Connecticut Inpatient Hospitalization and Emergency Department Visit Dataset, 2016-2017

Over two out of five deaths due to family violence occurred among Connecticut’s youngest residents between 0-17 years of age (Figure 62). Non-Hispanic White residents comprised the largest proportion of deaths related to family violence, followed by non-Hispanic Black and Hispanic residents, respectively. Based on population rates, non-Hispanic Black residents had proportionately higher rates than other race and ethnicity groups.

Figure 62: Percent of Deaths Due to Family Violence, by Age Group, Connecticut, 2015-2018



Data Source: Connecticut Violent Death Reporting System, 2015 – 2018.

Research has demonstrated that ACEs are common, they cluster (meaning many people experience more than one ACE and therefore cumulative effects of ACEs must be considered), and ACEs have a dose-response relationship with many health problems (i.e., an individual’s cumulative ACEs score is strongly correlated with health, social, and behavioral problems throughout their lifespan, including substance use disorders).⁸⁸

Connecticut’s State Innovation Models Health Enhancement Community Initiative recognizes the health and economic burden incurred by ACEs; thus, ACEs are listed as one of the main health priorities to improve child well-being among children pre-birth to age eight. In addition, Connecticut’s Health Improvement Coalition’s Mental Health and Substance Abuse team addresses ACEs through trauma screening.

Adverse childhood experiences and trauma are risk factors for depression, anxiety, and post-traumatic stress disorder. To mitigate these risks, the State of Connecticut is engaged in several public health and policy initiatives. These include the following:

- State Health Improvement Plan (SHIP) Action Teams are coordinating upstream interventions to reduce the risk of adverse childhood events and ongoing trauma.
- The state’s Multi-System Trauma-Informed Collaborative to Improve Outcomes for Children Exposed to Violence (MSTIC) aims to develop, coordinate, and enhance policies and practices

among state systems that serve youth to improve outcomes for children exposed to violence and trauma.

- Department of Mental Health and Addiction Services provides both service delivery and statewide education.

Figure 63: Evidence-Based Treatments for ACEs and Other Trauma in Connecticut

<h3>Trauma-Focused Treatments for Children in Connecticut</h3> <p>Evidence-based treatments are proven by research to help children achieve better outcomes, and there are a variety of evidence-based and promising mental health treatments across Connecticut, including:</p>	
<p>TF-CBT (Trauma Focused Cognitive Behavioral Therapy) is a psychoeducation model that helps individuals recognize and manage their stress reactions, develop improved coping mechanisms, restructure self-messaging associated with the trauma, and change negative behaviors. https://tfcbt.musc.edu/</p>	<p>CBITS (Cognitive Behavioral Intervention for Trauma in Schools) is school-based and provided in both group and individual formats. CBITS, like TF-CBT, uses cognitive behavioral techniques to help individuals change the narrative behind the experience, to decrease the negative reinforcement from negative self-talk. https://cbitsprogram.org/</p>
<p>TARGET (Trauma Affect Regulation: Guide for Education and Therapy) is a strengths-based approach intended to help trauma survivors understand how trauma changes the body’s normal responses to stress. Target-Teen is specifically designed to address the adolescent and pre-adolescent population. http://www.ptsdfreedom.org/</p>	<p>MATCH-ADTC (Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, or Conduct Problems) is an evidence-based treatment designed for children ages 6 – 15, which is designed to treat four common behavioral health concerns among children, including anxiety, depression, posttraumatic stress, and behavior problems. https://www.chdi.org/</p>
<p>CFTSI (Child and Family Traumatic Stress Intervention) is a structured flexible evidence-based early intervention model for youth 7 years old and older. An adaptation is also available for children ages 3-6. CFTSI is used within 45 days of a traumatic event or after the recent disclosure of physical or sexual abuse.</p>	

Data Source: Connecticut DPH, Health Statistics and Surveillance, December 2018. For more information, see Child Health and Development Institute of Connecticut, Inc. <https://www.chdi.org/publications/resources/map-trauma-focused-treatments-children/>

Poisoning

Household products, such as cleaning agents, personal care and topical products, and pesticides are among the top ten substances responsible for poisoning exposures annually. Occupational poisonings occur from exposures to a variety of chemicals.

Social determinants that are associated with poisoning injury or death include:

- Poverty – Poor access to heating sources can necessitate the use of unsafe heating options.
- Population density – Cars parked in unventilated areas adjacent to living quarters can increase the likelihood of carbon monoxide exposure.
- Poverty and paucity of childcare – Absent supervision of children leads to ingestion of poisonous substances.
- Illiteracy – Inability to read warnings on household materials.

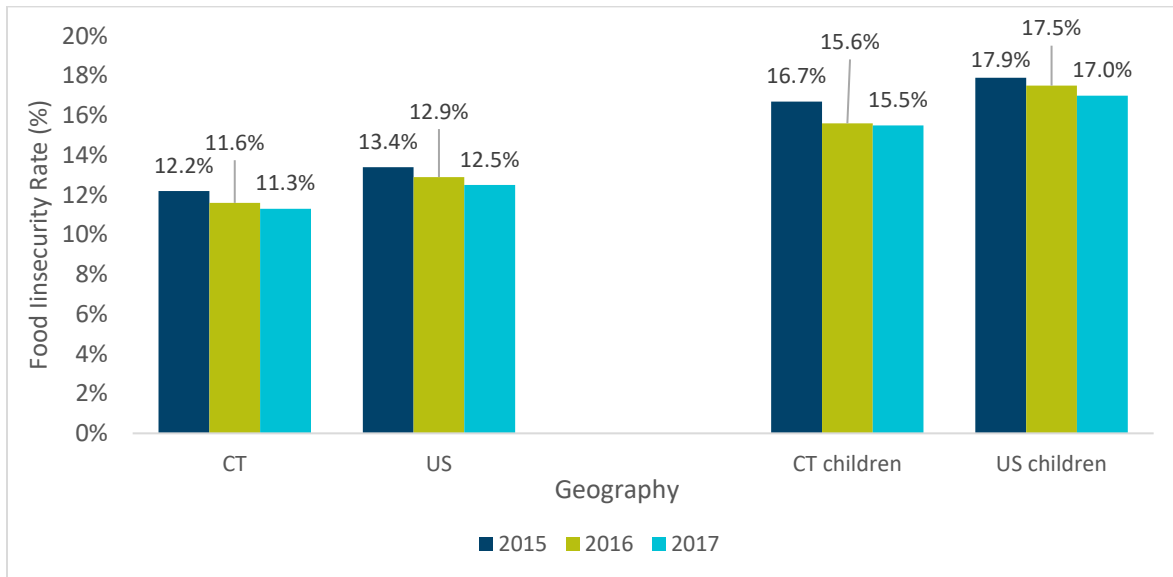
Though poisoning affects all ages, children under six years of age comprise a disproportionate percentage of the cases and peak poisoning frequency occurs in children ages one and two. Childhood exposures often occur as a result of exploratory behavior. In these cases, the amounts ingested are usually small and the health effects minimal. However, exposures to some medicines and household chemicals even in small amounts can result in serious illness or death, especially in small bodies. In contrast, poisoning (including drug poisoning) in teens and adults is more serious.⁸⁹

Nationally, the rate of nonfatal poisoning-related emergency department (ED) visits and hospitalizations per 100,000 population trended downwards from 2008-2014, from 173.1 per 100,000 population in 2008 to 136.6 in 2014, and then increased dramatically from that point onwards.⁸⁹ High incidence of rates were observed in the 0 to 4 year-old age group between years 2008 to 2016 and trended downward in year 2017.

Food Insecurity

As noted above, there can be lasting effects of food insecurity that can impact health, and children are the most susceptible. Figure 64 highlights the strides made in recent years to undercut food insecurity. For the whole population, Connecticut has slightly lower rates of food insecurity than the U.S. as a whole, and also among children. However, within the State, children are more likely to experience food insecurity than the population as a whole. More must be done to promote a healthier life course for Connecticut’s children.

Figure 64: Food Insecurity Rate Overall and among Children, Connecticut and United States, 2015-2017



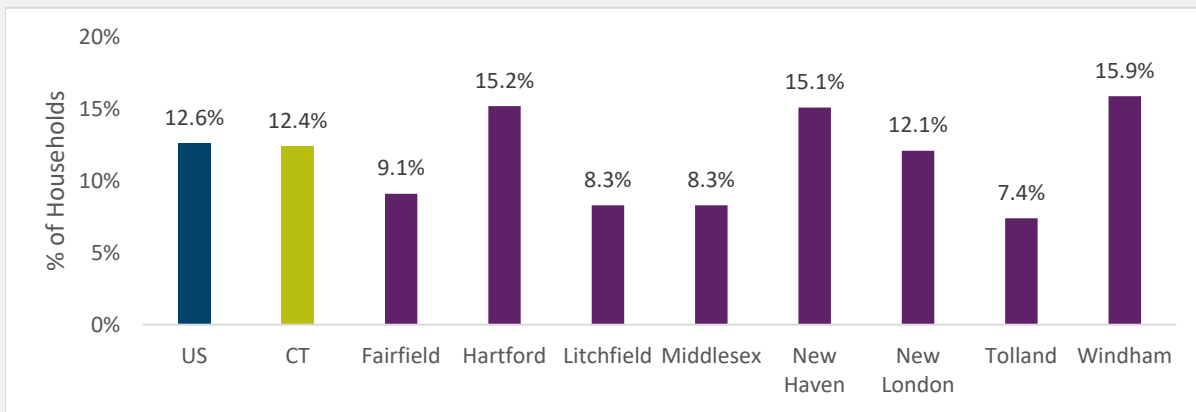
Data Source: Feeding America. *Child Food Insecurity in the United States*. Data retrieved from <https://map.feedingamerica.org/>, 2015 – 2017

Supplemental Nutrition Assistance Program (SNAP)

The Supplemental Nutrition Assistance Program (SNAP, or formerly referred to as the Food Stamp Program) is the largest domestic food and nutrition assistance program for low-income Americans in the nation. The program aims to reduce food insecurity and improve nutritional choices by providing nutrition benefits via an Electronic Benefits Transfer (EBT) card to supplement the food budget of low-income individuals and families. EBT cards can be used in authorized retail food stores to purchase eligible foods.

The percentage of households receiving SNAP in Connecticut is nearly identical to the Nation; however, an analysis by county indicates that New Haven, Hartford, and Windham Counties have the highest percentage of households receiving SNAP benefits in Connecticut. Hartford had the highest rate of households receiving SNAP at 41%, and three of Connecticut's largest were represented in the top 10 towns with the highest rates of households receiving SNAP. Of note, Fairfield County had the highest disparity among its towns with SNAP recipients; the next highest SNAP recipient rate of any town within the county was Danbury at 10%.¹

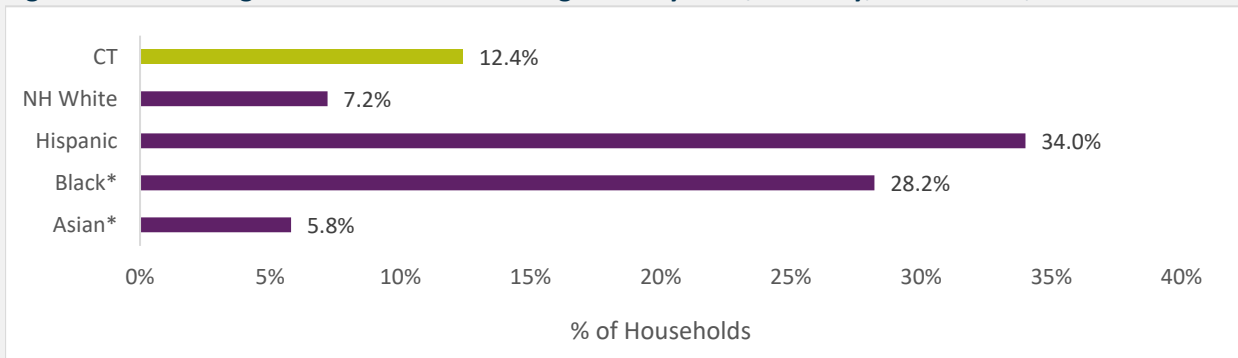
Figure 65: Percentage of Households Receiving SNAP; US, Connecticut, and Connecticut County; 2013-2017



Data Source: US Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Table S2201

When examining households by race/ethnicity, we see that one in three Hispanic households, and over one in four Black households receive SNAP benefits, compared to less than 10% of non-Hispanic White and Asian households.

Figure 66: Percentage of Households Receiving SNAP by Race/Ethnicity, Connecticut, 2013-2017



*Include persons of Hispanic origin

Data Source: Connecticut Data Collaborative. (2017). *SNAP Recipients by Town* [Year: 2013-2017]. Retrieved from <http://data.ctdata.org/>.

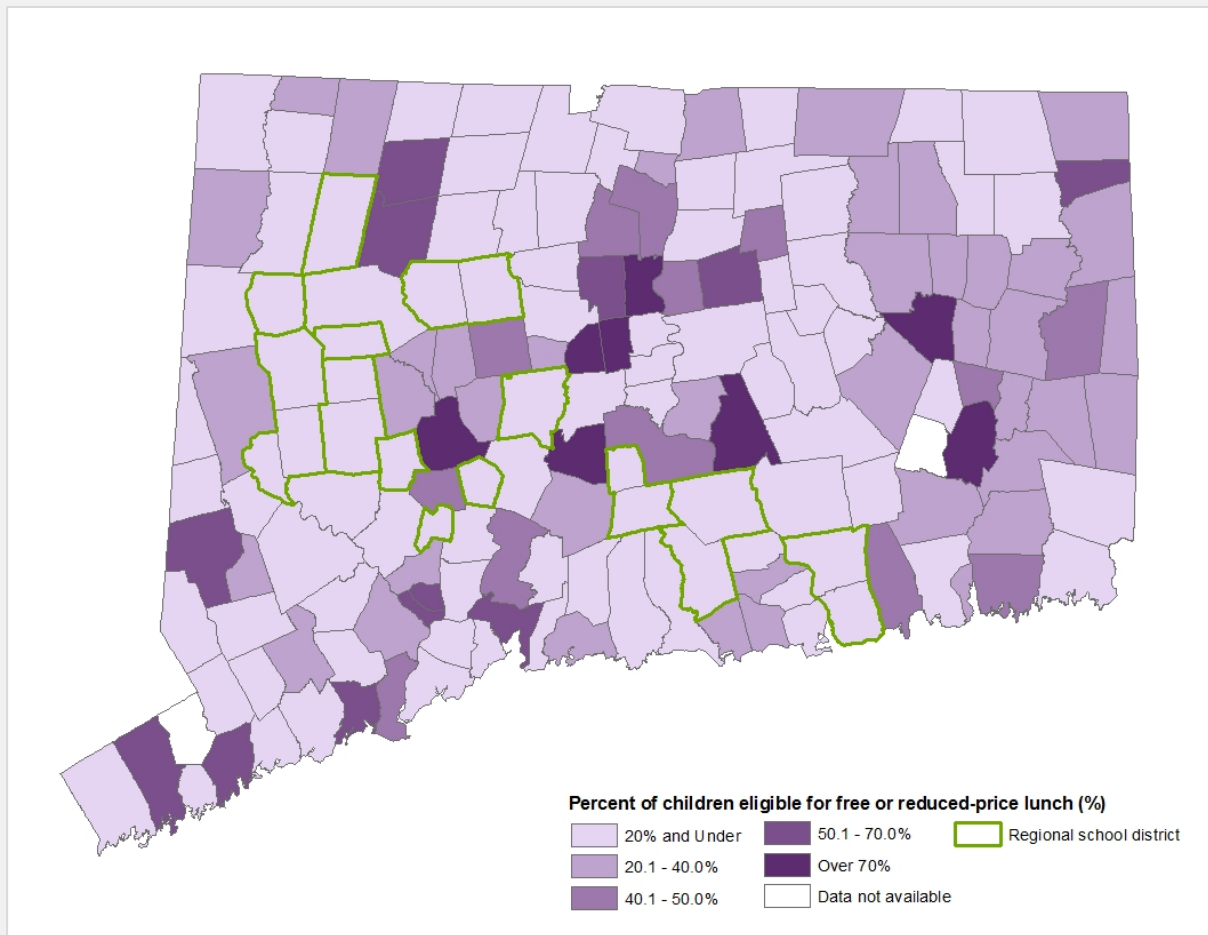
¹ U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, S2201: FOOD STAMPS/Supplemental Nutrition Assistance Program (SNAP).

Free and Reduced-Price Lunch

The National School Lunch Program, created under the National School Lunch Act, focuses on reducing child hunger and food insecurity to promote child health and reduce obesity. Children who meet eligibility requirements based on family size and income receive adequate nutrition to support their health and well-being. Participation in the National School Lunch Program is a useful indicator of household poverty.

In Connecticut, over one in three children are eligible for free or reduced-price lunch.

Figure 67: Percentage of Children Eligible for Free or Reduced-Price Lunch by Town, Connecticut, 2016-2017



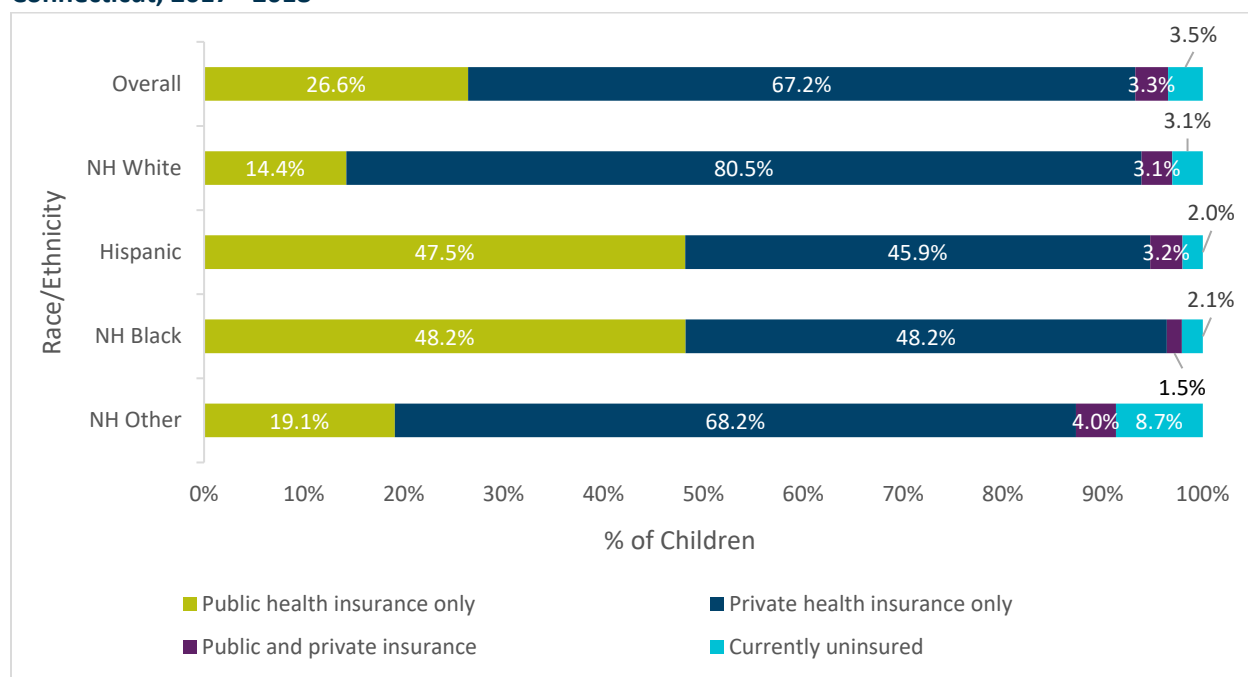
Data Source: Connecticut State Department of Education. Eligibility data for free and reduced lunch by school district. Retrieved from EdSight interactive data portal for 2017-2018 school year.

Note: for towns that are part of a regional school district (i.e., 6, 10, 12, 13, 14, 15, 16, 17, and 18; outlined above), percentage eligible reflect regional school district rate; all other rates are for town school districts.

Access to Health Care

The type of health insurance coverage among children in Connecticut varied greatly by race/ethnicity in 2017-2018 (Figure 68). Over 80% of non-Hispanic White children were covered by private insurance only, compared to 48.2% of non-Hispanic Black children and 45.7% of Hispanics. Children of non-Hispanic Other race had the highest prevalence of being uninsured (8.7%).

Figure 68: Type of Health Insurance Coverage among Children (0-17 Years), by Race/Ethnicity, Connecticut, 2017 - 2018



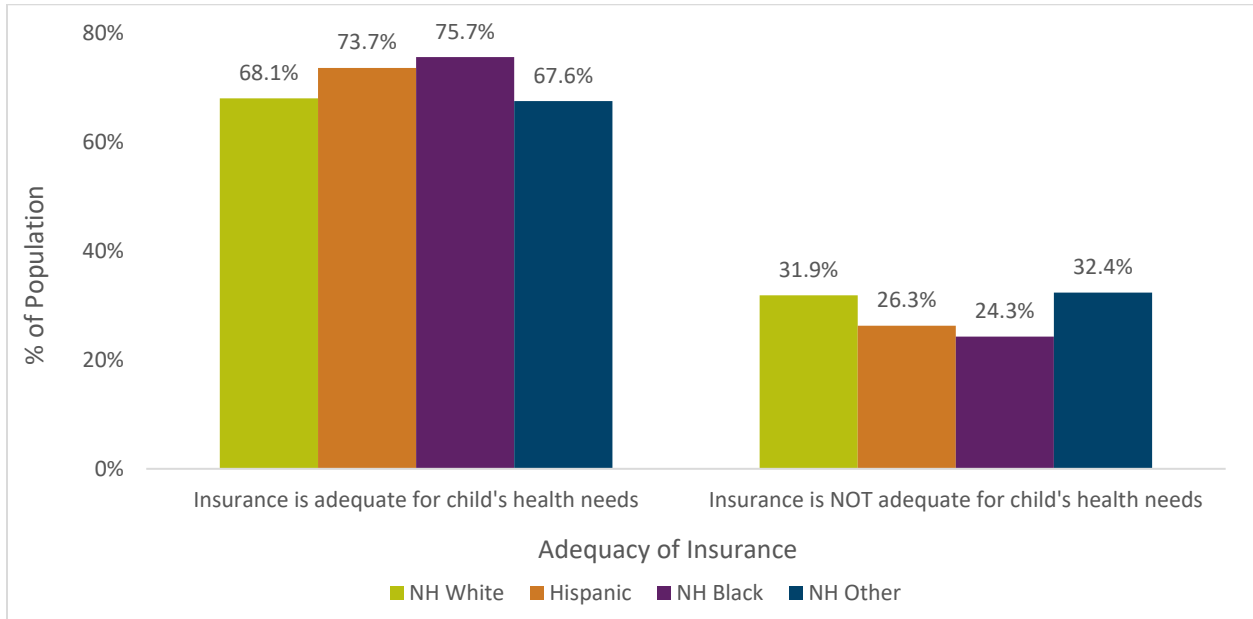
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Data Source: National Survey of Children's Health, 2017 – 2018

Almost one in four American children with continuous insurance coverage are not adequately insured (as reported by their caregiver as insurance benefits being inadequate). Inadequately insured children are more likely to have delayed or forgone care, lack a medical home, be less likely to receive needed referrals and care coordination, and receive family-centered care. The major problems cited were cost-sharing requirements that are too high, benefit limitations, and inadequate coverage of needed services.⁹⁰

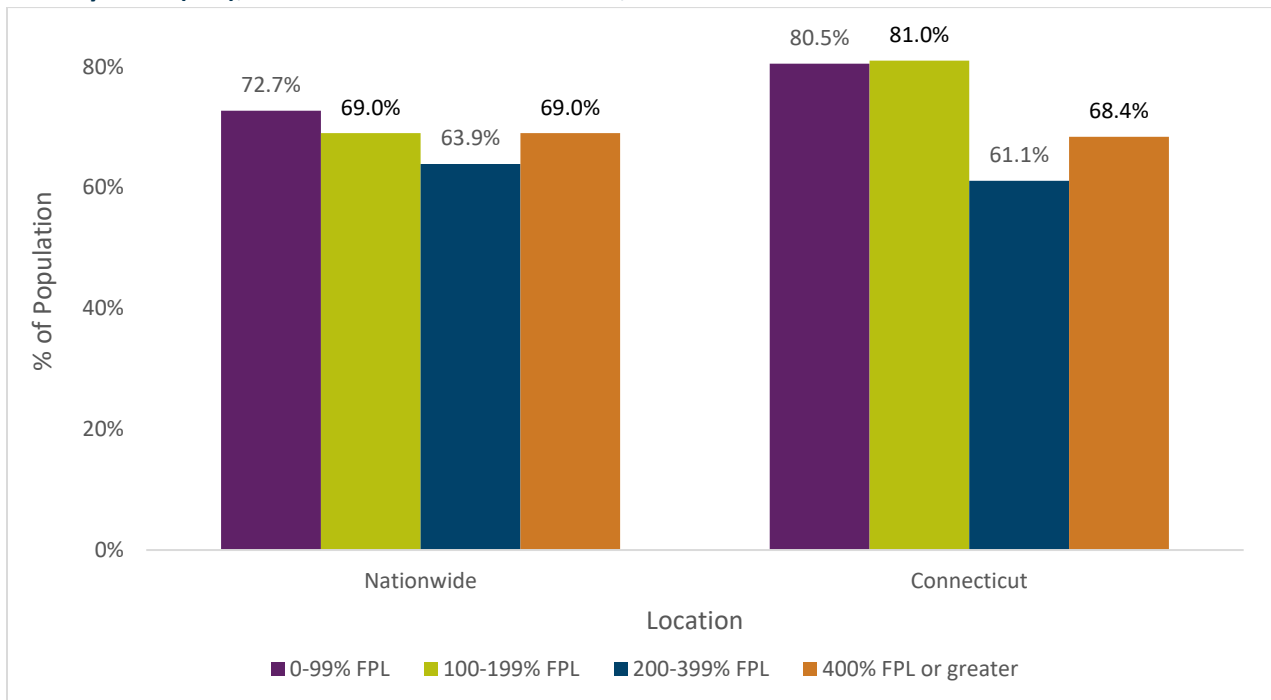
Many children in Connecticut are also not continuously or adequately covered by health insurance. More parents of White children (31.9%) and children of Other race (32.4%) report inadequate insurance coverage (Figure 69). For children living in households below 200% of the FPL, Connecticut exceeds the national average for the number of children continuously and adequately insured, at an impressive 81.0% (Figure 70). However, in households with incomes above this level, insurance coverage is apparently worse, with only 60-70% of families reporting continuous and adequate coverage. This may reflect the “donut hole” gap in availability of affordable insurance for working families living above the FPL.

