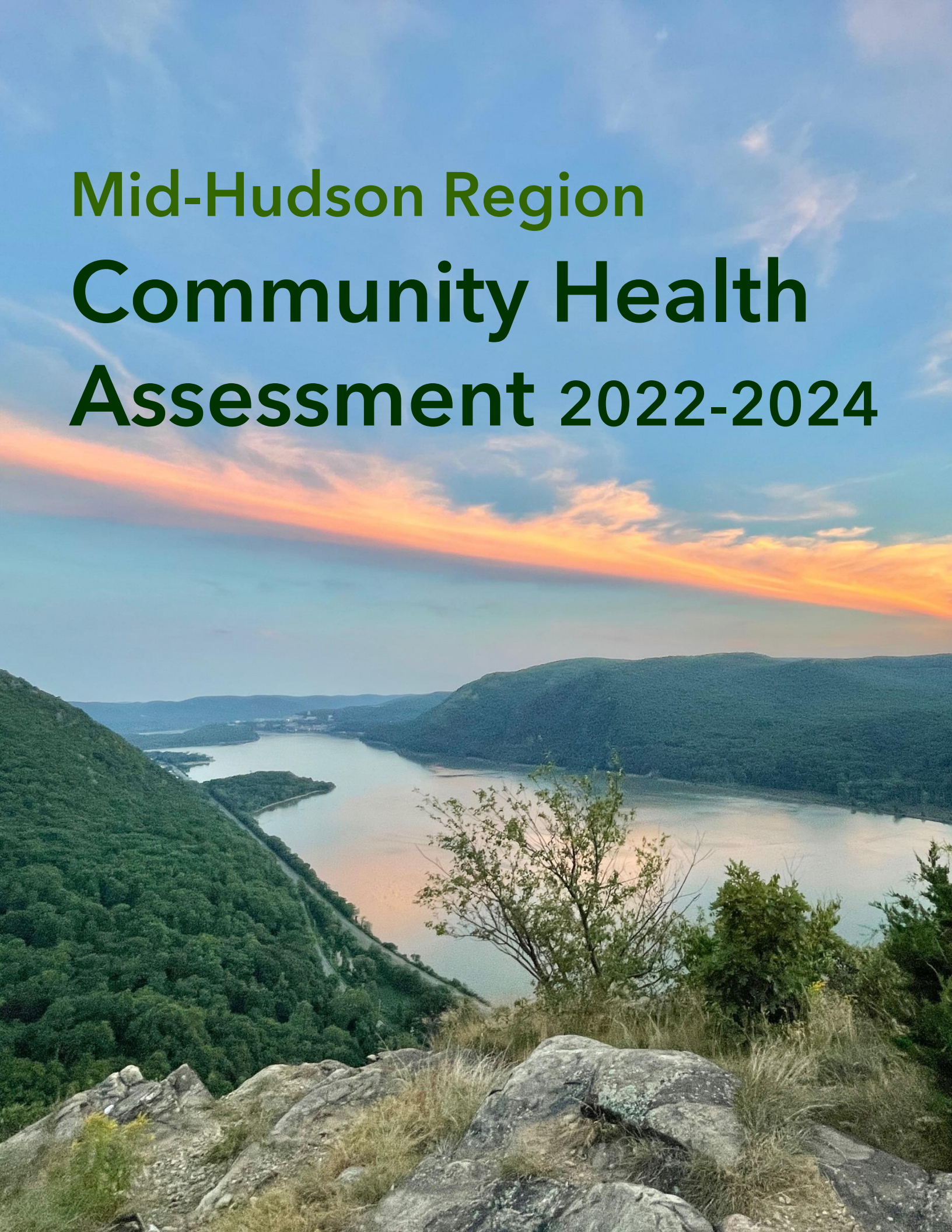
Mid-Hudson Region Community Health Assessment 2022-2024



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This document was created to support our partners in health across the Region through a collaborative partnership between the following organizations:

- Blythedale Children's Hospital
- Bon Secours Charity Health System, a member of the Westchester Medical Center Health Network:
  - Bon Secours Community Hospital
  - Good Samaritan Hospital
  - St. Anthony Community Hospital
- Burke Rehabilitation Center
- Ellenville Regional Hospital
- Garnet Health:
  - Garnet Health Medical Center
  - Garnet Health Medical Center – Catskills
  - Garnet Health Medical Center – Catskills, Grover Herman Site
- HealthAlliance Hospital, a member of the Westchester Medical Center Health Network
- Montefiore Mount Vernon Hospital
- Montefiore New Rochelle Hospital
- Montefiore Nyack Hospital
- Montefiore St. Luke's Cornwall
- New York-Presbyterian Hudson Valley Hospital
- New York-Presbyterian Lawrence Hospital
- Northern Westchester Hospital, Northwell Health
- Nuvance Health:
  - Northern Dutchess Hospital
  - Putnam Hospital Center
  - Vassar Brothers Medical Center
- Phelps Hospital, Northwell Health
- Saint Joseph's Medical Center
- St. John's Riverside Hospital
- Westchester Medical Center
- White Plains Hospital
- Dutchess County Department of Behavioral & Community Health
- Orange County Department of Health
- Putnam County Department of Health
- Rockland County Department of Health
- Sullivan County Department of Public Health
- Ulster County Department of Health
- Westchester County Department of Health

We extend our gratitude to the Siena College Research Institute for their assistance with creating and administering the Mid-Hudson Region Community Health Survey.

Montefiore | Mount Vernon

Montefiore | New Rochelle

Montefiore | Nyack

Montefiore | St. Luke's Cornwall

NewYork-Presbyterian
Hudson Valley Hospital

NewYork-Presbyterian
Lawrence Hospital

Northern Westchester Hospital
Northwell Health

Phelps Hospital
Northwell Health

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EXECUTIVE SUMMARY

Every three years, the New York State (NYS) Department of Health (DOH) requires local health departments (LHD) to submit Community Health Assessments (CHA) and hospitals to submit Community Health Needs Assessments (CHNA). LHDs and hospitals collaborate with community partners and residents to create Community Health Improvement Plans (CHIP) and Community Service Plans (CSP), respectively. These assessments and plans are meant to meet several requirements from NYS Public Health Law and the Affordable Care Act. In recent years, the NYSDOH has encouraged LHDs and hospitals to collaborate in the creation of these documents to better serve their communities.

In 2017, the seven LHDs of the Mid-Hudson Region (M-H Region), including Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester Counties, created the Local Health Department Prevention Agenda Collaborative with the goal of conducting regional resident and provider surveys, creating a regional CHA, and collaborating on common CHIP priorities. This regional approach was continued for the 2022 CHA, CHIP, and CSP cycle, with the collaborative being renamed the Hudson Valley Public Health Collaborative (HVPHC).

A CHA depicts a comprehensive review of a community's current health status, factors contributing to higher health risks or poorer health outcomes, and community resources available to improve health. When conducting the Regional CHA, the HVPHC gathers data and information from as many sources as possible so that a comprehensive assessment can be completed.[1] The CHA can then inform the community to make decisions and develop plans to improve the health of the region.

The LHDs in the HVPHC used Epidemiology and Laboratory Capacity COVID-19 funds, along with partial funding from Garnet Health to contract with Siena College Research Institute (SCRI) to conduct a regional community health survey as a component of the Regional CHA. To further supplement the data collected, members of the HVPHC held focus groups and conducted a survey of community partners to understand the needs of specific communities and populations and the barriers they face to achieving optimal health. Along with the primary data collected through the surveys and focus groups, secondary data were compiled to display health indicators for the M-H Region. Each health indicator was narrated to contextualize the data and outline how each indicator relates.

This document was written by the HVPHC and is intended to serve as a reference for key health information for all stakeholders within the M-H Region and assist them in identifying and prioritizing the health needs of the region and its communities. An additional goal of this project is to initiate collaboration to address key health issues in the region and to inform the CHIPs of each county and the CSPs of non-profit 501(c)(3) hospitals.

[1] Public Health Accreditation Board, 2022, https://phaboard.org/wp-content/uploads/Standards-Measures-Initial-Accreditation-Version-2022.pdf, accessed October 2022

INTRODUCTION

PREVENTION AGENDA

The New York State (NYS) Prevention Agenda (PA), developed by the NYS Department of Health (NYSDOH) in 2008, is the health improvement plan for NYS, a blueprint for State and local health departments (LHDs) to improve the health of all residents. A main strategy of the NYSPA is to promote health equity across all populations who experience health disparities. Health behaviors, access to care, and social determinants of health are important factors to achieving well-being and quality of life. The 2019-2024 PA is the third cycle for the statewide initiative.

The NYSPA has five priority areas with specific action plans developed for each area. The five priority areas include: Prevent Chronic Diseases; Promote a Healthy and Safe Environment; Promote Healthy Women, Infants, and Children; Promote Well-Being and Prevent Mental and Substance Use Disorders; and Prevent Communicable Diseases.

Since 2012, the NYSDOH has required LHDs to collaboratively work with their local hospitals and community partners in the development of the Community Health Assessment (CHA) and Community Health Improvement Plan (CHIP).