Figure 69: Percentage of Children Ages 0-17 Who Are Continuously and Adequately Insured by Race/Ethnicity, Connecticut, 2016-2017



Data Source: National Survey of Children's Health, 2016 - 2017

Figure 70: Percentage of Children Ages 0-17 Who Are Continuously and Adequately Insured by Federal Poverty Level (FPL), Connecticut and United States, 2016-2017



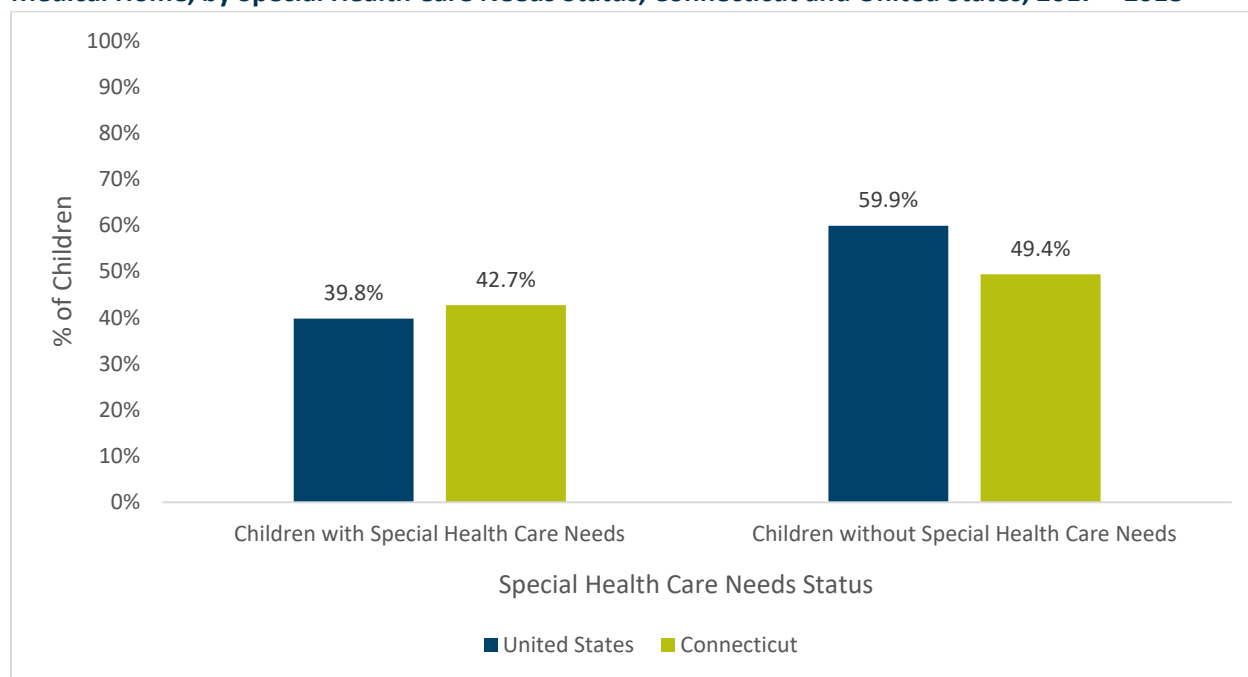
Data Source: National Survey of Children's Health, 2016 -2017

Poverty in Families in Connecticut

- There are large disparities in families living below the Federal Poverty Level (FPL) in Connecticut.
- Of women who gave birth in 2018, 15.4% lived below the FPL and an additional 16.0% lived below 200% of the FPL.
- Families living below FPL: 3.5% of non-Hispanic Whites, 20.5% of Hispanics, 5.5% of non-Hispanic Asian and 13.8% of Black, non-Hispanics.
- Half of families with 5+ children live below FPL.
- Children (<18) have the highest prevalence of poverty (14%) for any age group in Connecticut.

Among children *without* special health care needs, Connecticut (49.4%) trailed the U.S. average (59.9%) in the proportion of children who received coordinated, ongoing, and comprehensive care within a medical home in 2017-2018 (Figure 71).

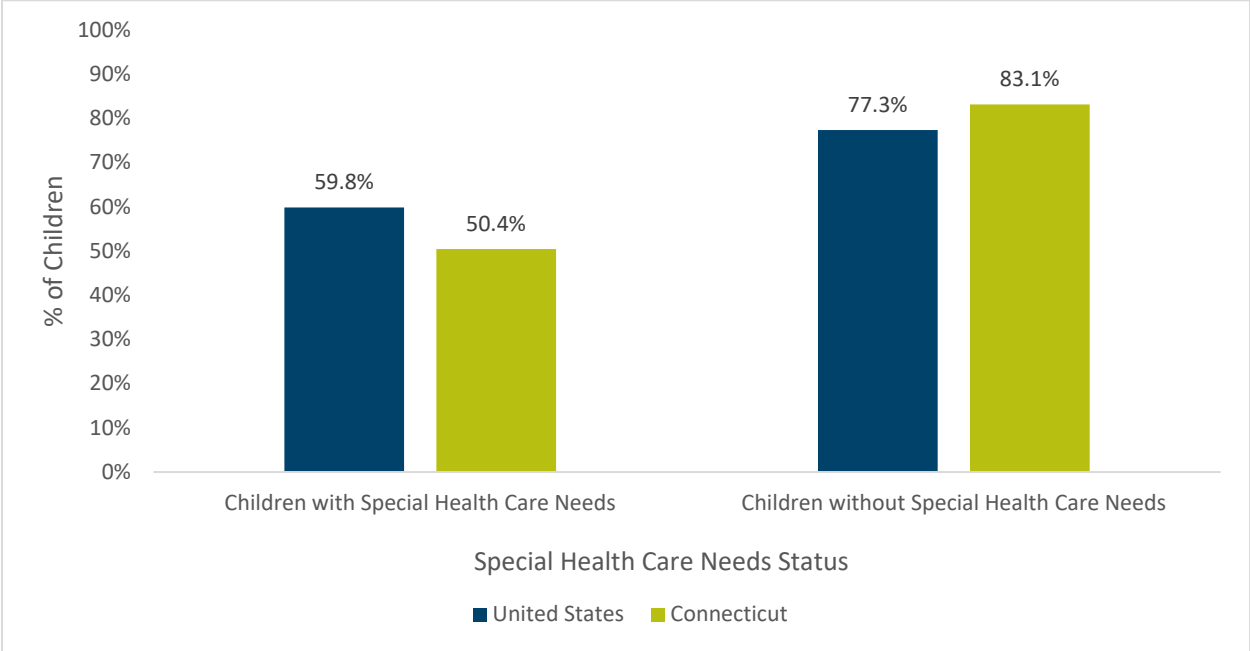
Figure 71: Percent of Children Who Received Coordinated, Ongoing, Comprehensive Care within a Medical Home, by Special Health Care Needs Status, Connecticut and United States, 2017 – 2018



Data Source: National Survey of Children’s Health, 2017 – 2018

However, 83.1% of children in Connecticut were reported as receiving needed and effective care coordination, compared to 77.3% of children in the U.S. on average, in the same time period (Figure 72).

Figure 72: Percent of Children Who Received Needed Effective Care Coordination, by Special Health Care Needs Status, Connecticut and United States, 2017 - 2018



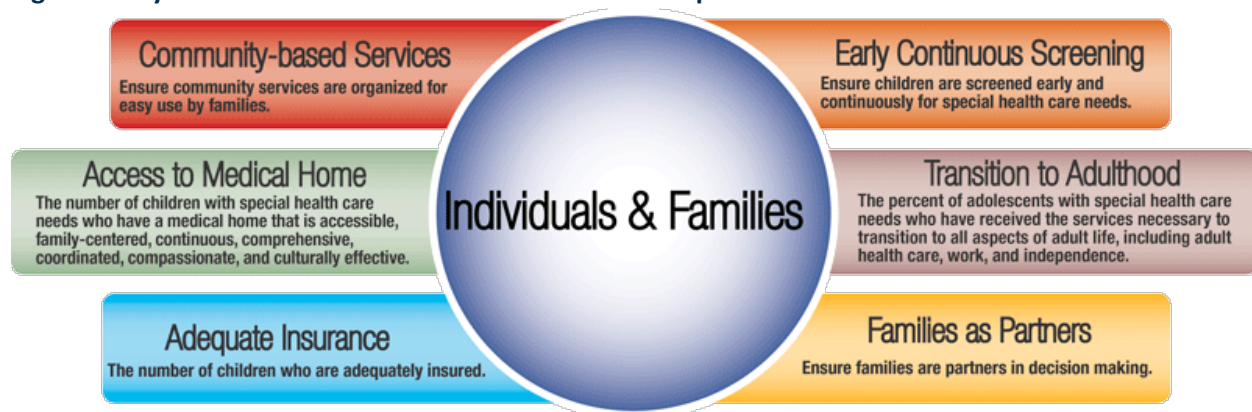
Data Source: National Survey of Children’s Health, 2017 – 2018

CHILDREN AND YOUTH WITH SPECIAL HEALTH CARE NEEDS

Children and youth with special health care needs have or are at increased risk for chronic, physical, developmental, behavioral, or emotional conditions. In addition, they often require more health-related services beyond what is required by children generally.⁹¹ To support their complex health needs and achieve optimal health outcomes, it is essential to create an effective system of care (Figure 73) that focuses on:

- Community-based services;
- Access to a medical home;
- Adequate insurance;
- Early continuous screening;
- Transition to adulthood; and
- Families as partners

Figure 73: Systems of Care for Children and Youth with Special Health Care Needs

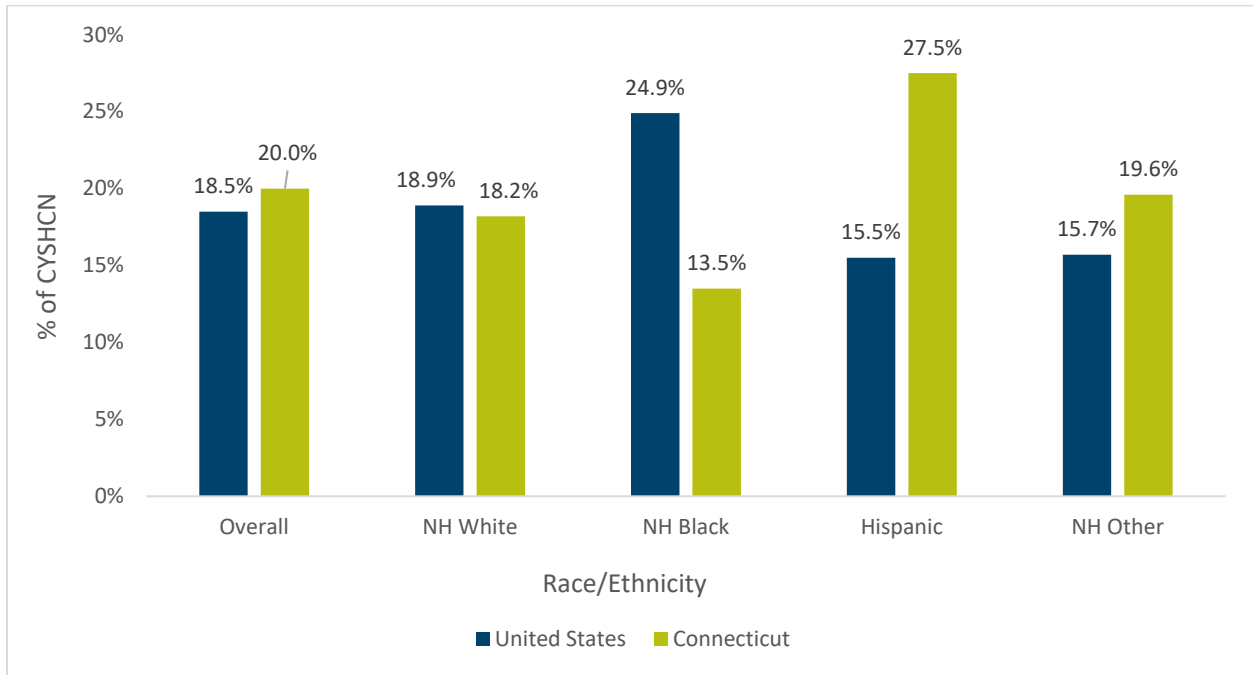


Data Source: Health Resources and Services Administration, Maternal & Child Health

Sociodemographics

In line with trends across the U.S., between 2011 and 2018, the proportion of children in Connecticut with special health care needs remained stable, at about 20% of the population (Figure 74). However, in 2017-2018, the proportion of children aged 0-17 years identified as CYSHCN varied substantially by race/ethnicity, with a range of 13.5% of non-Hispanic Black children to 27.5% of Hispanic children.

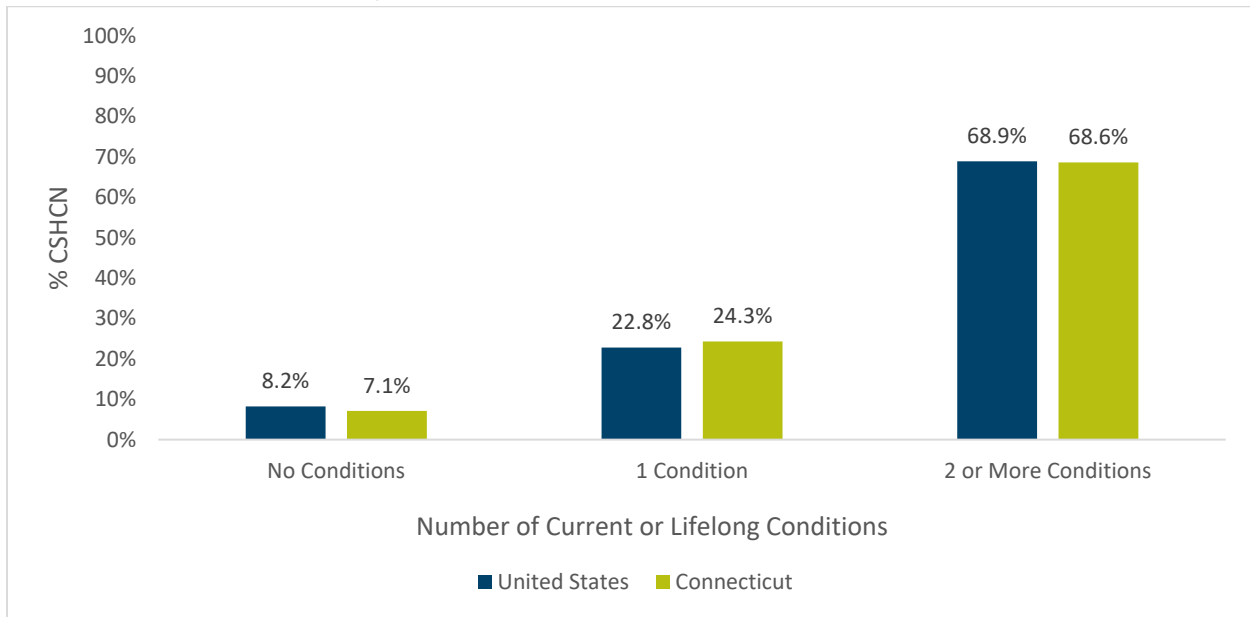
Figure 74: Percent of Children and Youth with Special Health Care Needs (0 – 17), by Race/Ethnicity, Connecticut and United States, 2017 – 2018



Data Source: National Survey of Children’s Health, 2017 – 2018

Among CYSHCN in Connecticut in 2017/2018, only 7.1% had no current or lifelong health conditions, while 68.6% had two or more conditions (Figure 75). This highlights the importance of effective and efficient comprehensive health services for these children and their families.

Figure 75: Number of Current or Lifelong Health Conditions, Children with Special Healthcare Needs, Connecticut and United States, 2017 - 2018



Data Source: National Survey of Children’s Health, 2017 - 2018

Access to Health Care

There is a well-documented benefit for children in having health insurance. Research has shown that children who acquire health insurance are more likely to have access to a usual source of care, receive well childcare and immunizations, to have developmental milestones monitored, and receive prescriptions drugs, appropriate care for asthma and basic dental services. Serious childhood problems are more likely to be identified early in children with insurance, and insured CYSHCN are more likely to have access to specialists. Insured children not only receive more timely diagnoses of serious health care conditions, but they also experience fewer avoidable hospitalizations, improved asthma outcomes and fewer missed school days.⁹²

Children and youth with special needs and their families face additional challenges in navigating complex healthcare systems. Although children and youth with special health care needs are more likely to be insured compared to the general population of children and youth, nearly 4% did not have health insurance in 2016.⁹³ Similar to all children and youth, this group has seen a shift toward public insurance coverage and away from private insurance over the last 15 years. In 2001, nearly three-quarters of children and youth with special health care needs had private insurance (73%) and less than one-third had public insurance (30%). However, in 2016, the proportion of children and youth with special health care needs who had either private or public insurance was split relatively evenly (54% and 48%, respectively).⁹³

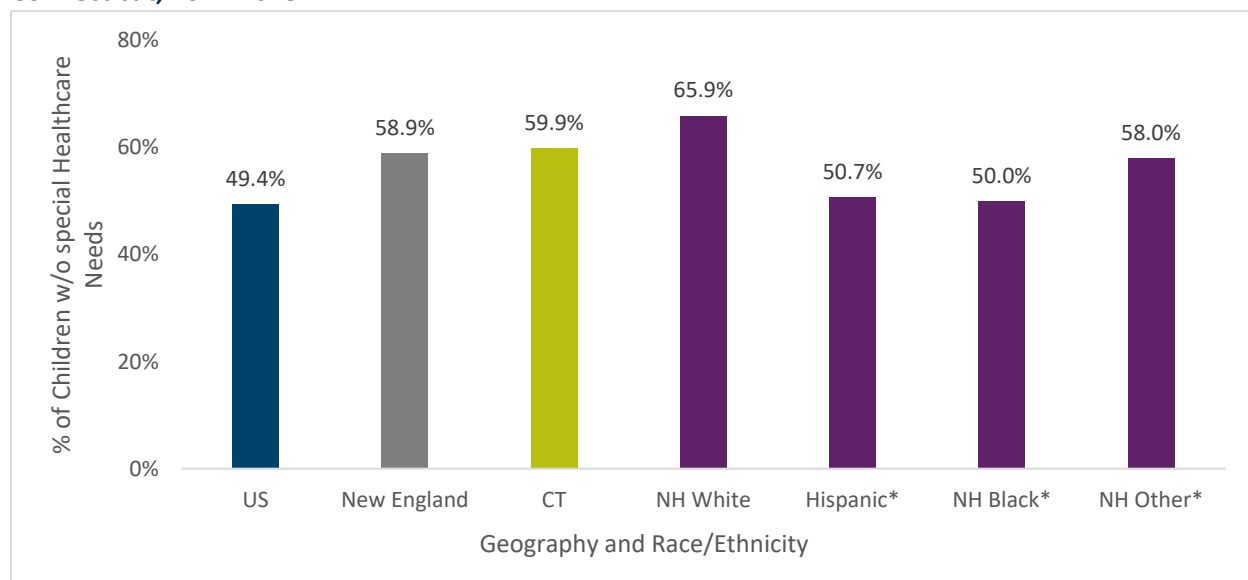
Health insurance access that is both continuous and adequate is important to the health of children, especially CYSHCN. While Connecticut children age birth to 17 overall have better insurance coverage than their national counterparts, there are still barriers to receiving adequate and continuous coverage.⁹³ For example, complicated enrollment and determination of eligibility, changes in family circumstances that affect eligibility, and difficulty in communicating options to families.⁹⁴ Working with providers, insurance providers, and families, the State can work to decrease these barriers.

Medical Homes

The medical home model for children and adults is a proven approach to provide comprehensive and high-quality primary care. The Patient Protection and Affordable Care Act (PPACA) emphasized the implementation and promotion of the medical home model for children and adults to improve the experience of care, improve population health, and reduce per capita costs of healthcare. Coordinated standards of care for children and youth are associated with increased access and utilization of pediatric medical homes; as a result, health outcomes are improved, patient satisfaction is increased, and the overall cost of care is decreased over time.

According to the most recent data, Connecticut has a pointedly higher percentage of children without special healthcare needs receiving medical care within a medical home when compared to the national rate and is only slightly higher than all 6 New England states in aggregate (Figure 76). Connecticut also exhibits disparities across race and ethnicity for children receiving care within a medical home. Non-Hispanic White children receive care within a medical home 32% more than non-Hispanic Black children, 30% more than Hispanic children, and 14% more than non-Hispanic children of any race.* *Strategies to ensure equitable access to medical homes are important to identify because without interventions, children of color (i.e., Hispanic and any non-Hispanic race except White) will bear the burden of long-term negative health outcomes.*

Figure 76: Percentage of Children under 18 Years Old without Special Healthcare Needs Receiving Care within a Medical Home by Race/Ethnicity; United States, New England States (HRSA Region 1) and Connecticut, 2017-2018



**While each estimate is based on sample size calculations, these are flagged because of wide absolute or relative confidence intervals.*

Data Source: US Census Bureau National Survey of Children's Health. *NSCH Data, 2017 – 2018*. Data analyzed October 12, 2019. Retrieved from <https://www.census.gov/programs-surveys/nsch/data.html>

There is also evidence that these racial/ethnic disparities in medical home care may be even worse for children and youth with special healthcare needs (CYSHCN). While 39.8% of Connecticut's CYSHCN population receives care in a medical home, a medical home has been identified for 42.7% and 44.9% of CYSHCN population nationally and in New England, respectively. It should be noted that before 2016,

this medical home indicator was produced for all children regardless of special healthcare needs. See the Maternal Infant and Child Health chapter of the SHA for more information.

To address the underutilization of medical homes by children of color, it is important to consider whether services provided are culturally and linguistically appropriate. Connecticut households that are comprised of non-English speakers are less likely to have children that receive care within a medical home (43.2% versus 62.8% of children in English-speaking households).⁹³ In addition, the proportion of Hispanic children from non-English speaking households receiving care within a medical home is lower than Hispanic children from English-speaking households (approximately 32.9% and 62.3%, respectively); considering that the rate for Hispanic children where English is the primary household language is basically the same as for non-Hispanic children, there is a case that language services are being underutilized. Other than English, Spanish is one of the top three most spoken languages in Connecticut, which follows that ensuring adequate Spanish-speaking outreach is an important service improvement to address these disparities in attaining a medical home for children.

The American Academy of Pediatrics (AAP) believes that the medical care of infants, children, and adolescents ideally should:

- Be accessible, continuous, comprehensive, family centered, coordinated, compassionate, and culturally effective;
- Be delivered or directed by well-trained providers who provide primary care;
- Help to manage and facilitate essentially all aspects of pediatric care;
- Be supported by a provider who is known to the child and family and who can develop a partnership of mutual responsibility and trust with them.⁹⁵

These characteristics define the patient-centered medical home, from which all children and adolescents can benefit. In particular, children and youth with special health care needs (CYSHCN) benefit from having a medical home, as they and their families often need services from multiple systems – healthcare, public health, education, mental health, and social services. CYSHCN are young people who “have or are at increased risk for chronic physical, developmental, behavioral or emotional conditions and who also require health and related services of a type or amount beyond that required by children generally.”⁹⁶

Medical home implementation for CYSHCN is supported by a national resource center, the National Center for Medical Home Implementation. The center focuses on improving access to a regular, ongoing source of health care in the community with appropriate sources of routine and specialty health care and integrated with the requisite community services for all children and youth, particularly for those with special health care needs. This center is supported through a cooperative agreement between the Maternal Child Health Bureau and the American Academy of Pediatrics.

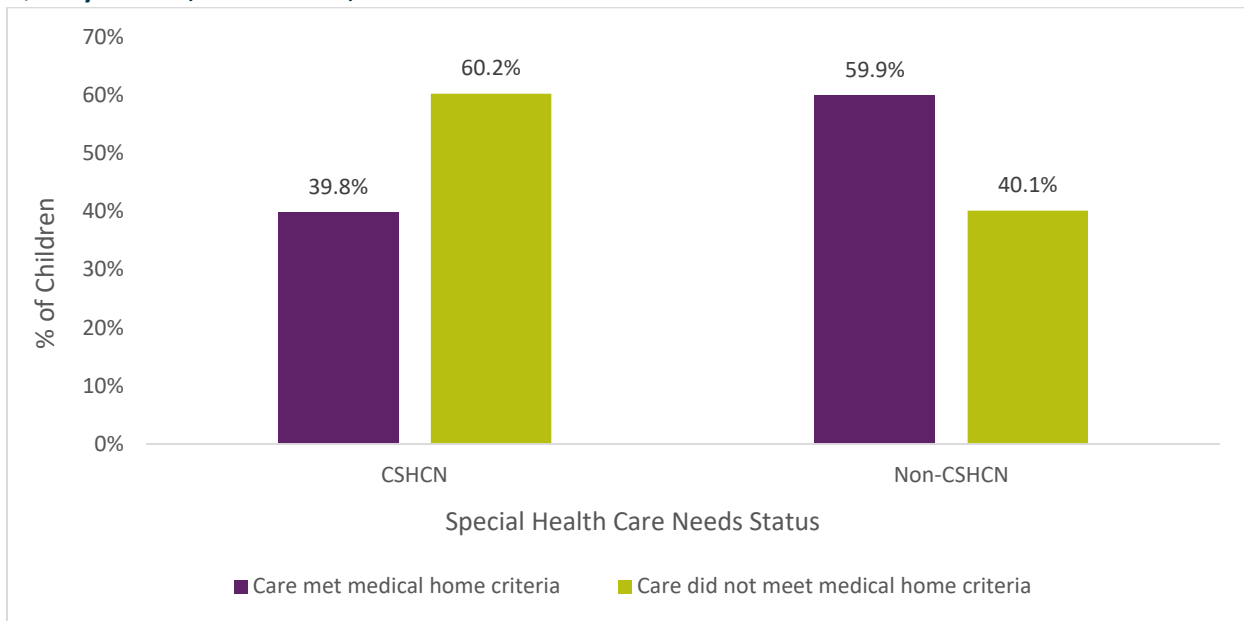
In Connecticut, children without special health care needs were more likely to receive care that met medical home criteria, compared to CYSHCN (Figure 77). Specifically, among CYSHCN ages 0 through 17, two in five received care that met medical home criteria, compared to three in five non-CYSHCN. Some barriers to comprehensive care and care coordination include access to physical and behavioral health services, transportation, availability of care 24 hours per day and seven days a week, culturally-competent care provided in the language of choice, sufficient personnel, and a pediatrician’s belief that the medical home model encourages preventive service use.^{97, 98}

State Health Assessment Focus Group, Families of Children with Special Healthcare Needs

Facilitator: “What are some of the biggest problems or concerns in your community?”

Participants: “ED issues, the lack of services potentially.” “And dental special needs care. It’s finding a doctor that will do the procedures that are needed.”

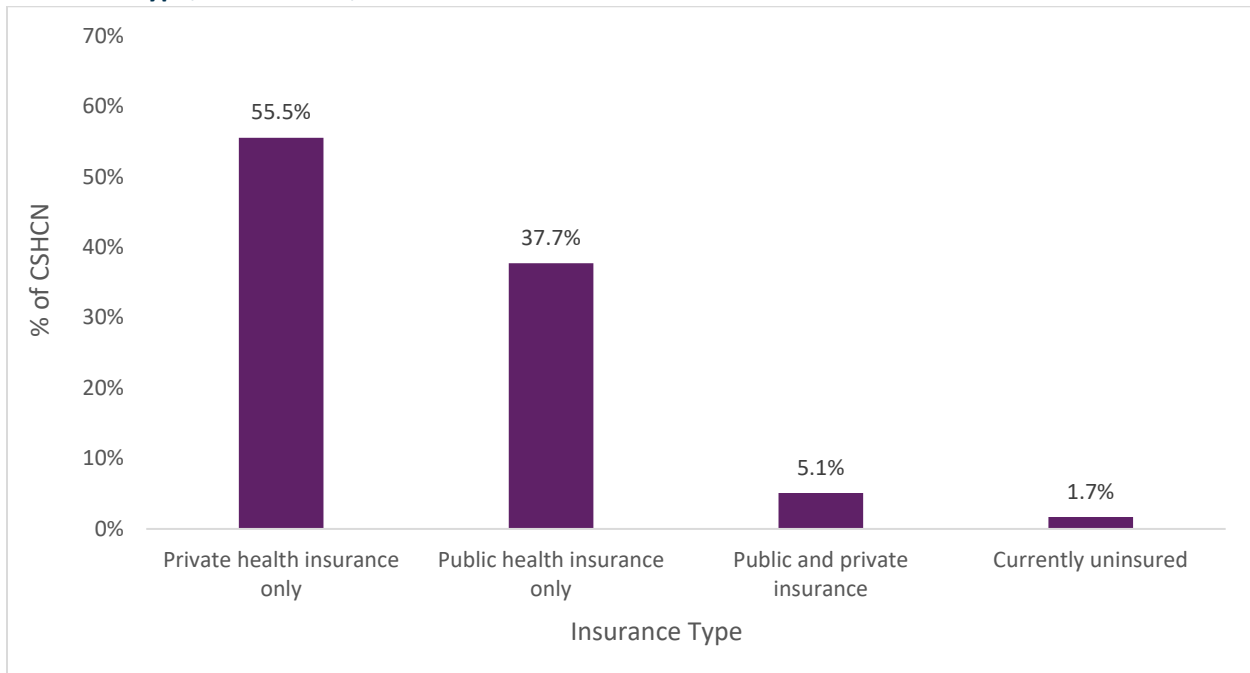
Figure 77: Percentage of Children and Youth with Special Health Care Needs (CYSHCN) Ages 0-17 by Quality of Care, Connecticut, 2017-2018



Data Source: National Survey of Children's Health, 2017 -2018

When looking at the CYSHCN population, only approximately two percent are uninsured (Figure 78). Insurance access is essential to access to a medical home.

Figure 78: Percentage of Children and Youth with Special Health Care Needs (CYSHCN) Ages 0-17 by Insurance Type, Connecticut, 2016-2017



Data Source: National Survey of Children's Health, 2016 - 2017

Medical Home Initiatives

- Connecticut Medical Home Initiative for Children & Youth with Special Health Care Needs
- Connecticut Medical Home Initiative at FAVOR, Inc.
- Connecticut Family Support Network

To advance Medical Home utilization in Connecticut, DPH is:

- Conducting outreach to educate consumers about the benefits and availability of patient-centered medical homes;
- Partnering with community organizations and stakeholders engaged through the Medical Home Advisory Council to promote the benefits of medical homes to consumers and providers; and
- Partnering with the Department of Social Services Person Centered Medical Home program, Community Health Network, and others to support providers in pursuing National Committee for Quality Assurance (NCQA) recognition or Joint Commission Accreditation as patient centered medical homes.⁹⁹

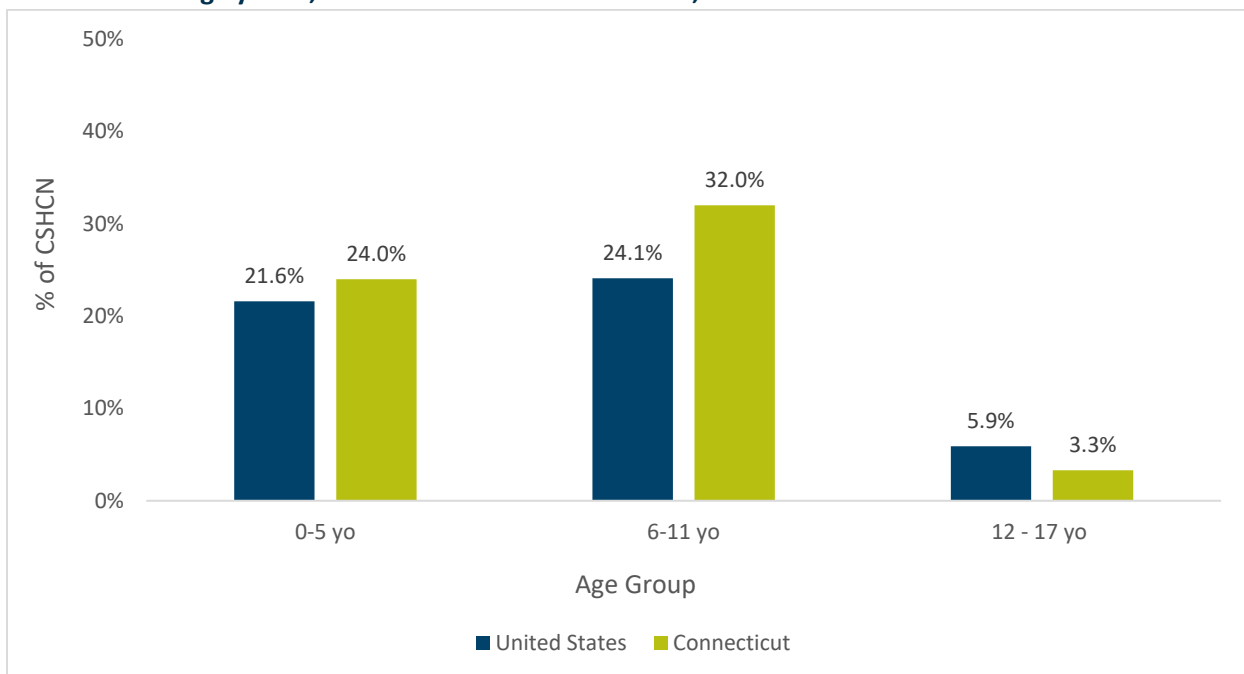
State Health Assessment Focus Group, Families of Children with Special Healthcare Needs

“Have to fight tooth and nail to get services. Lived in [another state] don’t get a quarter of services I had [there]. Try this, try that, doesn’t work. Looking for things on your own but no information, don’t have services, don’t know where to access.”

Among CYSHCN, Connecticut (42.7%) was slightly ahead of the U.S. average (39.8%) in the proportion of children who received coordinated, ongoing, and comprehensive care within a medical home in 2017-2018. In contrast, only 50.4% of CYSHCN in Connecticut were reported as receiving needed and effective care coordination, compared to 59.8% of children in the U.S. on average, in the same time period. Connecticut (13.5%) also trailed the U.S. (18.9%) in the proportion of 12-17-year-old CYSHCN who received the services needed to transition to adult health care.

Families of CYSHCN reporting receiving care in a well-functioning system varied greatly by age. In 2017-2018, the proportion was 24.0% for 0-5 year-olds, 32.0% for 6-11 year-olds, and 3.3% for 12-17 year-olds (Figure 79). Overall, 11.2% of parents of CYSHCN reported they were usually or always frustrated getting services for their child, compared to only 0.3% of parents of children without special health care needs (NCHS).

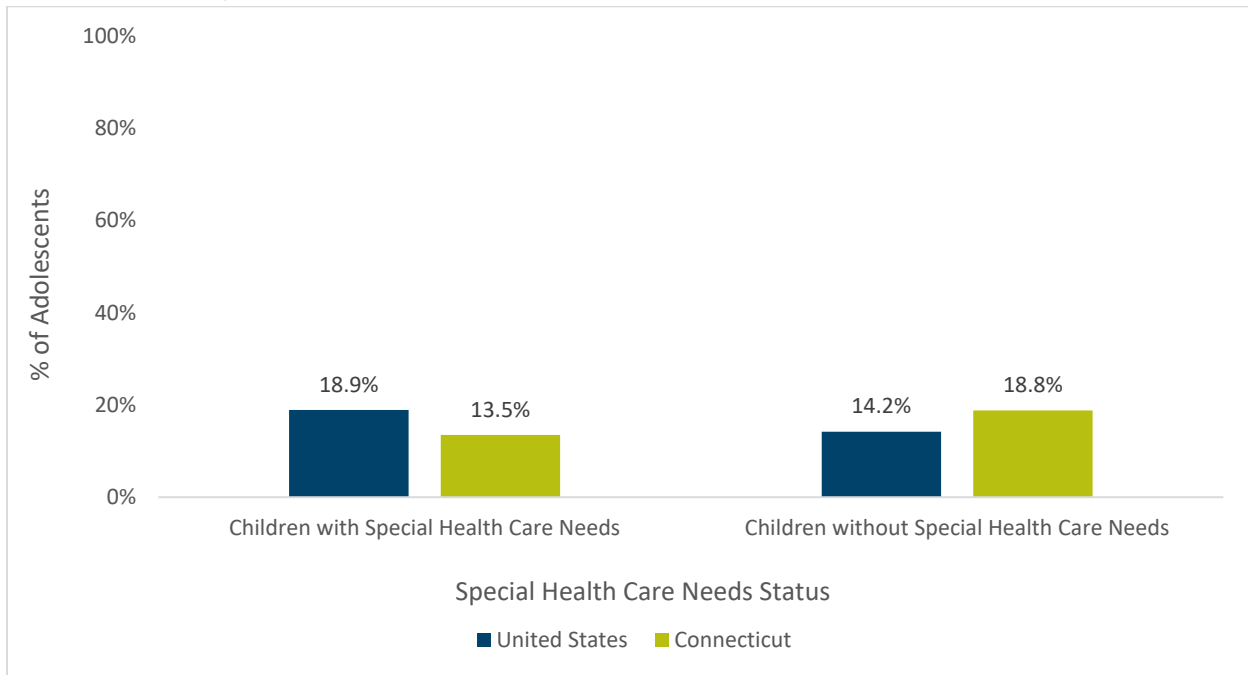
Figure 79: Percent of Children and Youth with Special Health Care Needs (0-17) Who Receive Care in a Well-Functioning System, Connecticut and United States, 2017 – 2018



Data Source: National Survey of Children’s Health, 2017 – 2018

Connecticut (13.5%) also trailed the U.S. (18.9%) in the proportion of 12-17 year-old CYSHCN who received the services needed to transition to adult health care (Figure 80). This compares to children without special health care needs, where Connecticut (18.8%) is better than the U.S. average (14.2%).

Figure 80: Child (12 – 17) Received Services Needed to Transition to Adult Health Care, Connecticut and United States, 2017 – 2018



Data Source: National Survey of Children’s Health, 2017 – 2018

Autism

Individuals with autism spectrum disorder (ASD) experience increased morbidity and decreased life expectancy compared to the general population, and these disparities are likely exacerbated for those individuals who are otherwise disadvantaged.

Nationally, one in 59 children were diagnosed with ASD by age eight, a 15% increase over diagnoses in 2012.¹⁰⁰ Boys overall are diagnosed with ASD more frequently than girls; however, the gender gap is narrowing. Boys were four times more frequently diagnosed with ASD compared to girls in 2014, while boys were 4.5 times more frequently diagnosed compared to girls in 2012. This appears to reflect improved identification of autism in girls – many of whom do not fit the stereotypical picture of autism seen in boys.¹⁰⁰

White children are also still more likely to be diagnosed with autism than non-White children.¹⁰¹ However, like the gender gap, the racial/ethnic gap had narrowed since 2012, particularly between Black and White children. This appears to reflect increased awareness and screening in non-White communities. However, the diagnosis of autism among Hispanic children still lags significantly behind that of non-Hispanic children.

Reliable estimates of autism’s prevalence among adults are not available. Each year, an estimated 50,000 teens with autism age out of school-based services.¹⁰²

Autism services cost the nation \$236-262 billion, with costs over the lifespan estimated to be about \$2.4 million for a person with an intellectual disability or \$1.4 million for a person without an intellectual disability. A majority of these costs are in adult services (estimated at \$175-196 billion), compared to

\$66 billion for children. The cost of lifelong care can be reduced by two thirds with early diagnosis and intervention.¹⁰³

Increasing awareness and the frequency and accuracy of ASD screening across gender, race/ethnicity, and ages are essential to advance health equity and reduce avoidable healthcare costs. Accurate data will allow for better planning related to the needs and services of residents with ASD – such as employment, housing, and social inclusion.

In 2017-2018, 4.0% of children (aged 3-17) in Connecticut had ever been diagnosed with ASD (NCHS, 2017-2018). This is almost double the national percentage. This may speak to more awareness and screening of ASD among Connecticut residents when compared to the US overall.

State Health Assessment Focus Group, Families Affected by Autism

“A big issue is discrepancy between what town you live in and what quantity and quality of services you get in the schools. We happen to be in a pretty good town but it’s all about money, so a lot of these families probably need services outside of school and insurance doesn’t cover a lot of things.”

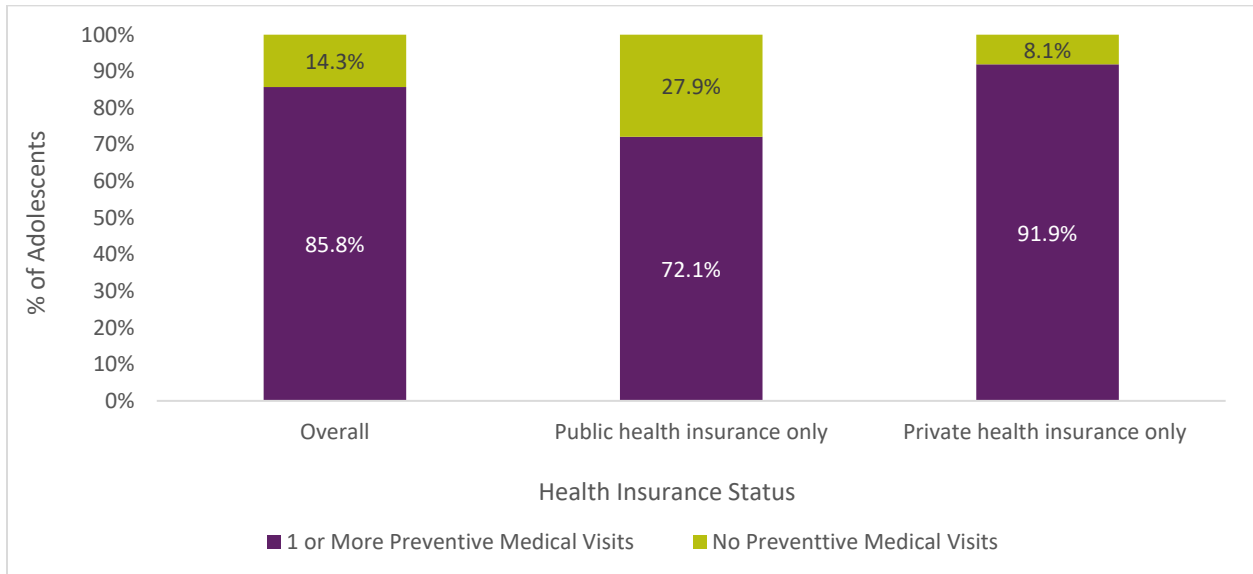
ADOLESCENT HEALTH

Adolescence is a critical time of growth and development. Physiologically, cognitively, and socially, adolescents change rapidly. It is therefore an important period to examine health and its social determinants, as this stage can establish patterns, behaviors, and trajectories that can last for years to come.

Health Care

Connecticut (85.8%) surpasses the national average (78.7%) for the number of 12-17-year-olds who had one or more preventive medical visits in the past year, in 2016-2017. However, prevalence varied substantially by insurance type: 91.9% of adolescents with private health insurance had an annual preventive medical visit, versus only 72.1% of their counterparts with public health insurance only (Figure 81). Improvements can clearly be made in this area.

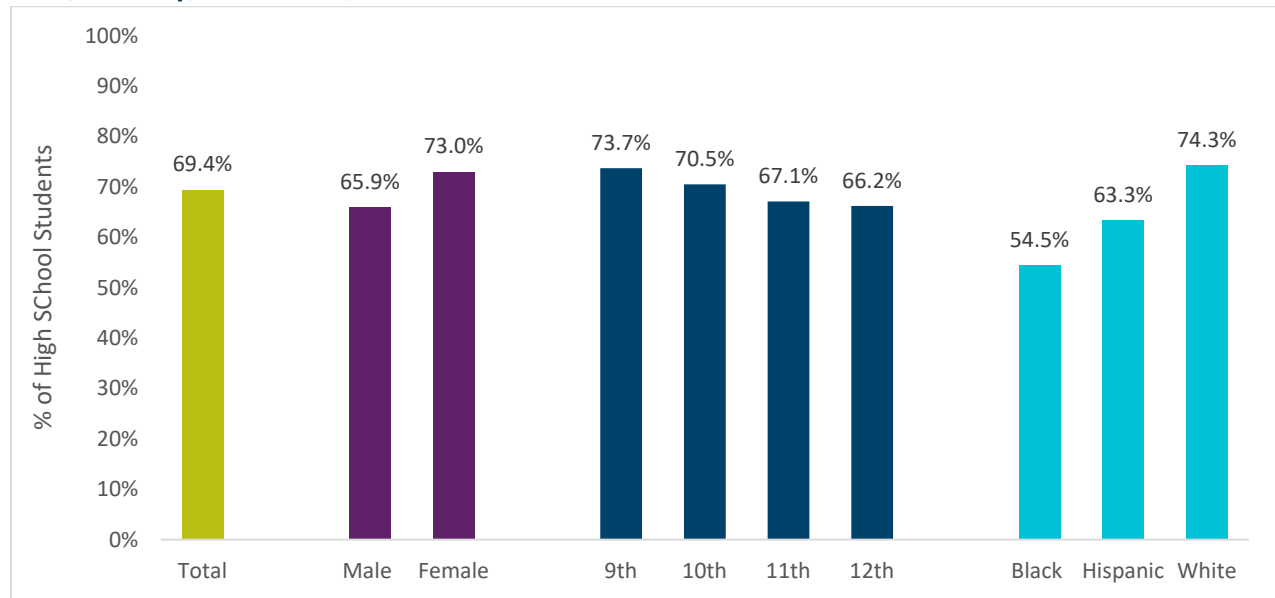
Figure 81: Percentage of Adolescents Ages 12 Through 17 Years with a Preventive Medical Visit in the Past Year, Connecticut, 2016-2017



Data Source: National Survey of Children's Health, 2016 - 2017

Focusing on older adolescents, almost 70% of high school students saw a doctor or nurse for a checkup in the past year, with Whites (74.3%) having a higher prevalence than Blacks (54.5%) and Hispanics (63.3%) (Figure 82).

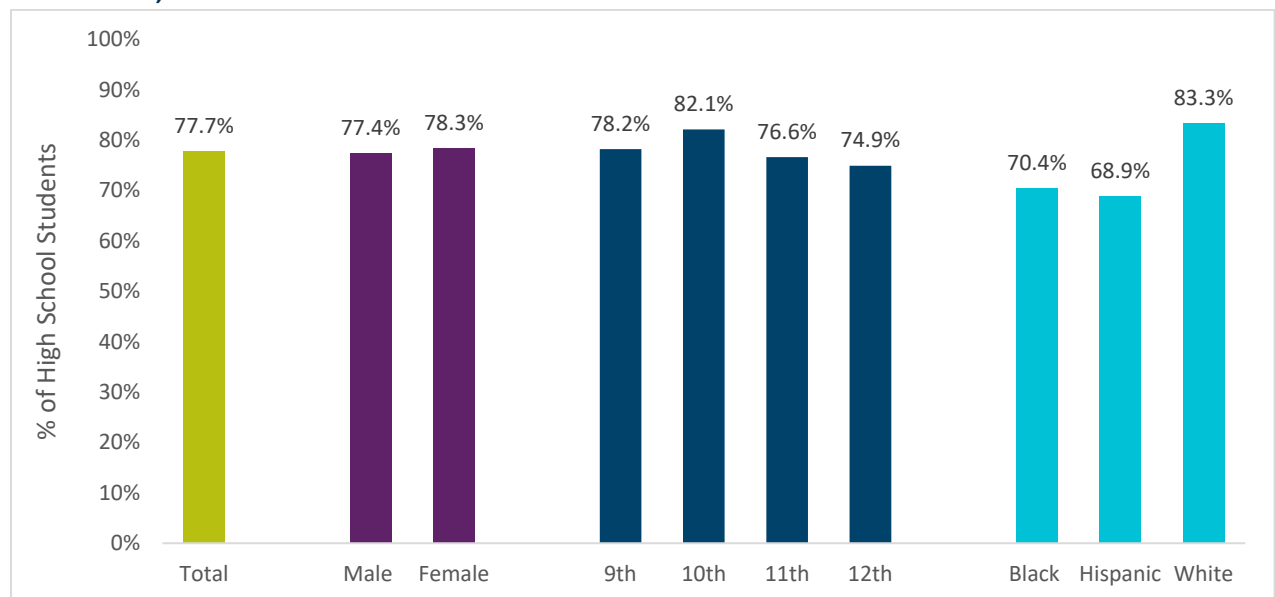
Figure 82: Percentage of High School Students Who Saw a Doctor or Nurse, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

Over three-quarters of high school students saw a dentist in the past year, with Whites (83.3%) having a higher prevalence than Blacks (70.4%) and Hispanics (68.9%) (Figure 83).

Figure 83: Percentage of High School Students Who Saw a Dentist, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019

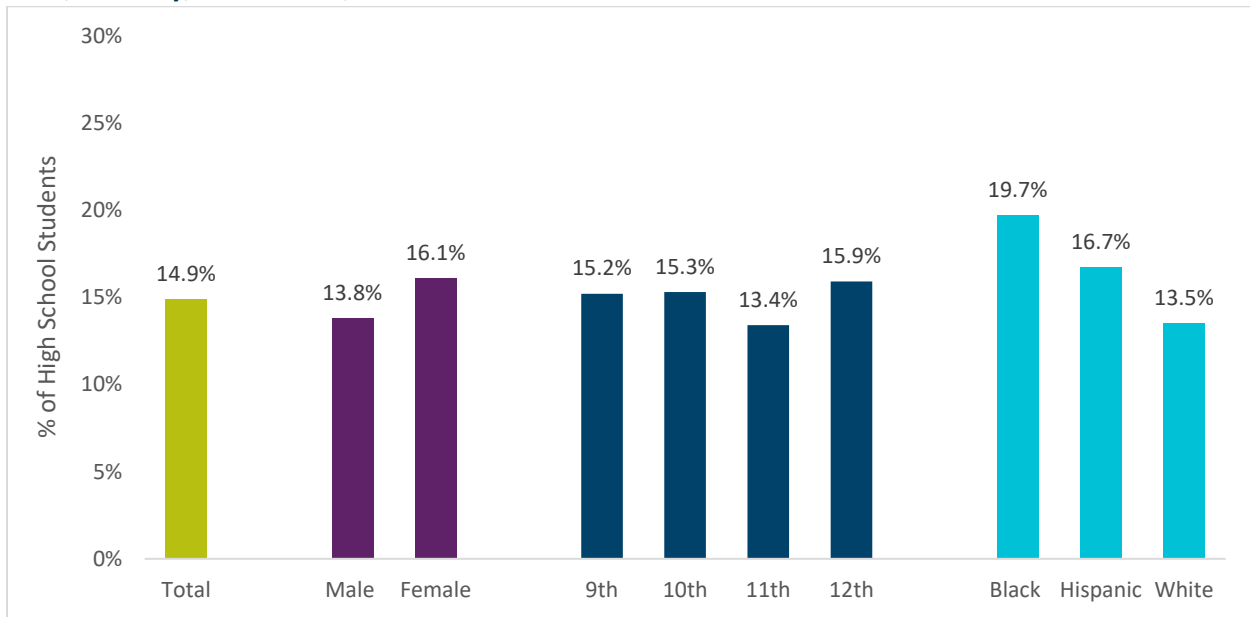


Data Source: Connecticut School Health Survey, 2019

Overweight and Obesity

In 2019, 14.9% of high school students were overweight (Figure 84) and 14.4% were obese (Figure 85), in combination equaling almost 30% of the population. Prevalence was higher in males than females, and in Blacks and Hispanics, compared to Whites.

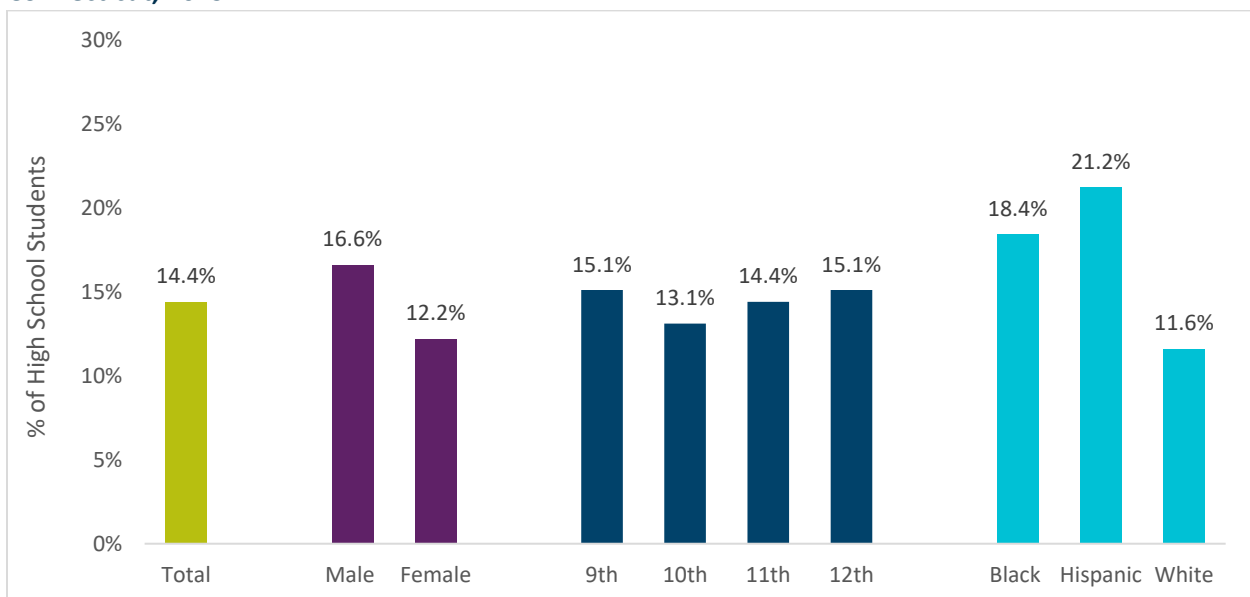
Figure 84: Percentage of High School Students Who Were Overweight, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

Note: Overweight is defined as $\geq 85^{\text{th}}$ percentile but $< 95^{\text{th}}$ percentile for body mass index, based on sex- and age-specific reference data from the 2000 CDC growth charts

Figure 85: Percentage of High School Students Who Had Obesity, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

Note: Obesity is defined as $\geq 95^{\text{th}}$ percentile for body mass index, based on sex- and age-specific reference data from the 2000 CDC growth charts

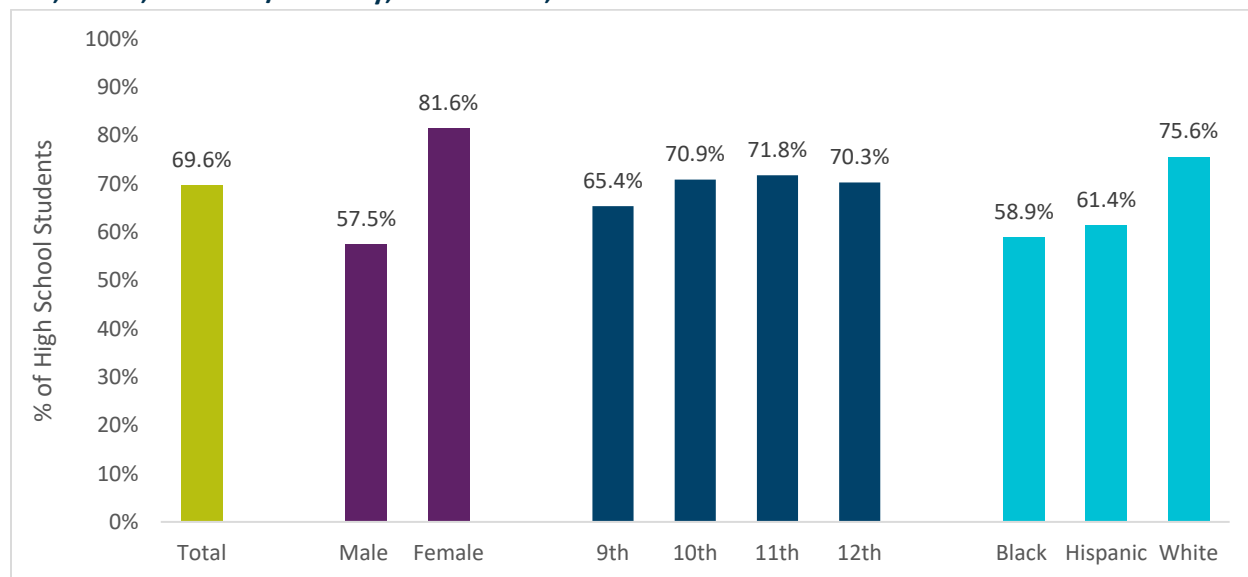
Mental Health

Behavioral health issues, including mental illness and substance use disorders, are associated with substantial social and economic costs to families and communities. In Connecticut, the percentage of the population diagnosed with depression, anxiety, ADHD, and other mental disorders, excluding drug or alcohol dependence, has increased overall since 2012. Substance use and alcohol use disorder screening, brief intervention and referral to behavioral health and medical care are effective strategies that can make an impact on adolescents across the state. Trauma screening by medical and behavioral health providers will provide opportunities for appropriate care. Prevention, treatment, harm reduction, and supportive recovery services are essential to reversing these trends and preventing increases in related health concerns and injuries.

Mental health disorders also have a serious impact on physical health and are associated with many chronic diseases, including diabetes, heart disease, and cancer. While as a society we are striving for mental health parity, much of the population is living with unrecognized mental health disorders. Even when mental illness is identified, it is frequently untreated or undertreated.

Among females, 81.6% reported that their mental health was “not good” on at least one day in the past month, compared to 57.5% of males. The prevalence among Whites (75.6%) was significantly higher than among Blacks (58.9%) and Hispanics (61.4%) (Figure 86).

Figure 86: Percentage of High School Students Who Reported their Mental Health Was Not Good, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

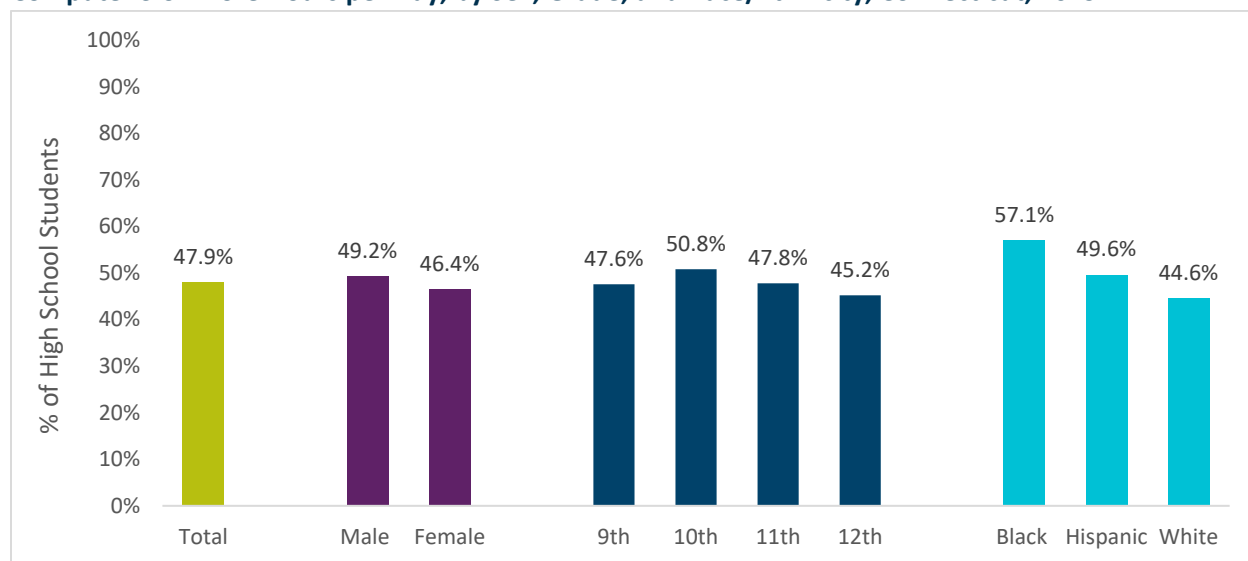
Note: “Not Good” includes stress, depression, and problems with emotion, on at least 1 day during the 30 days before the survey

Use of Screens and Electronic Devices

Almost half of all Connecticut high school students reported using a computer, smart phone, or gaming system for entertainment for more than three hours a day. Black students (57.1%) and Hispanic students (49.6%) had significantly higher prevalences than White students (44.6%) (Figure 87). Almost

one third of Connecticut high school students reported texting or emailing while driving in the past 30 days, and 37.0% reported talking on a cell phone while driving.

Figure 87: Percentage of High School Students Who Played Video or Computer Games or Used a Computer 3 or More Hours per Day, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

Note: Includes time spent on things such as Xbox, PlayStation, an iPad or other tablet, a smartphone, texting, YouTube, Instagram, Facebook, or other social media, for something that was not schoolwork, on an average school day

Substance Use

Use and misuse of illicit drugs, such as heroin, fentanyl and cocaine, prescription opioid medications and alcohol are major issues nationally and in Connecticut, although in recent years illicit drug use in youth grades 9 through 12 declined from 2013 through 2017 according to results from the Connecticut Youth Behavioral Health Survey. Addictions to drugs and alcohol are associated with overwhelming injury and death due to overdoses and intoxications, both unintentional (i.e. accidental) and intentional. Known risk factors for addiction are mental health disorders and exposure to childhood trauma.

Marijuana Use

In recent years, social attitudes toward personal marijuana use have changed considerably. Specifically, as of June 25, 2019:

- 11 states and the District of Columbia have legalized recreational use for adults;¹⁰⁴
- 15 other states, including Connecticut, have decriminalized its possession for personal use;¹⁰⁵ and
- 33 states and the District of Columbia (and Guam, Puerto Rico and US Virgin Islands) have legalized marijuana use for medical purposes.¹⁰⁶

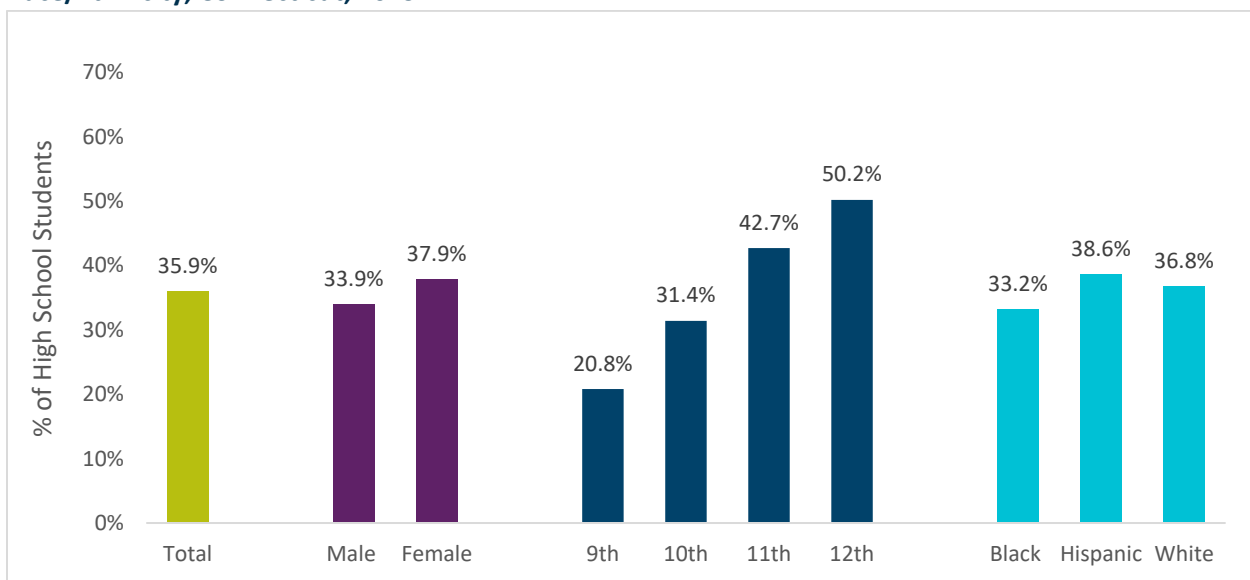
While there is increased acceptance for marijuana use, there is also scant data available on the effects of long-term use. Initial research indicates that marijuana use at an early age can have long-lasting health and well-being effects, such as difficulties with problem solving, memory and coordination, as well as an increased risk for mental health issues.¹⁰⁷ States are taking measures to prevent use among youth since

brain development continues through one’s mid-20s. For example, current marijuana legalization forums favor recreational marijuana legalization for only those 21 years and older to protect youth – who are at most risk for negative long-term effects.

Increased marijuana use among youth can be indicative of mental health stressors that are common at the intersection of youth and adulthood and indicate an increased likelihood of risky behaviors. Also, family, social networks, and peer pressure are key influencers of substance misuse among adolescents.

In 2019, 35.9% of high school students reported using marijuana ever in their lives, with over 50% of high school seniors reporting use (Figure 88). Prevalence between males and females, and between Blacks, Hispanics, and Whites are approximately the same.

Figure 88: Percentage of High School Students Who Ever Used Marijuana, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

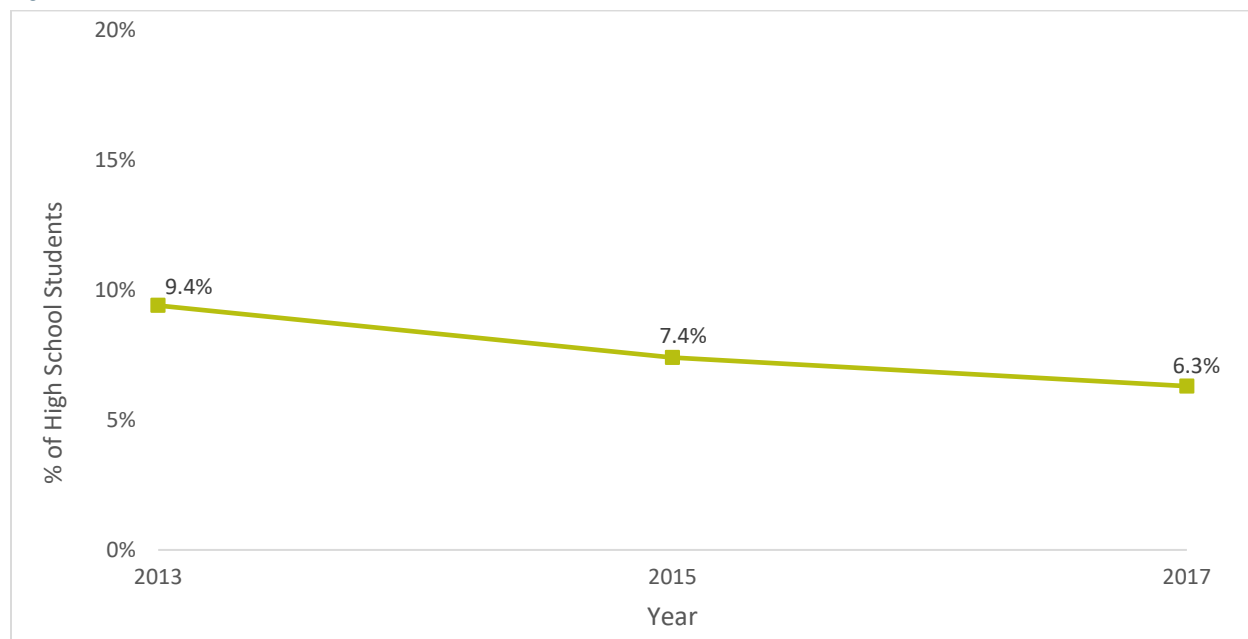
Illicit Drug Use

Substance use and misuse exerts a significant toll on health, safety, quality of life, families, and communities, and contributes to crime, incarceration, family violence, and unintentional injuries. Illicit (i.e. illegal) drug use costs the U.S. \$161 billion annually.¹⁰⁸ Illicit drug use other than marijuana use includes the misuse of prescription psychotherapeutics and the use of cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.¹⁰⁹

Early aggressive behavior, lack of parental supervision, academic problems, undiagnosed mental health problems, peer substance use, drug availability, poverty, peer rejection, and child abuse or neglect are risk factors associated with increased likelihood of youth substance use and misuse. Risk factors that occur during early childhood further increase the risk of youth substance misuse. Risk factors of prolonged duration (e.g., those that continue on from childhood through adolescence), are also associated with increased likelihood of youth substance misuse. Risk factors frequently associated with substance misuse are common across multiple disorders.¹¹⁰

Illicit drug use among Connecticut high school youth has declined in recent years, from just under one in ten youth in 2013 to just under one in 15 youth in 2017 (Figure 89).

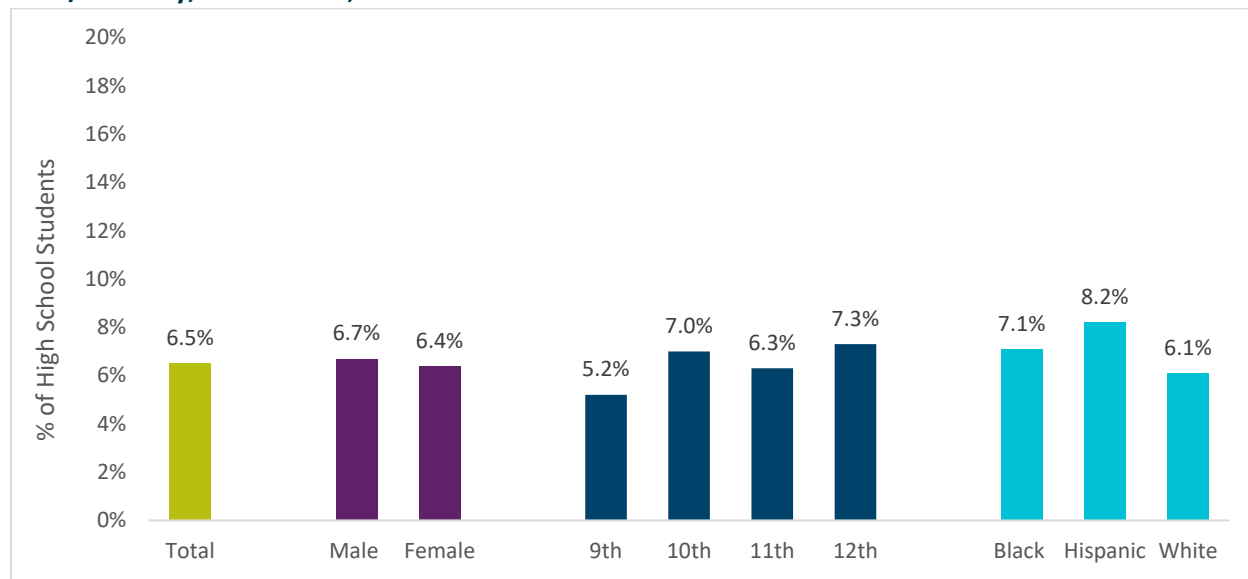
Figure 89: Percent of Youth, Grades 9 Through 12, Who Ever Used Illicit Drugs, Connecticut, 2013 - 2017



Data Source: Connecticut Youth Risk Behavior Survey, 2013-2017

Overall, 6.5% of high school students reported ever using “synthetic marijuana.” This is a concerning trend, given the danger of this particular drug, its lack of regulation, and its nebulous definition. As a relatively new illicit drug, more education should be focused on teens to warn them of the dangers.

Figure 90: Percentage of High School Students Who Ever Used Synthetic Marijuana, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

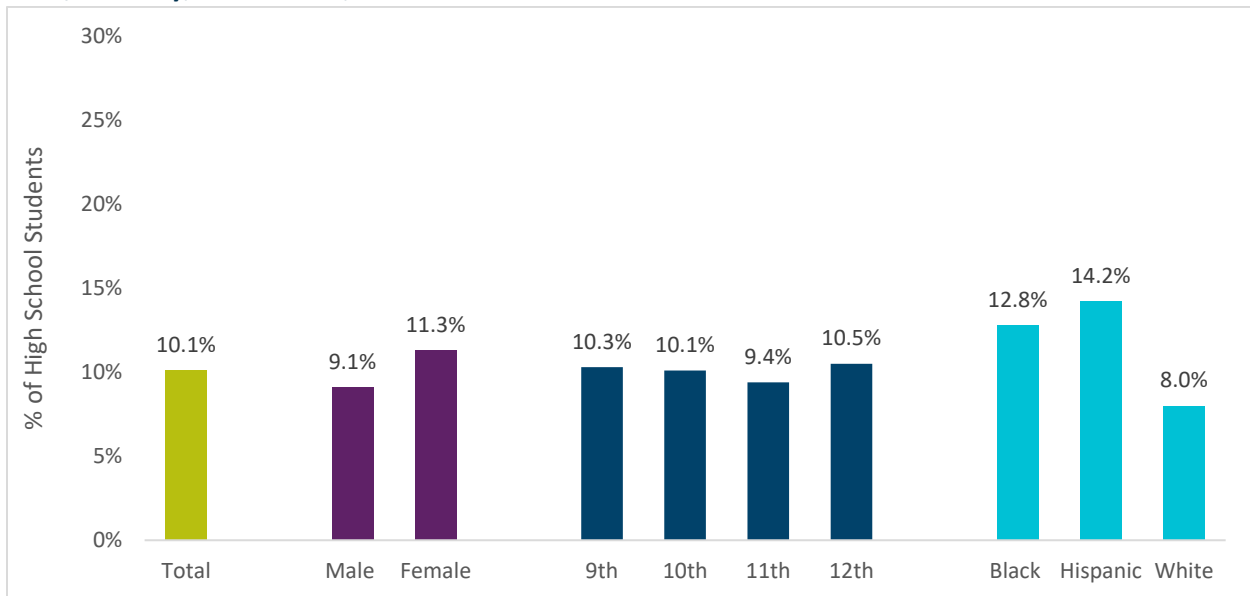
Prescription Drug Misuse

*Drug overdose deaths in the United States have more than quadrupled from 1999 to 2017.*¹¹¹ The current epidemic of drug overdoses began in the 1990s, driven by increasing deaths from prescription opioids that paralleled a dramatic increase in the prescribing of such drugs for chronic pain. In 2008, the number of deaths involving prescription opioids exceeded the number of deaths from heroin and cocaine combined. Since 2010, however, the U.S. has also seen sharp increases in deaths from heroin, synthetic opioids such as fentanyl, cocaine, and methamphetamine. In addition to deaths, overdoses from drugs, both prescription and illicit, are responsible for parallel increasing trends in nonfatal emergency department and hospital admissions.

Connecticut is among the top ten states with the highest rates of opioid-related overdose deaths. From 1999 through 2012, the death rate in Connecticut hovered near the national average. Through 2016, a more than fourfold increase was seen—from 5.7 deaths per 100,000 persons to 24.5 deaths per 100,000 persons. The national average in 2016 was 13.3 deaths per 100,000 persons.¹¹² Use of opioids among children and youth is much less common, though prescribing practices are still worrisome.¹¹³ In Connecticut, just over 10% of high school students reported ever taking a prescription pain medicine without a doctor’s prescription or taking it differently than how a doctor told them to use it (Figure 91). Prevalence for inappropriate use of a prescription pain medicine was highest for non-Hispanic Black youth (11.3% compared to 10.1% for the total youth population surveyed), and among students in 12th grade (15.1%), followed by students in 11th grade (11.1%).

Over 10% of high school students reported taking prescription pain medication for non-medical reasons. Prevalence was highest among Hispanics (14.2%) and lowest among Whites (8.0%). Prevalence was notably consistent across grade levels.

Figure 91: Percentage of High School Students Who Ever Took Prescription Pain Medicine without a Doctor’s Prescription or Differently than How a Doctor Told them to Use It, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut Youth Health Survey, 2019

Program Spotlight: Search Institute’s 40 Developmental Assets Initiative

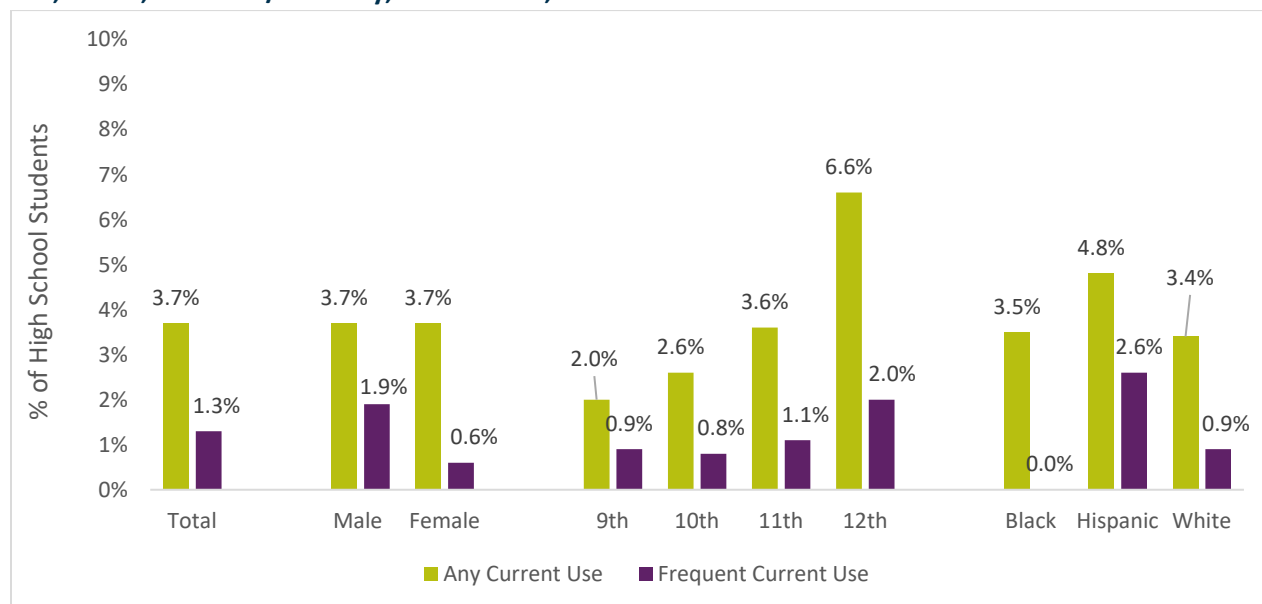
- The Development Assets® Framework identifies 40 positive supports and strengths that young people need to succeed. These assets focus on the relationships and opportunities youth need in their families, schools, and communities (external assets) and the social-emotional strengths, values, and commitments that are nurtured within young people (internal assets).
- Located in Guilford, Southington, and Middletown, Connecticut
- Example approaches:
 - Developmental Assets for Youth (DAY) of Guilford – A community coalition comprised of volunteers from the Guilford community (e.g., parents, youth, community leaders, law enforcement, and other sectors). DAY works to reduce high-risk behaviors such as underage drinking and other illicit youth substance use, and provides youth with the opportunities, skills, and values they need to grow into healthy, caring, and responsible adults.
 - Southington’s Town-wide Effort to Promote Success (STEPS) – Focuses on underage drinking, tobacco, marijuana, and prescription drug use prevention. Also, the organization follows the Search Institute’s 40 Developmental Asset Model for youth.

For more information, see: <https://www.search-institute.org/our-research/developmental-assets/developmental-assets-framework/>

Nicotine Use

Only 3.7% of Connecticut high school students currently smoke cigarettes and only 1.3% report frequent use (Figure 92).

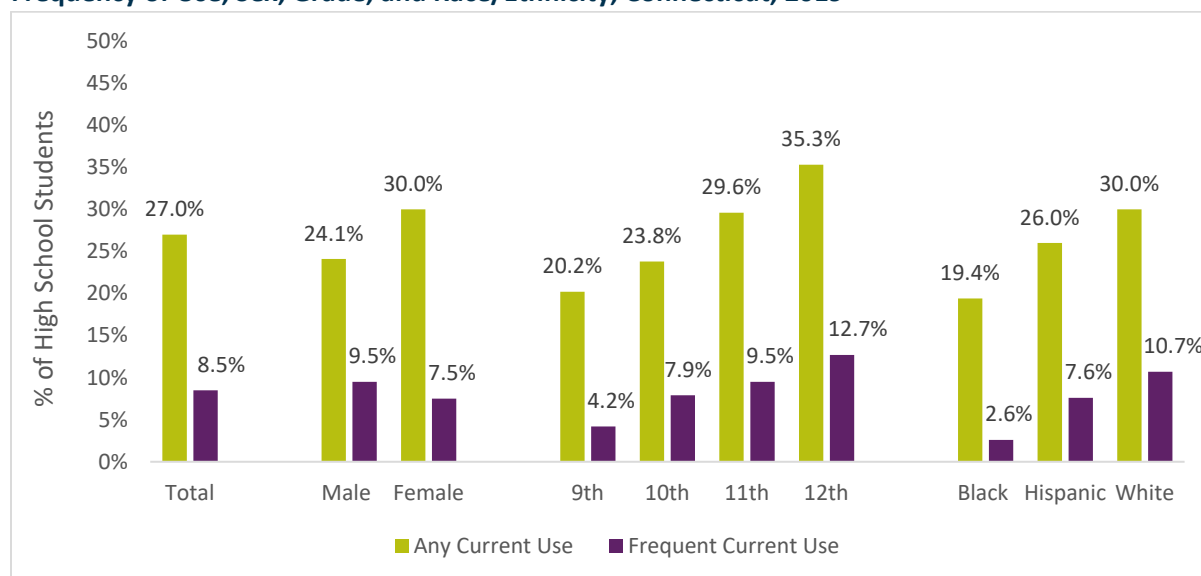
Figure 92: Percentage of High School Students Who Currently Smoked Cigarettes, by Frequency of Use, Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

In contrast, 44.8% report ever using an electronic vaping product, 27.0% report current use (Figure 93), and 8.5% report frequent use (Figure 93).

Figure 93: Percentage of High School Students Who Currently Used an Electronic Vapor Product, by Frequency of Use, Sex, Grade, and Race/Ethnicity, Connecticut, 2019

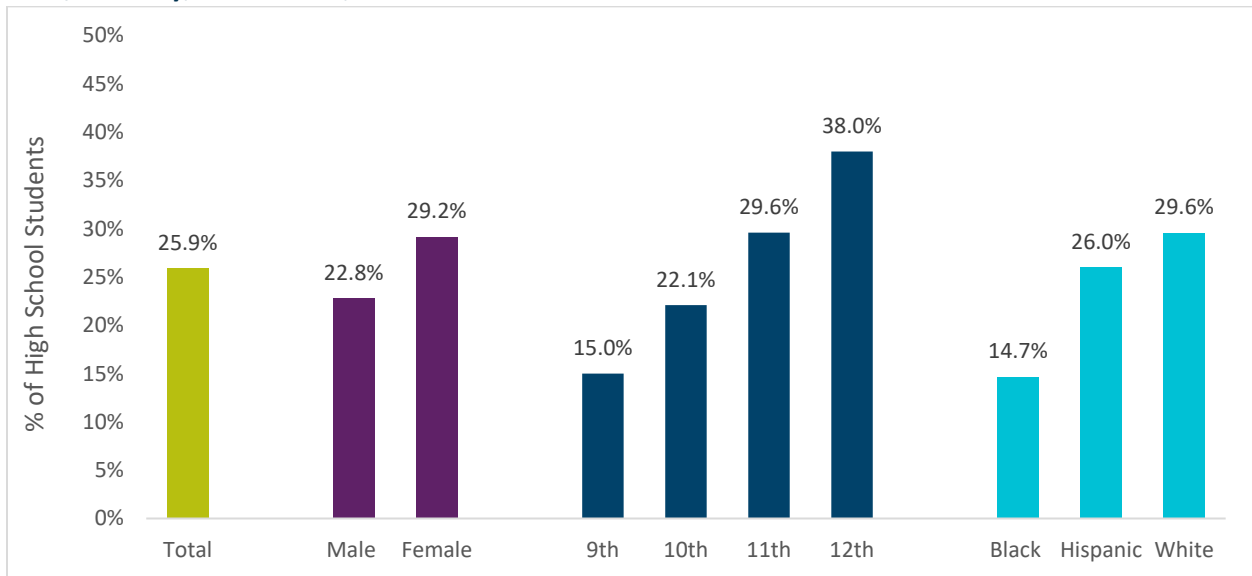


Data Source: Connecticut School Health Survey, 2019

Alcohol Use

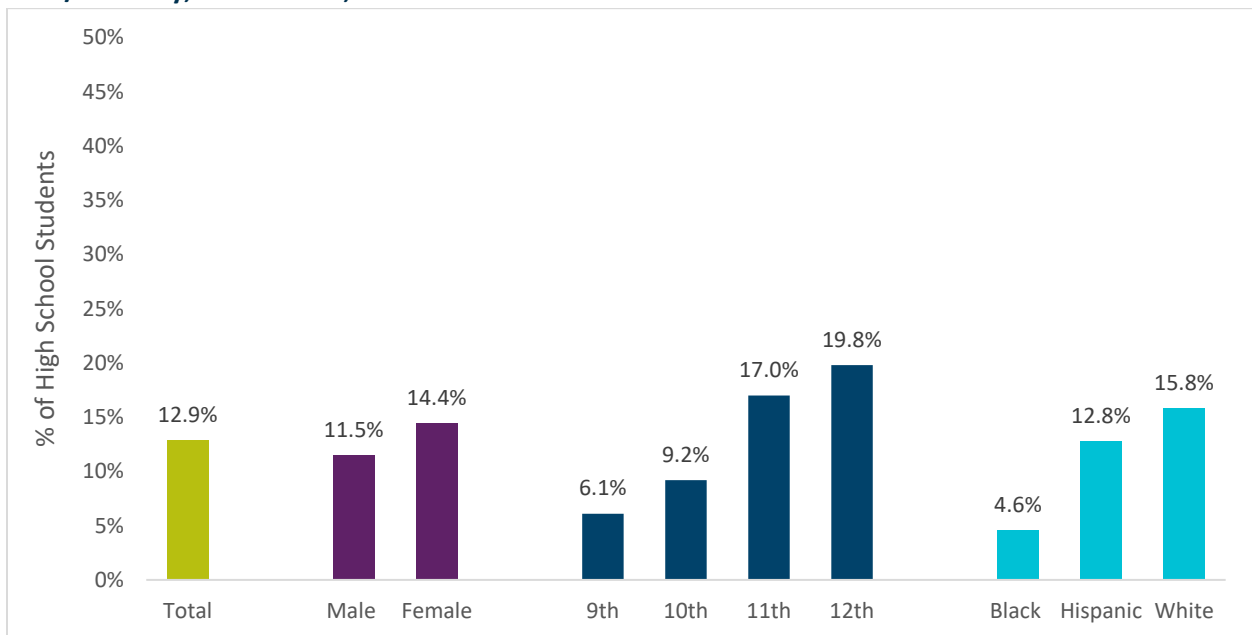
Among high school students in Connecticut in 2019, about one quarter report currently drinking alcohol. Fewer males (22.8%) report drinking than females (29.2%), and fewer Black students (14.7%) drink than Hispanics (26.0%) or Whites (29.6%) (Figure 94). Similar patterns are seen for binge drinking, with an overall prevalence of 12.9% (Figure 95).

Figure 94: Percentage of High School Students Who Currently Drink Alcohol, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

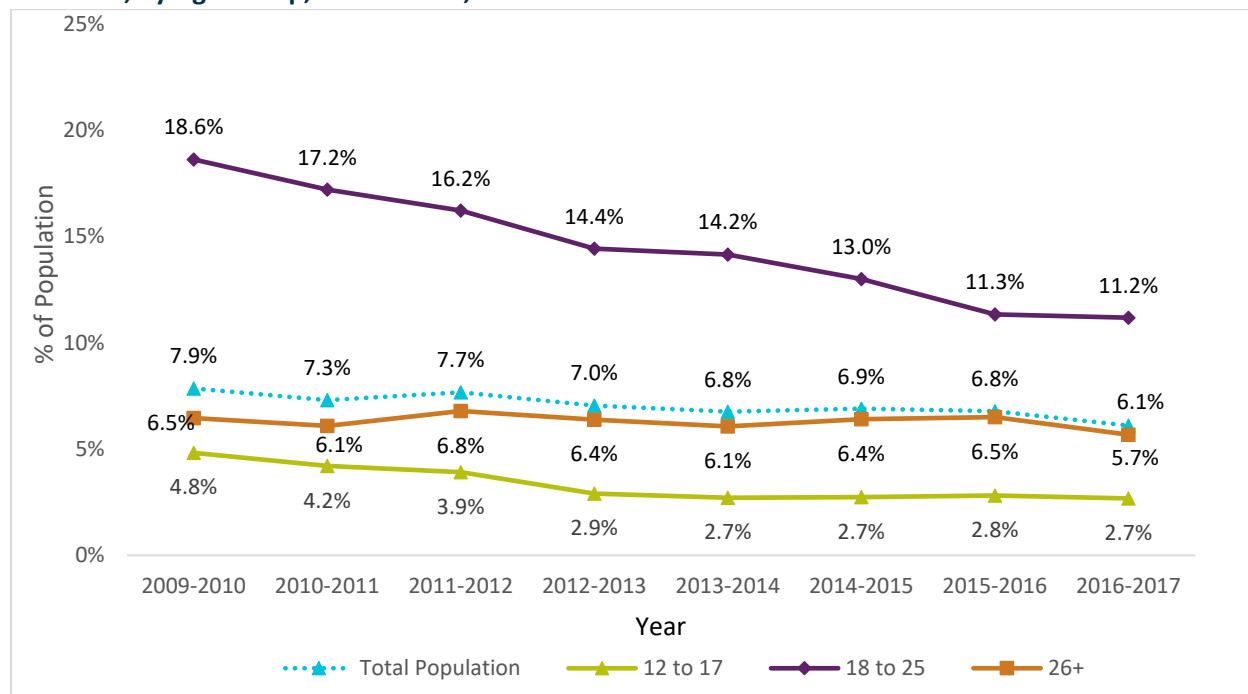
Figure 95: Percentage of High School Students Who Currently Were Binge Drinking, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

Past-year diagnosis with Alcohol Use Disorder (AUD) is consistently highest among 18-25 year-olds and lower among 12-17 and 26+ year-olds (Figure 96). Between 2009 and 2017, prevalence of AUD decreased among all of these age groups, most notably from 18.6% to 11.2% among 18-25-year-olds, and from 4.8% to 2.7% among 12-17-year-olds.

Figure 96: Percent of People Ages 12 and over Who Were Diagnosed with Alcohol Use Disorder in the Past Year, by Age Group, Connecticut, 2009 – 2010 to 2016 - 2017



Data Source: National Survey on Drug Use and Health, 2009-2010 to 2016-2017

Youth alcohol prevention is critical, as young people who start drinking alcohol before age 15 are five times more likely to develop alcohol misuse or dependence than people who first used alcohol at age 21 or older.¹¹⁴ Compared with adults, adolescent drinkers tend to consume higher quantities of alcohol per occasion but drink less frequently.¹¹⁵ Underage drinkers ages 12 to 20 typically consume four to five drinks per drinking occasion, which is nearly double the average two to three drinks usually consumed by adults (older than age 25). Prevalence rates for a variety of drinking-related outcomes peak in the early 20s age group.

Social supports, such as close relationships with parents and positive peer influence, can help decrease the risk of alcohol misuse. Parents and older siblings who drink can set the stage for the drinking habits of children. Also, early-childhood trauma is strongly associated with developing mental health problems, including alcohol dependence, later in life. People with early-life trauma may use alcohol to help cope with trauma-related symptoms.¹¹⁶

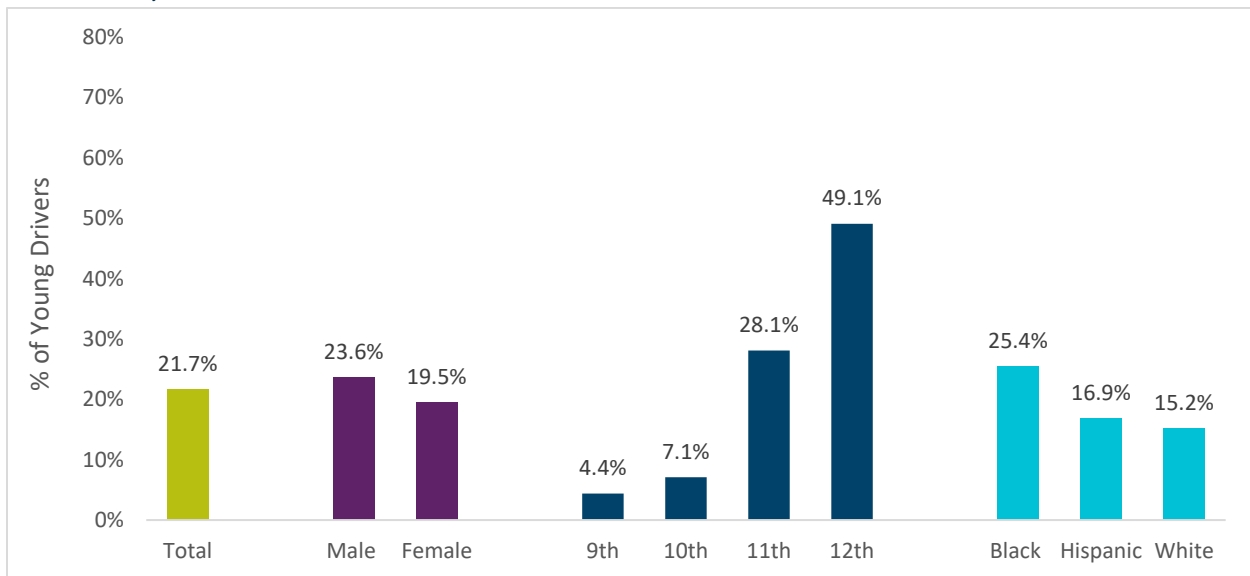
Driving Under the Influence

Drunk driving laws make it illegal nationwide to drive with a blood alcohol concentration (BAC) at or above 0.08%. For people under 21, “zero tolerance” laws make it illegal to drive with any measurable amount of alcohol in their system. Across the country, motor vehicle traffic crashes were the leading cause of death for teens, and about a quarter of those crashes involved an underage drinking driver. In

2017, young drivers, 16 to 24 years old, made up 42 percent of drivers involved in fatal drunk-driving crashes. Interactions between alcohol and other substances in the body, such as certain medications or illegal drugs increase impairment and make driving riskier.¹¹⁷ Thanks to dedicated efforts, rates of drunk driving and alcohol-involved fatal crashes have gone down in recent years; however, about one in three traffic deaths in the U.S. still involve a drunk driver.¹¹⁷

Approximately 6% of Connecticut’s young drivers through grade 12 reported driving a motor vehicle in the past 30 days when they had been drinking alcohol.¹¹⁸ One in three of Connecticut’s high school-aged young drivers reported texting on a cell phone while driving in the past 30 days.¹¹⁸ Just over one in five young drivers up through 12th grade engaged in unsafe driving in the past 30 days (including drunk driving or using a cell phone while driving) (Figure 97). The prevalence was slightly higher for males and non-Hispanic White youth. Prevalence increased with each grade level as well, up to 49% of 12th graders. As a note, caution should be exercised when interpreting the estimates in Figure 97 due to low statistical validity.

Figure 97: Prevalence of Young Drivers through Grade 12 Who Engaged in Unsafe Driving in the Past 30 Days, Including Drunk Driving, or Using a Cellphone While Driving, by Sex, Race/Ethnicity, Grade, Connecticut, 2017



Date Source: Connecticut School Health Survey, 2017

** Caution should be exercised when interpreting these estimates due to low statistical validity*

Motor Vehicle Injuries

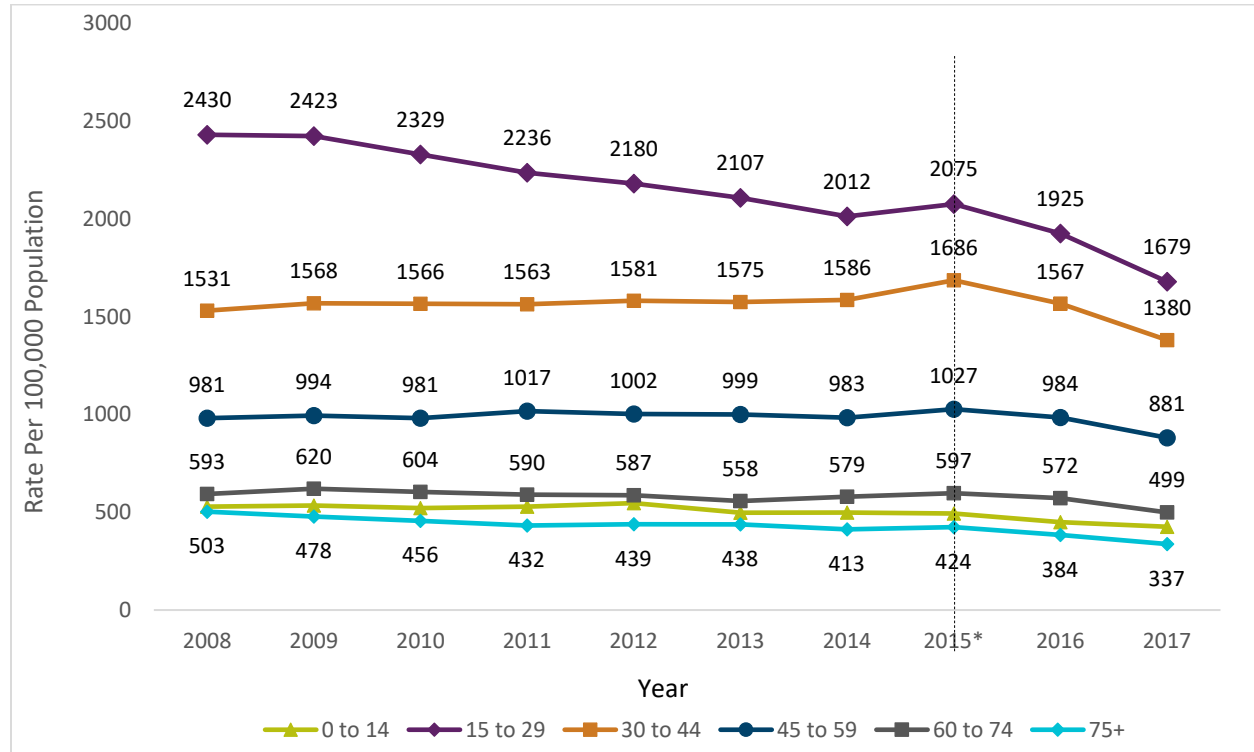
In the US, unintentional injury is the leading cause of nonfatal injury for all age groups, as well as the leading cause of death for individuals ages 1 to 44.¹¹⁹ Unintentional injuries are defined as injuries that occur without intent of harm or death, and often occur via unplanned events that include falls, motor vehicle crashes, concussions or traumatic brain injury, drug overdose, and poisoning.

Over the last decade, comprehensive graduated drivers’ license laws for new drivers went into effect, resulting in the downtrend trend in Motor Vehicle Traffic (MVT)-related injuries and deaths for youth and young adults 15 to 19 years of age.

Persons age 15 to 29 years had the highest rates of nonfatal motor vehicle traffic-related ED visits and hospitalizations per 100,000 population, followed by residents aged 30 to 44 years and 45 to 59 years (Figure 98). Adults aged 75 years and older, children aged 0 to 14 years, and adults aged 60 to 74 years had similarly lower rates. No health disparities were seen by sex and the trends were that they follow the similar trend over time (data not shown).

Persons aged 15 to 34 years had the highest numbers and rates of motor vehicle traffic-related traumatic brain injuries and concussions per 100,000 population (data not shown).

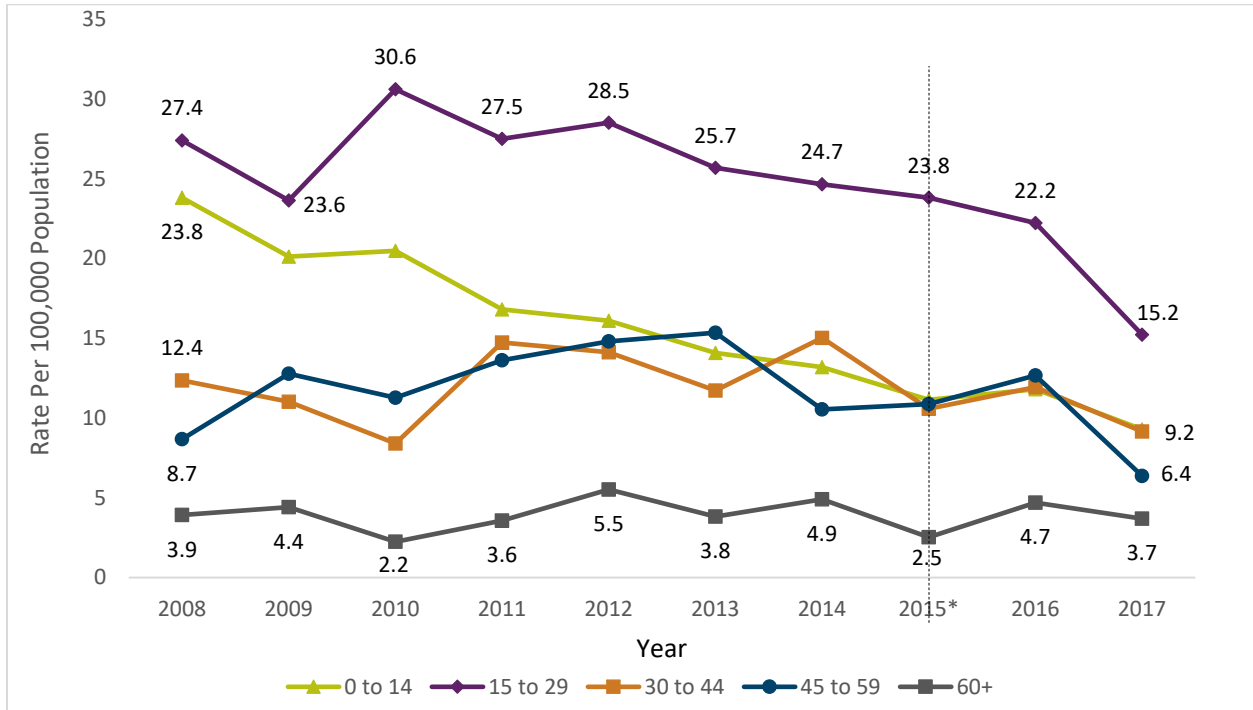
Figure 98: Rate of Nonfatal Motor Vehicle Traffic-Related Emergency Department Visits and Hospitalizations per 100,000 Population, by Age Group, Connecticut, 2008 - 2017



Data Source: Connecticut Inpatient Hospitalization and Emergency Department Visit Dataset, 2008-2017. *The vertical line is the break line where the diagnosis codes were converted from ICD9 to ICD10 (as of October 1, 2015).

Residents aged 15 to 29 years had the highest motor vehicle traffic –bicycle crash-related ED visits and hospitalizations (Figure 99). Overall, rates for all age groups decreased over the past decade as well, especially among the under-thirty-year-olds and children.

Figure 99: Rate of Nonfatal Motor Vehicle Traffic-Bicycle Crash-Related Emergency Department Visits and Hospitalizations per 100,000 Population, by Age Group, Connecticut, 2008 - 2017

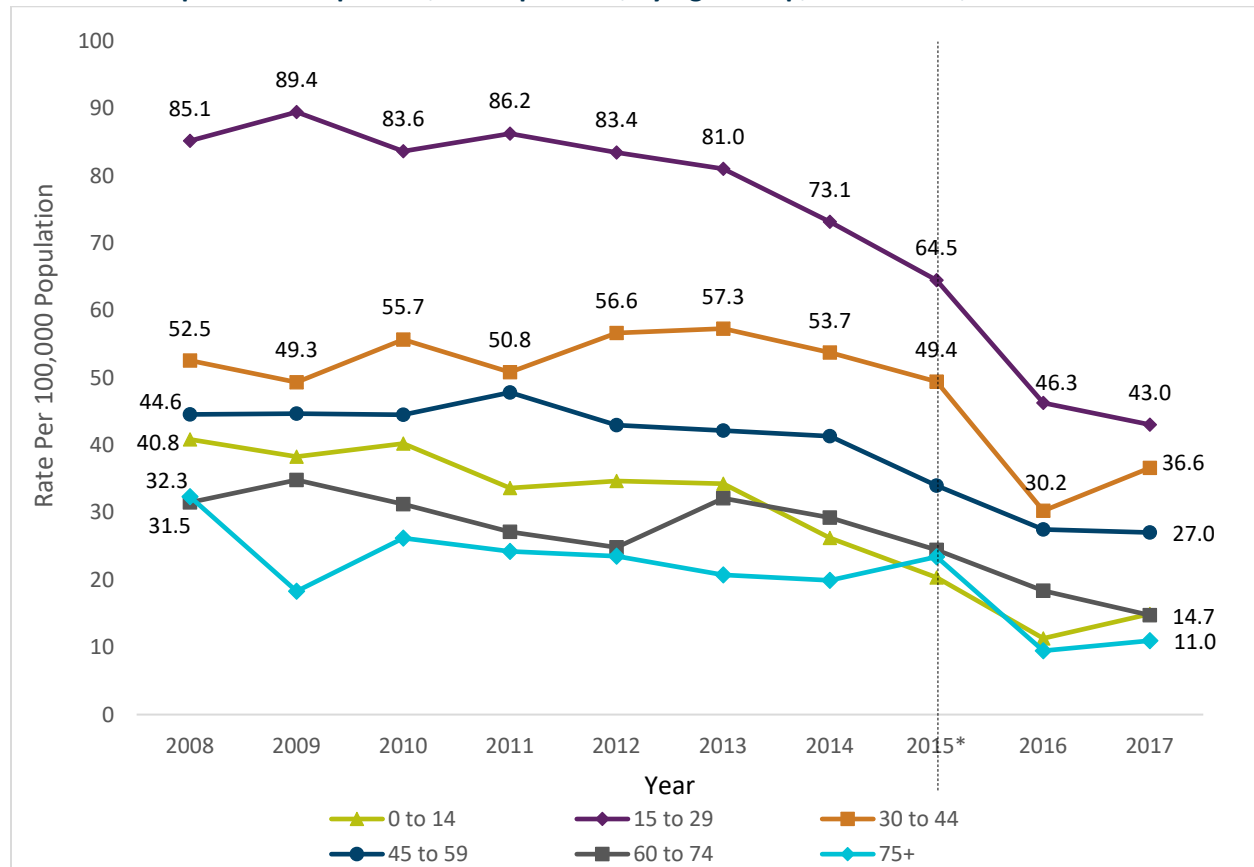


Data Source: Connecticut Inpatient Hospitalization and Emergency Department Visit Dataset, 2008 to 2017

*The vertical line is the break line where the diagnosis codes were converted from ICD9 to ICD10 (as of October 1, 2015).

Residents aged 15 to 29 years had the highest rates of nonfatal MVT-pedestrian crash-related hospitalizations per 100,000 population, with individuals 75 years of age and older having the lowest rates (Figure 100). Though trends need to be interpreted with caution due to the conversion from ICD9 to ICD10 coding, overall rates declined across all age groups.

Figure 100: Rate of Nonfatal Motor Vehicle Traffic-Pedestrian Crash-Related Emergency Department Visits and Hospitalizations per 100,000 Population, by Age Group, Connecticut, 2008 - 2017



Data Source: Connecticut Inpatient Hospitalization and Emergency Department Visit Dataset, 2008-2017

*The vertical line is the break line where the diagnosis codes were converted from ICD9 to ICD10 (as of October 1, 2015).

Bullying

Bullying is considered a traumatic event, and fighting may be considered either a traumatizing experience or a consequence/outcome of having repeated exposure to trauma.

Bullying also indicates disruption in the school setting that impacts school connectedness, which is an important protective factor for substance use, sexual behavior, mental health, and academic success. Aside from the immediate effects from the bullying event itself, young people who are bullied are more likely to experience negative physical, academic, and mental health issues such as:

- Depression and anxiety;
- Health complaints; and
- Decreased academic achievement and school participation.

In addition, young people who were bullied, either at school or electronically, may engage in risky behaviors into adulthood, including:

- Having multiple sexual partners;

- Having sex without a condom; and
- Using substances in a harmful way.

Young people who bully others can also engage in violent and other risky behaviors into adulthood. Specifically, they are more likely to:

- Use and misuse alcohol and other drugs in adolescence and as adults;
- Get into fights, vandalize property, and drop out of school;
- Engage in early sexual activity;
- Have criminal convictions and traffic citations as adults; and
- Be abusive toward their romantic partners, spouses, or children as adults.¹²⁰

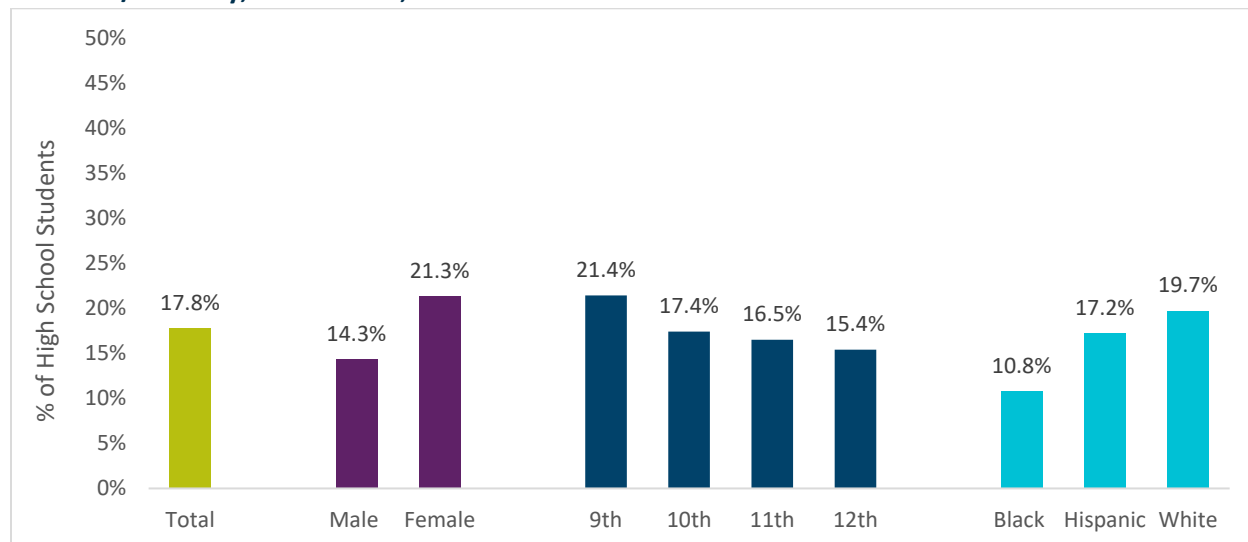
Students at the highest risk for mental health and behavior problems are those who are *both* targets *and* perpetrators of bullying behavior.¹²¹

In recent years, Connecticut females were more likely than Connecticut males to be bullied on school property. The percent of females who were bullied on school property has decreased in recent years, from 26.1% in 2013 to 20.8% in 2017, whereas the percent of males who were bullied on school property remained relatively stable between 2013 and 2017.

Black and Hispanic youth who are bullied are more likely to suffer academically than their white peers.¹²² In Connecticut, the percentage of Hispanic students who were bullied on school property steadily decreased in recent years, from 22.4% in 2013 to 14.5% in 2017. The percentage for White students decreased slightly but still remained high compared to the other two groups (21.8% in 2017). The percentage of bullying for Black students slightly increased between 2011 and 2017 to 16.2%.

In 2019, 21.3% of females and over 14% of males reported being bullied on school property in the past 12 months (Figure 101). Bullying was more common among younger students and among Hispanics and Whites, compared to Blacks.

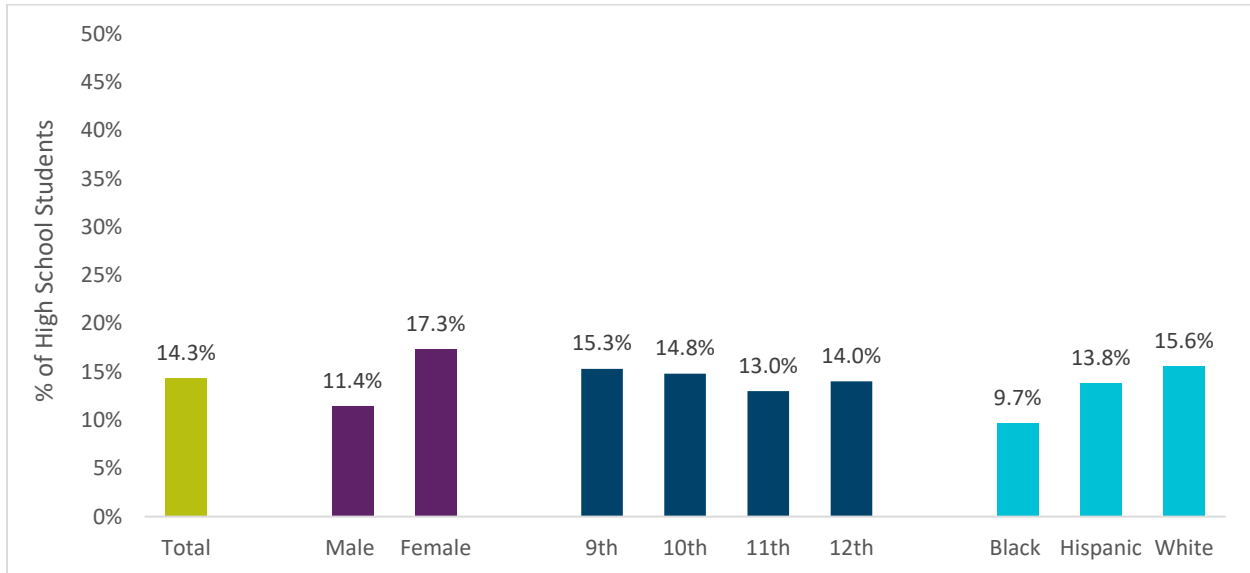
Figure 101: Percentage of High School Students Who Were Bullied on School Property, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

When it comes to electronic or cyberbullying, the percentage of females being cyberbullied is consistently higher than the percentage of males in recent years, and almost double the percentage of males being cyberbullied in 2017. For both males and females, the rates have remained relatively stable in recent years. Compared to bullying on school property, similar racial/ethnic and gender patterns existed for electronic bullying in 2019, with 17.3% of females and 11.4% of males reporting the experience in the past 12 months (Figure 102).

Figure 102: Percentage of High School Students Who Were Electronically Bullied, by Sex, Grade, and Race/Ethnicity, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

Cyberbullying, broken out by race/ethnicity, indicated that there was a steady decrease among Hispanic youth being cyberbullied and a steady increase in cyberbullying among Black youth in recent years. The percentage of White students being cyberbullied has remained relatively stable, but comparatively higher than the other two groups. In 2017, the percentage of youth who were cyberbullied was 18.3% among non-Hispanic Whites, 13.4% among non-Hispanic Blacks, and 12% among Hispanic residents.¹²³

Youth who identify as lesbian, gay, bisexual, transgender, or queer (LGBTQ) are more likely to be bullied, both on school property and electronically, when compared to students who identify as heterosexual (Figure 103). The percentage of LGBTQ youth who reported cyberbullying was almost double the percentage of heterosexual youth who reported cyberbullying, 26.9% versus 14.9%.

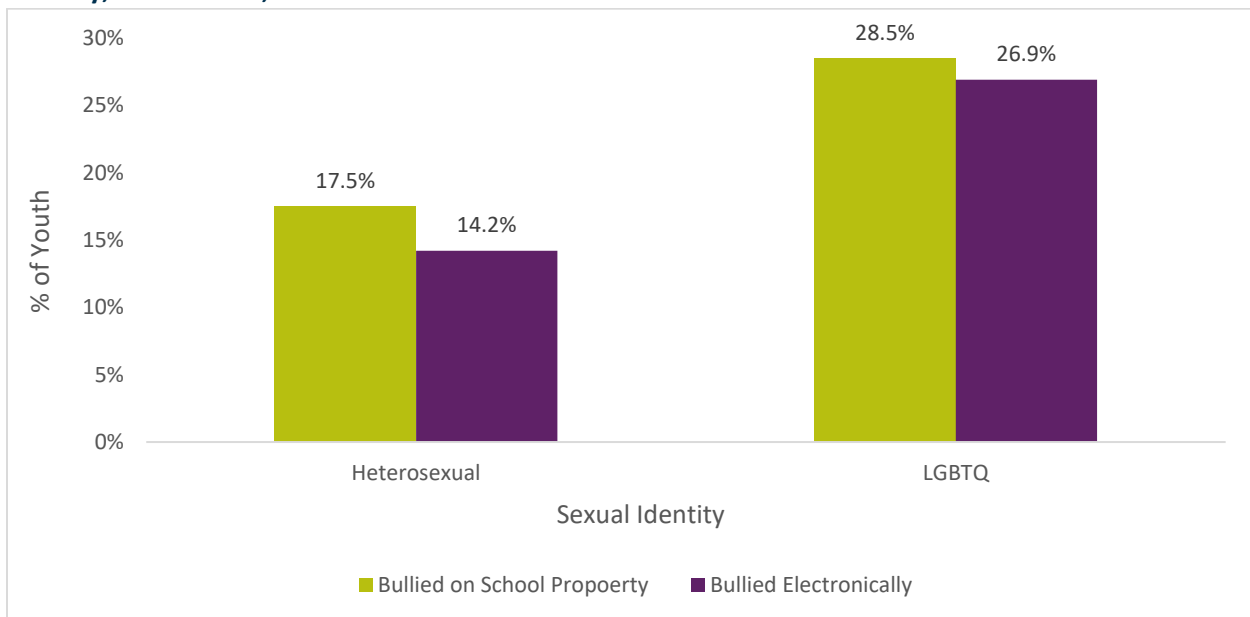
Population Spotlight: LGBTQ

In 2017, an estimated 5.4% of Connecticut residents self-identified as lesbian, gay, bisexual or transgender (LGBTQ).

- The racial/ethnic distribution of Connecticut LGBTQ residents' mirrors that of the state; 67% identify as White, 17% as Hispanic/Latino, 10% as Black/African American, and 7% as all other races.
- Connecticut LGBTQ individuals are younger on average than non-LGBTQ individuals (39.6 versus 48.8 years).
- 20% of Connecticut LGBTQ residents are raising children.
- Connecticut LGBTQ individuals are more likely to report being food insecure (22% versus 13% non-LGBTQ) and have an annual income under \$24,000 (22% versus 14% non-LGBTQ).
- In 2017, 28.5% of gay, lesbian, and bisexual high school students in Connecticut reported being bullied on school property compared to 18.9% of other students.
- Connecticut is among 13 states and the District of Columbia that have passed non-discrimination laws and statewide regulations to protect LGBTQ students.

Sources: Behavioral Risk Factor Surveillance Survey, 2017; Gallup Daily Tracking Survey, 2017; Connecticut High School Youth Risk Behavior Survey, 2017.

Figure 103: Percent of Youth Who Were Bullied on School Property or Electronically, by Sexual Identity, Connecticut, 2017



Data Source: Youth Risk Behavior Survey, 2017

Approach Spotlight: State and Local Efforts to Address Bullying

The Sandy Hook Elementary School mass shooting in Newtown, Connecticut has prompted a galvanized legislature and community focusing on prevention and precipitants to school shootings which includes bullying. Initiatives include:

- State legislation that provides statutory requirements for:
 - Teacher preparation around bullying prevention, identification, and response; and
 - Development of school climate assessments and safe school climate plans.
- Connecticut State Department of Education – Character Education: The Academic Office Bureau offers workshops, training and technical assistance to schools and other agencies working to prevent bullying. Also, parents with concerns and/or complaints about bullying in their child's school can contact the Bureau for information and guidance.
- Eyes on Bullying website, which provides:
 - Information, insights, strategies, activities, and resources that address bullying.
 - Information designed for caregivers and parents of preschool and school-age children and youth, and well suited for use in childcare programs, after school and youth programs, and camps.
 - Website: <http://eyesonbullying.org/>
- National Conference for Community and Justice Bridges/Anti-Bullying/Prejudice Reduction Program: A two-day anti-bullying and prejudice reduction program for middle and high school age youth where students begin to understand the origins of prejudice and recognize the harmful effects of stereotypes.

Physical and Sexual Violence

Sexual violence is defined as someone forcing another person he or she is dating or going out with to do sexual things they did not want to do (e.g., kissing, touching, or being physically forced to have sexual intercourse). Sexual violence has far-reaching effects on society and is a significant public health problem in Connecticut. Sexual violence causes immediate and long-term physical, social, and psychological consequences as well as additional negative health risk behaviors.¹²⁴ Nationally, compared to adult men and women who had not experienced sexual violence, those who had were:

- More likely to experience poor physical health, and
- Over two times more likely to experience poor mental health in their lifetimes.¹²⁵

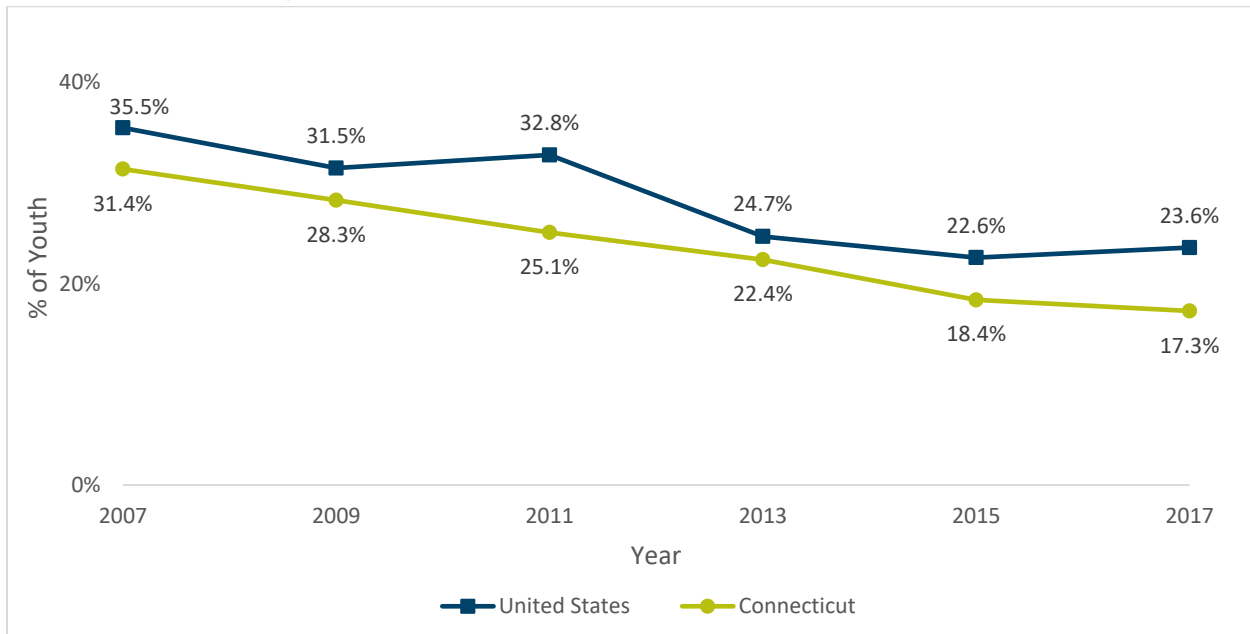
In addition, rape is one of the costliest crimes; it is estimated that each rape costs the victim an average of \$122,461, including medical, mental health, loss of productivity, and pain and suffering costs.¹²⁶

Sexual violence disproportionately affects youth, and those who experience sexual violence as a youth are more likely to become victims again in adulthood. Nationally, more than 40% of female victims of rape experienced it first when they were 17 years old or younger, and nearly one in three of all victims experienced it first when they were between the ages of 11 and 17. Nearly one in four male victims of sexual violence also first experienced it when they were 17 years of age or younger.¹²⁷ In Connecticut, compared to high school students who had not experienced sexual violence, students who had experienced sexual violence in a dating relationship (i.e. “sexual dating violence”) were:

- Three times more likely to use prescription drugs to get high,
- Three times more likely to miss school, and
- Two times more likely to seriously consider suicide.¹²⁸

The percent of students in Connecticut and the US overall who were in a physical fight once or more during the 12 months prior trended down in the last decade (Figure 104). Connecticut’s rate is consistently below that of the nation overall.

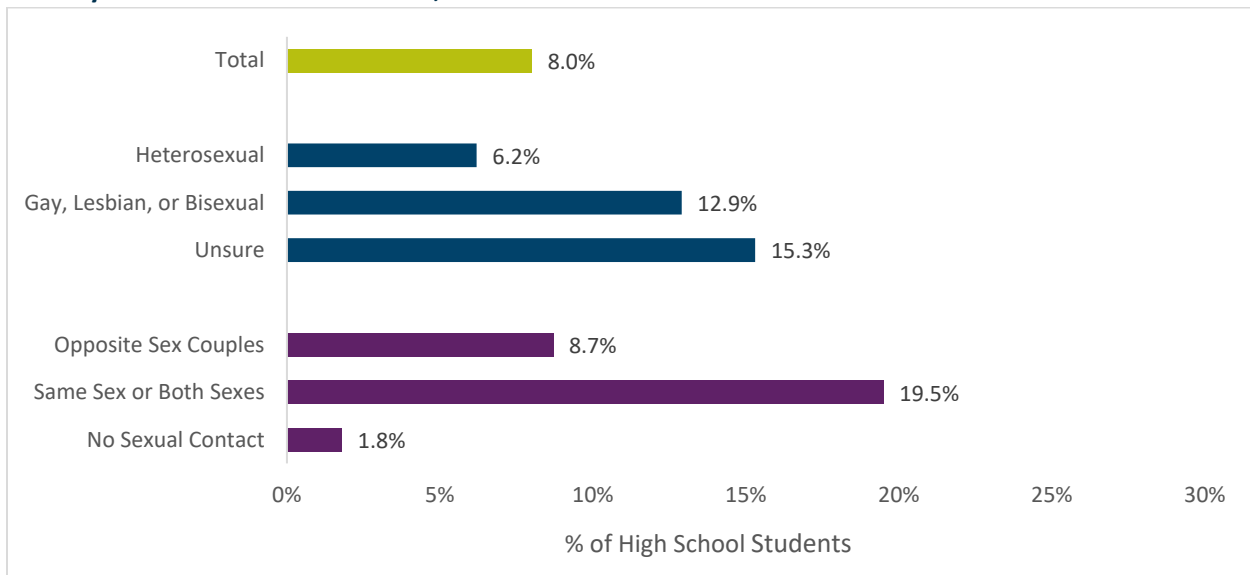
Figure 104: Percent of Youth Who Were in a Physical Fight during the Previous 12 Months, United States and Connecticut, 2007 -2017



Data Source: Connecticut School Health Survey, 2007 - 2017

In the 2019 Connecticut School Health Survey, physical dating violence is defined as “being physically hurt on purpose by someone they were dating or going out with [counting such things as being hit, slammed into something, or injured with an object or weapon] one or more times during the 12 months before the survey, among students who dated or went out with someone during the 12 months before the survey.” Prevalence of physical violence was 8.7% among students who reported only opposite sex partners, compared to 19.5% among students with partners of the same sex or both sexes (Figure 105).

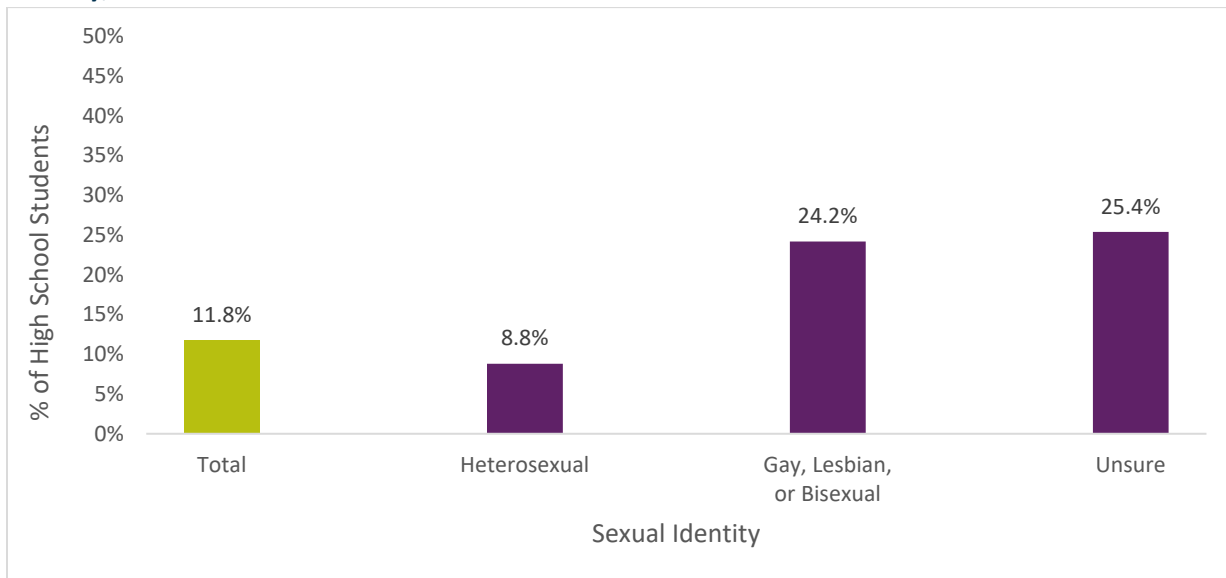
Figure 105: Percentage of High School Students Who Experienced Physical Dating Violence, by Sexual Identity and Sex of Sexual Contacts, 2019



Data Source: Connecticut School Health Survey, 2019

The survey defines sexual dating violence as “being forced by someone they were dating or going out with to do sexual things [counting such things as kissing, touching, or being physically forced to have sexual intercourse] that they did not want to, one or more times during the 12 months before the survey, among students who dated or went out with someone during the 12 months before the survey.” Prevalence of sexual dating violence varied dramatically among high school students, with 8.8% of heterosexual students reporting it, compared to 24.2% of those identified as being gay/lesbian/bisexual, and 25.4% of those “unsure” of their sexual identity (Figure 106).

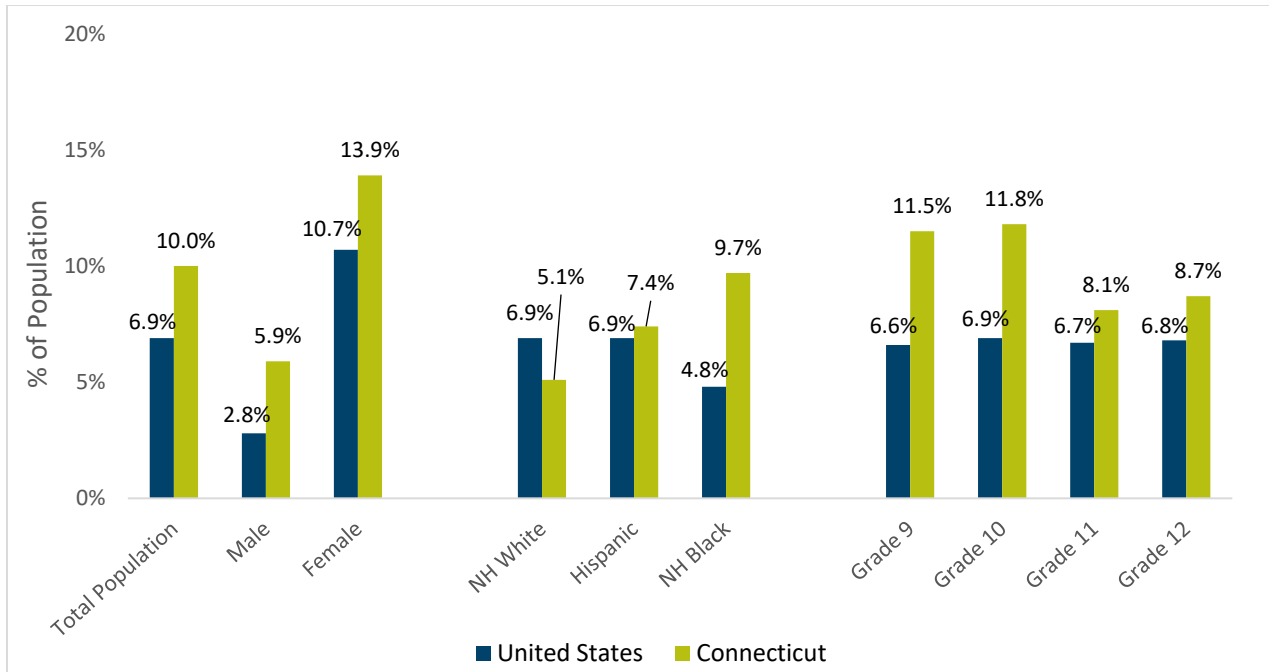
Figure 106: Percentage of High School Students Who Experienced Sexual Dating Violence by Sexual Identity, 2019



Data Source: Connecticut School Health Survey, 2019

Among Connecticut high school students, 7.5% report being forced to have sexual intercourse in their lifetimes, and one in ten reported experiencing sexual dating violence in the past 12 months (Figure 107). Notably, when we look at the percentage of high school students who experienced sexual dating violence in Connecticut versus the US overall, we see that Connecticut’s percentages exceeded the national percentages overall, as well as across all gender, race/ethnicity, and high school grade level categories. When looking at high school students in Connecticut specifically, we see that females, non-Hispanic Black and Hispanic/Latino students, and those in the 9th and 10th grades had the highest percentages of students who experienced sexual dating violence, when compared to males, non-Hispanic White students, and those in upper grade levels.

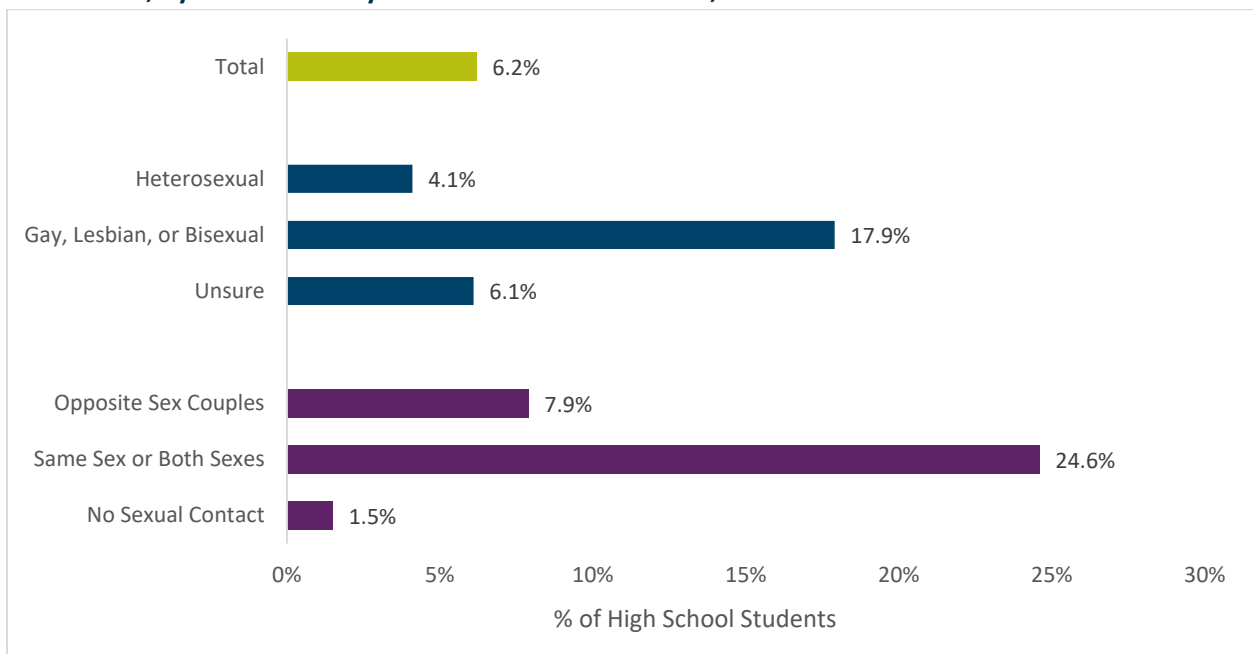
Figure 107: Percent of High School Students Who Experienced Sexual Violence within a Dating Relationship in the Last Year, by Sex, Race/Ethnicity and Grade, United States and Connecticut, 2011 - 2017



Data Source: Connecticut School Health Survey, 2011-2017

Similarly, 4.1% of heterosexual students reported ever being physically forced to have sexual intercourse, compared to 17.9% of gay/lesbian/bisexual students, and 6.1% of those unsure of their identity (Figure 108).

Figure 108: Percentage of High School Students Who Were Ever Physically Forced to Have Sexual Intercourse, by Sexual Identity and Sex of Sexual Contacts, 2019



Data Source: Connecticut School Health Survey, 2019

Resource Spotlight: Intimate Partner Violence Specialists

Connecticut's Department of Children and Families assigned regional Intimate Partner Violence (IPV) Specialists to provide consultation, support, leadership, and coordination to improve outcomes for children and families impacted by domestic violence. The IPV Specialists:

- **Utilize a family, strength-based approach** that integrates non-clinical and clinical approaches to support child protection practice and service provision and coordination. This approach focuses heavily on supporting frontline workers with specific cases and in some instances, includes direct consultation with families.
- **Offer guidance to social workers**, especially as it pertains to information and resources that can help the entire family system.
- **Promote systems change**. The positions focus heavily on education and training both within the agency and in the community.

Please see the link for more details which are available in CT.gov portal:

<https://portal.ct.gov/DCF/Intimate-Partner-Violence/Home>

To address sexual violence among young people in Connecticut, CT DPH, the Connecticut Alliance to End Sexual Violence (The Alliance), and The Alliance's nine rape crisis centers developed a State Action Plan that prioritized the following strategies:

- **Sexual violence training in K-12 schools:** Connecticut passed legislation (Public Act 14-196) requiring schools to implement sexual violence awareness and prevention training in K-12 schools statewide beginning in October 2016. Through this legislation, the State Department of Education collaborated with The Alliance, the CT DPH, and other stakeholders to develop a framework for sexual violence awareness and prevention in K-12 schools. The group is currently working on a strengths and needs assessment of these awareness and prevention efforts in Connecticut schools, and will be developing a toolkit accordingly.
- **Addressing sexual violence in athletic environments:** CT DPH and The Alliance collaborate with the Connecticut Interscholastic Athletic Conference (CIAC) to create protective environments for student athletes through a pro-social media campaign and trainings for athletes, coaches and administrative staff. The collaboration helps athletic clubs to develop best practices and policies for sexual violence response and prevention. The collaboration also focuses efforts on empowering girls through sports and leadership activities.
- **Sexual violence Youth Participatory Action Research (YPAR):** CT DPH and The Alliance selected sexual assault crisis services centers and community-based organizations that work with underserved youth (i.e., youth with intellectual disabilities or LGBTQ youth) to complete community-based Youth Participatory Action Research (YPAR) around the topic of sexual violence in Connecticut in March 2019. YPAR has four major tenants that include shared authority, inclusion, knowledge legitimacy, and being a vehicle for social change. These principles make YPAR a unique opportunity for engaging youth in sexual violence prevention that is both led by youth and that can create sustainable organizational changes.

Sexual Violence Disproportionately Affects Priority Populations

While sexual violence does not discriminate, it does disproportionately affect populations that face additional challenges, such as lack of financial resources, those in marginalized communities, and racial and ethnic minorities. Specifically, those disproportionately affected include:

- **Racial and ethnic minorities:** Nationally, nearly half of multiracial women, over one third of Black women, and more than 1 in every 4 Hispanic women have experienced some form of contact sexual violence during their lifetime.
- **Those from low-income households:** Nationally, approximately 44% of victims of sexual violence report that their annual household income is less than \$25,000 (while only 22% of US citizens identify their household income is below \$25,000).
- **Those identifying as lesbian, gay, and bisexual:** Nationally, approximately 44% of lesbian women, and over 60% of bisexual women experienced rape, physical violence, and/or stalking by an intimate partner in their lifetime. Similarly, gay and bisexual men experience increased levels of sexual violence, with 1 in 4 gay men and more than 1 in 3 bisexual men having experienced rape, physical violence, and/or stalking by an intimate partner in their lifetime. Of transgender individuals, nearly 35% reported lifetime physical abuse by a partner and 64% reported experiencing sexual assault.
- **Youth:** As mentioned, sexual violence is common in youth, and those who experience it as a youth are more likely to become victims again in adulthood.

For these reasons, sexual violence prevention activities in Connecticut are focused around youth, unserved or underserved communities, and those at increased risk such as LGBTQ individuals. The Connecticut Department of Public Health will also continue to monitor data around sexual violence and health disparities in Connecticut to inform program activities and delivery.

Sources:

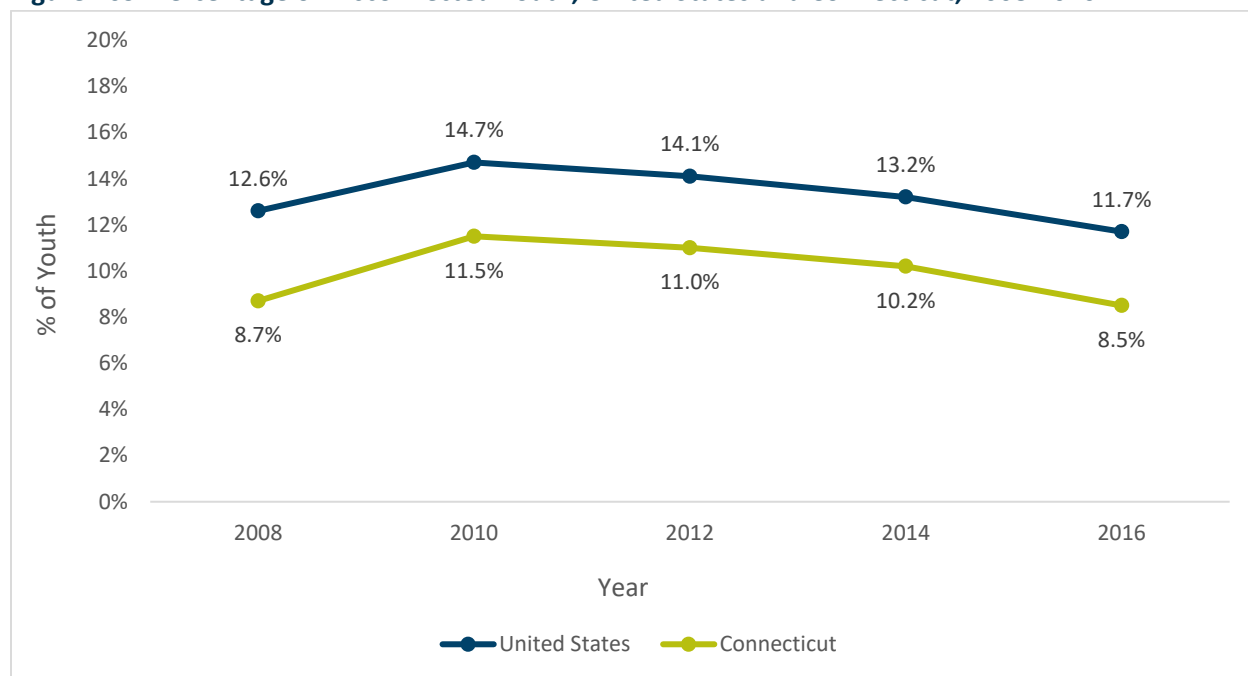
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Disconnected Youth

When young people ages 16-24 are neither working nor in school, they are considered “disconnected.”¹²⁹ When youth are disconnected, they are more likely to engage in risky behaviors that include violence and substance use, which increases the likelihood of adverse physical and mental health outcomes in a population that is still maturing cognitively.¹³⁰ As a measure of societal progress, this indicator is used to gauge how well young people fare as they transition to adulthood and are engaged with “the people, institutions and experiences that help them develop the knowledge skills, maturity, and sense of purpose required to live rewarding lives as adults.”¹³¹ Everyone who lives in Connecticut’s communities are all affected by the negative social and economic effects of disconnected youth.

In the US and in Connecticut, the disconnected youth rate peaked during the Great Recession of 2010 and has been in decline since (Figure 109); Connecticut has seen a decrease of 26% between 2010 and 2016. Although New England has the lowest disconnected youth rate regionally in the US¹²⁹ and Connecticut consistently experiences lower rates of disconnected youth than the Nation as does the rest of New England, it is important to note that nationally disconnected youth are three-times more likely to have some kind of disability and that the youth disconnection rate correlates strongly in areas with long work commutes.¹²⁹

Figure 109: Percentage of Disconnected Youth, United States and Connecticut, 2008-2016



Data Source: Lewis, Kristen. Making the Connection: Transportation and Youth Disconnection. New York: Measure of America, Social Science Research Council, 2019

Suicide

In 2016, suicide was the tenth leading cause of death overall in the US, claiming the lives of nearly 47,000 people.¹³² There were twice as many suicides nationally as there were homicides.¹³³

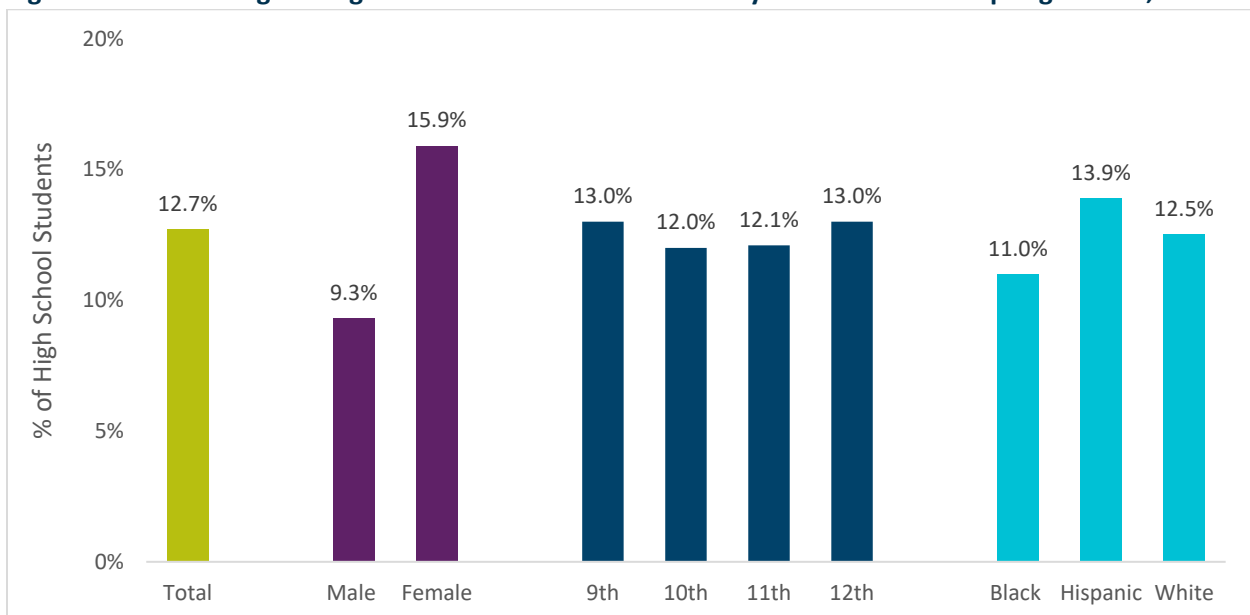
In Connecticut, suicides are a major cause of intentional injury death, with an average of 392 suicides per year. Between 2015 and 2017, among all violent deaths, 78% were due to suicide and 22% were due to homicides.¹³⁴ In 2016, 3.6% of adults age 18 and over actually attempted suicide in their lifetime.¹³⁵

A history of depression and other mental illnesses, hopelessness, substance abuse, certain health conditions, previous suicide attempts, violence victimization and perpetration, and genetic and biological determinants are some of the individual level determinants related to suicide ideation, attempt, and mortality.¹³⁵ Focusing prevention efforts on suicide ideation and attempts may assist in reducing the burden of suicide mortality.

Suicide attempts and self-harm-related emergency department visits and hospitalizations in 15 to 24-year-olds are seen to be decreasing over time, but the rates of younger teens ages 10 to 14-year-olds are rising. This is an area of particular concern. As with substance addictions and overdoses, mental health and trauma play a significant role in violence (assaults and homicide), suicide and self-harm.

Suicide contemplation among high school students fluctuated over the last decade from as high as 15.1% in 2005 to as low as 13.1% in 2007, without any notable trends in either direction between 2005 and 2017. Nationally, suicide contemplation by high school students in the last 12 months was 17.2%. By comparison, Connecticut is below the national average. In 2019 15.9% of females and 9.3% of males reported considering suicide in the past 12 months (Figure 110).

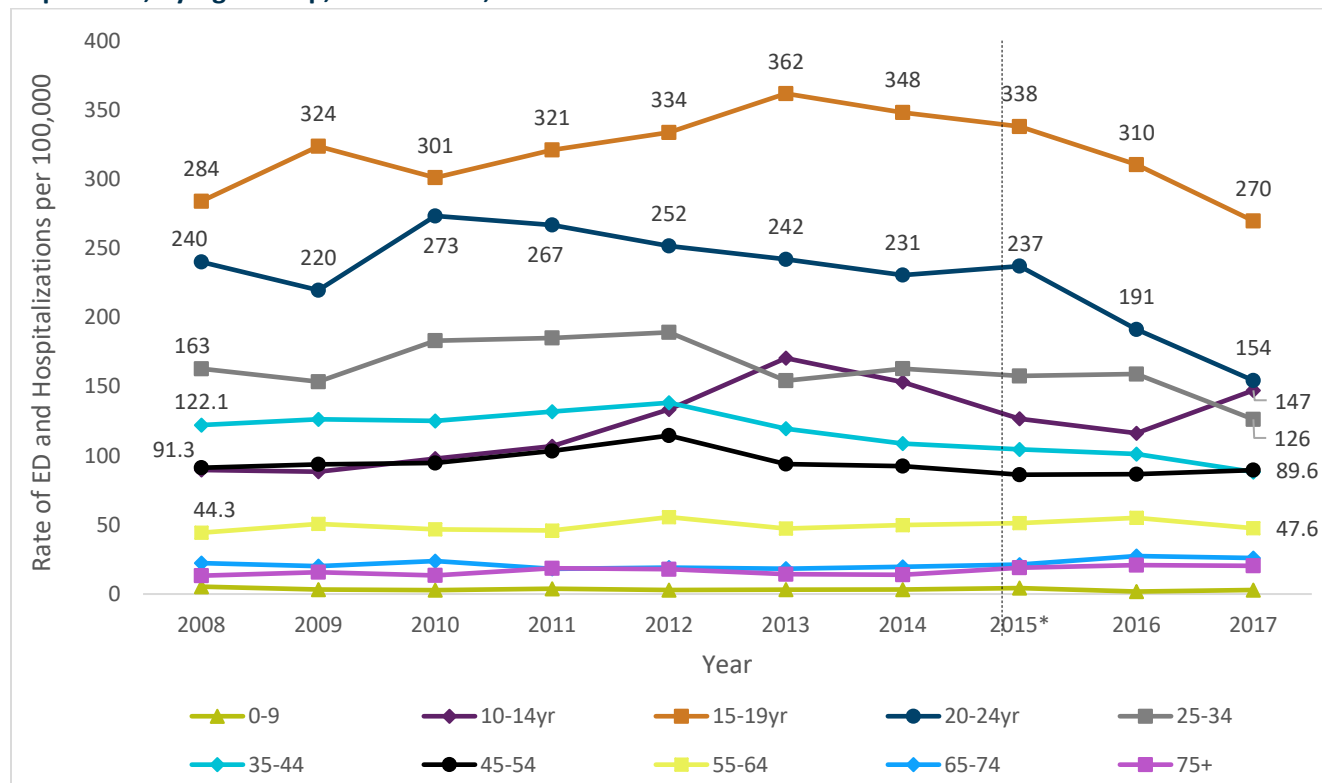
Figure 110: Percentage of High School Students Who Seriously Considered Attempting Suicide, 2019



Data Source: Connecticut School Health Survey, 2019

Residents aged 15 to 19 years, followed by residents ages 20-24 consistently have the highest rates of suicide attempts and self-harm-related ED and hospital visits per 100,000 population (Figure 111). While trends need to be interpreted with caution due to the diagnostic data classification change, we see that rates generally trended downward for both age groups, with rates for residents ages 20-24 in 2017 decreasing to be on par with rates for adolescents ages 10-14 years of age.

Figure 111: Rate of Suicide Attempts and Self Harm Related ED and Hospitalization per 100,000 Population, by Age Group, Connecticut, 2008 – 2017

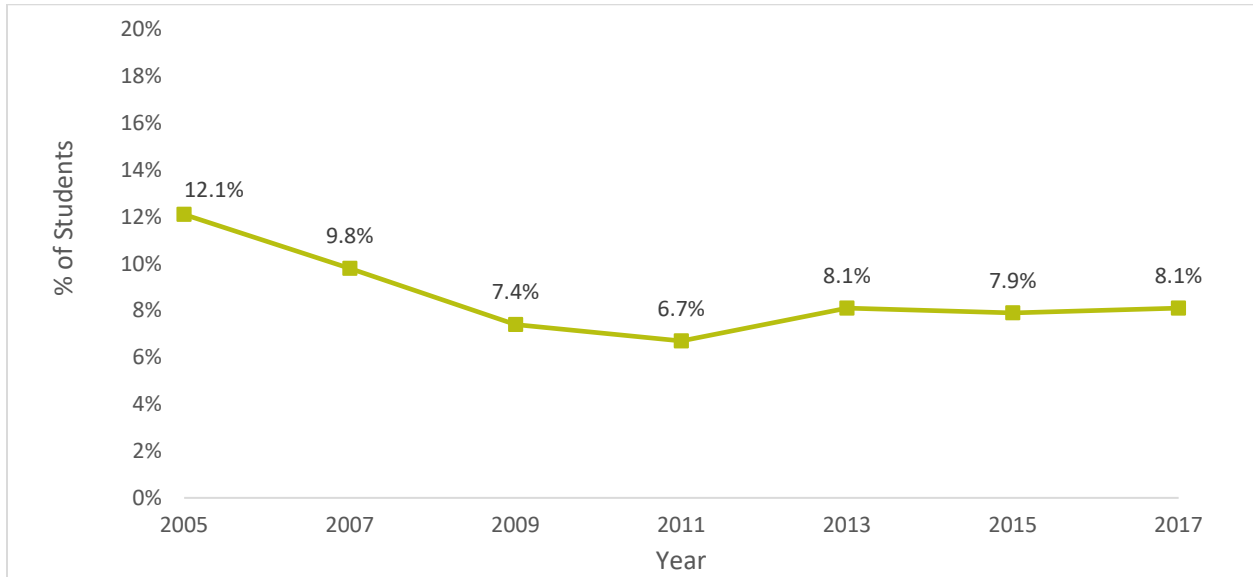


* The vertical line is the break line where the diagnosis codes were converted from ICD9 to ICD10 (as of Oct. 1, 2015).

Data Source: Connecticut Inpatient Hospitalization and Emergency Department Visit Dataset, 2008 to 2017

Almost one in ten Connecticut high school students attempted suicide. While the prevalence of suicide attempts decreased from 2005 to 2011, since then there has been a slight increase (Figure 112). The prevalence of students who attempted suicide did not vary significantly by sex, race/ethnicity, or grade level, though female youth, non-Hispanic Black youth, and youth in tenth grade had slightly higher proportions of suicide attempts (Connecticut School Health Survey, 2005-2017).

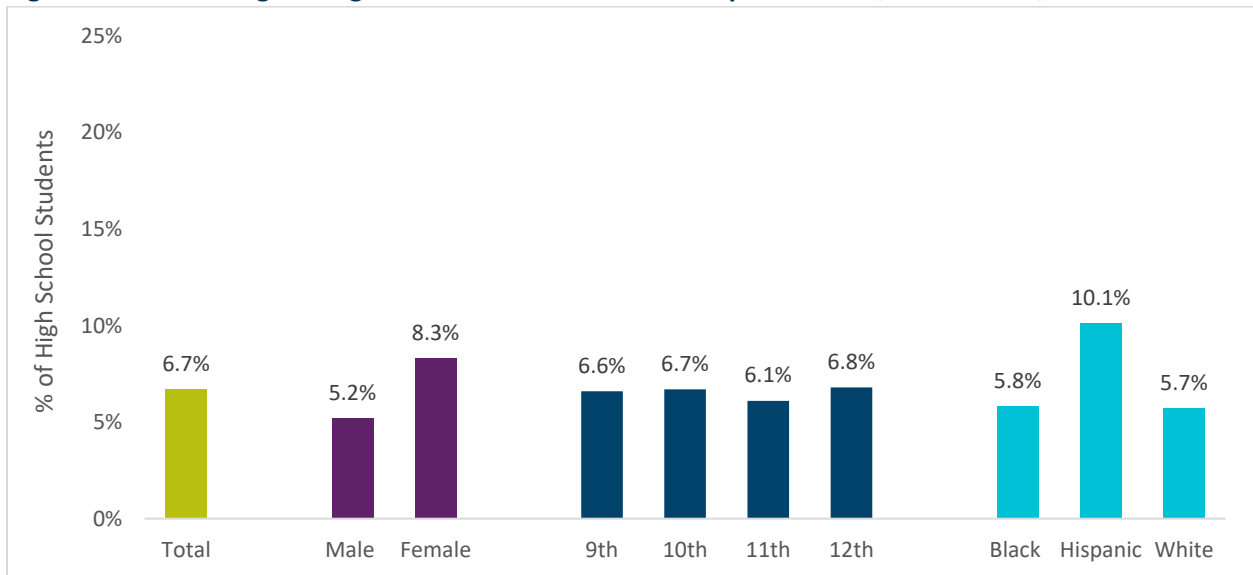
Figure 112: Percent of High School Students Who Actually Attempted Suicide in the Last 12 Months, Connecticut, 2005 – 2017



Data Source: Connecticut School Health Survey, 2005-2017

In 2019, 8.3% of females and 5.2% of males actually attempted suicide (Figure 113). Significantly more Hispanic students (10.1%) attempted suicide compared to Blacks (5.8%) and Whites (5.7%) (Figure 113). In 2017, 5.8 youths (aged 10-19 years) per 100,000 died by suicide in Connecticut. In 2018, the rate was 2.8 per 100,000 (CT DPH Office of Vital Records and Surveillance Analysis and Reporting Unit).

Figure 113: Percentage of High School Students Who Attempted Suicide, Connecticut, 2019



Data Source: Connecticut School Health Survey, 2019

CONCLUSION

Overall, the state of health in Connecticut is very good, routinely surpassing the U.S. national average on key indicators of population health. Many advancements have been made in recent years, including reductions in the teen birth rate, increases in developmental screening in young children, and reductions in motor vehicle crashes and ED visits for adolescents.

However, sociodemographic disparities persist, shaped by pervasive structural and institutional social determinants of health. For many health indicators, persons of color (anyone other than non-Hispanic White) experience a greater share of adverse health events.

Many of the issues raised from this assessment are therefore driven by the goal of advancing the health of priority populations to the high standards of health obtained by more privileged residents of Connecticut. Based on this assessment, emergent themes in maternal and child health in Connecticut are highlighted by life course stage.

Women’s and Maternal Health

- Disparities in Maternal Morbidity and Mortality
- Disparities in Pre-Conception and Inter-Conception Health
- Mental Health and Help-seeking

Perinatal and Infant Health

- Persistent disparities in LBW and Infant Mortality
- Neonatal Abstinence Syndrome
- Disparities in sleeping and feeding

Child Health

- Medical Home
- Violence, Adversity, and Mental Health
- Disparities in Manageable/Preventable Childhood Conditions

Children and Youth with Special Healthcare Needs

- Medical Home
- Adequate/Continuous Insurance Coverage
- Mental Health Treatment/Counseling

Adolescent Health

- Substance use (vaping, prescription opioids)
- Risk-Taking and Self-Harm (unsafe driving, suicide)
- Bullying and Violence (LGBTQ, sexual violence)

The Connecticut DPH has committed to emphasize health equity in the work we do through our mission statement, established values and our reaffirmed strategic priorities, which can be found in our [Strategic Plan](#). We recognize that achieving health equity is dependent on the Social Determinants of Health (SDOH), or as defined by the Centers for Disease Control and Prevention, the “conditions in the places where people live, learn, work, and play [that] affect a wide range of health risks and outcomes.” This place-based framework for health outcomes reflects five key areas that include economic stability;

health and healthcare; education; social and community context; and neighborhood and built environment.¹³⁶

As we move from assessment to planning, we will look at the common upstream factors of SDOH as cross-cutting themes to identify systemic inequities that impact prioritized health issues. By focusing on these determinants of health, engaging cross-sector partners, identifying alignment of efforts and collaboratively exploring strategic opportunities, we will create a roadmap for collaborative health improvement activities over the next five years and will prioritize the equal enjoyment of the highest attainable standard of health for all Connecticut's residents, which is a human right and a priority.

APPENDICES

Acronyms

AAP	American Academy of Pediatrics	MVT	Motor Vehicle Traffic
ACEs	Adverse Childhood Experiences	NAS	Neonatal Abstinence Syndrome
ADHD	Attention-Deficit hyperactivity disorder	NCQA	National Committee for Quality Assurance
ART	Assisted Reproductive Therapies	NH	Non-Hispanic
ASD	Autism spectrum disorder	NIS	National Immunization Survey
AUD	Alcohol Use Disorder	NSCH	National Survey of Children’s Health
BAC	Blood alcohol concentration	NS-CSHCN	National Survey of Children with Special Health Care Needs
BMI	Body Mass Index	OB/GYN	Obstetrics and Gynecology
BRFSS	Behavioral Risk Factor Surveillance System	PCOS	Polycystic Ovarian Syndrome
CDC	Centers for Disease Control and Prevention	PPACA	Patient Protection and Affordable Care Act
CIAC	Connecticut Interscholastic Athletic Conference	PRAMS	Pregnancy Risk Assessment Monitoring System
CSHS	Connecticut School Survey	SAMHSA	Substance Abuse and Mental Health Services Administration
CYSHCN	Children and Youth with Special Health Care Needs	SDOH	Social Determinants of Health
CT	Connecticut	SGA	Infants who are born small for their gestational age
DPH	Department of Public Health	SHA	State Health Assessment
ED	Emergency department	SHIP	State Health Improvement Plan
FPL	Federal poverty level	SIDS	Sudden Infant Death Syndrome
GFR	General Fertility Rate	SNAP	Supplemental Nutrition Assistance Program
HC	Healthcare	SUID	Sudden Unexpected Infant Death
HRSA	Health Resources and Services Administration	THC	Tetrahydrocannabinol
IMR	Infant mortality rate	US	United States
IUD	Intrauterine device	VLBW	Very Low Birth Weight
LARC	Long-Acting Reversible Contraception	WIC	The Special Supplemental Nutrition Program for Women, Infants, and Children
LBW	Low birth weight	YBC	Youth Behavior Component
LGBTQ	Lesbian, gay, bisexual, transgender, or queer	YPAR	Youth Participatory Action Research
MCH	Maternal and Child Health	YRBS	Youth Risk Behavior Survey
MCHB	Maternal and Child Health Bureau	YTC	Youth Tobacco Component
MCHBG	Maternal and Child Health Block Grant		
MSTIC	Multi-System Trauma-Informed Collaborative to Improve Outcomes for Children Exposed to Violence		

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