COMMUNITY HEALTH ASSESSMENT

The CHA is the foundation of the essential services of local public health departments to assess and monitor population health status, factors that influence health, and community needs and assets. CHAs are conducted every three years and describe the health of a community. Data are obtained from a variety of local, state, and federal data sources to ensure a complete picture is presented. With a comprehensive review of the community's health, this data can be used to identify populations at increased risk of poor health outcomes. This document is the basis for public health planning, program development, policy change, coordination of community resources, funding applications, and new ways to collaboratively use community assets. Once completed, the information is shared with residents and community partners to start conversations and develop plans for improving health status.

COMMUNITY HEALTH NEEDS ASSESSMENT AND COMMUNITY SERVICE PLAN

For hospitals that are considered charitable organizations, they must meet general requirements for tax exemption under Section 501(c)(3) and Revenue Ruling 69-545PDF. They must also meet the requirements imposed by Section 501(r) on a facility-by-facility basis in order to be treated as an organization described in Section 501(c)(3). This involves completing a Community Health Needs Assessment (CHNA) and a Community Service Plan (CSP) every three years.[2]

The CHNA must define the community that it serves including the geographic area, target populations, and any focus on specialty areas or targeted diseases. It must also assess the health needs of the defined community including social determinants of health. As part of this process, they should include input from partners,

[2] US Department of the Treasury, Internal Revenue Service, 2022, https://www.irs.gov/charities-non-profits/community-health-needs-assessment-for-charitable-hospital-organizations-section-501r3, accessed September 2022

stakeholders, and those with knowledge of the community's health needs. As with the CHA, the CHNA should be shared widely.

Through the CHNA, CHA, and partnership with the LHDs, the hospitals develop a CSP. The CSP, like the CHIP, develops and implements effective approaches to health promotion and disease prevention at the community level. The plan involves the use of evidence-based programs that target health areas identified in the CHNA that are of particular concern to their hospital service areas. For those hospitals that partner with LHDs, these areas are of concern to the greater county or regional efforts.

COMMUNITY HEALTH IMPROVEMENT PLAN

The CHIP is a strategic approach to developing plans targeted to issues that were identified in the CHA. The purpose of a CHIP is to describe how the local public health system, led by the LHDs and hospitals, will work together to improve the health of their residents. The document sets priorities, identifies programs and policies that can be implemented, outlines roles and responsibilities of partners, directs use of assets, and sets strategic goals that can be measured. This is a community driven process.

PARTNERSHIP

The seven Mid-Hudson Region (M-H Region) LHDs have vast experience with assessing health and developing partnerships to advance the health of their communities. The CHA and CHIP process allows health departments to work with a network of partners and stakeholders focused on health improvement. Collaboration ensures that this process is dynamic and evolves with what is happening to residents. Engaging the community is key to understanding, supporting, and implementing strategies and ensuring successful outcomes.

HUDSON VALLEY PUBLIC HEALTH COLLABORATIVE

In 2015, HealtheConnections was awarded the NYS Population Health Improvement Program (PHIP) grant for the M-H Region. The PHIP was designated to promote the triple aim of better care, better population health, and lower health care costs. They were responsible for identifying, sharing, disseminating, and helping implement best practices and strategies to promote population health and reduce health care disparities in the region. The PHIP was also tasked with supporting LHDs with the creation of projects such as CHA and CHIP planning, along with the implementation of population health interventions.

In October 2015, the Local Health Department Prevention Agenda Collaborative was created to serve as a forum to share resources between the seven LHDs. The group discussed the development of a regional community survey and in November 2017 hosted a meeting with the seven LHDs, the local hospitals, health systems, and performing provider systems. The discussion included the benefits of collaboration on a regional CHA and implementation of common interventions. The group determined that this would be a successful partnership and worked together to create a regional community health survey and shared CHA that would inform the development of county CHIPs and hospital CSPs.

In 2019, funding streams were no longer available to continue the work of the PHIPs. To continue the work that had been accomplished, the Hudson Valley Public Health Collaborative (HVPHC) reconvened in 2022. The HVPHC continued to meet in a less formal and regular way. The group met on an as-needed basis and generally revolved around grant opportunities and local outbreaks.

In April 2021 the group started meeting monthly to discuss collaboration on a regional CHA and development of another regional community survey with Siena College Research Institute. The group determined the importance of having a regional CHA and agreed to collaborate for the 2022-2024 period. As part of the process, each LHD reached out to their hospital partners to discuss interest in regional collaboration. Hospitals interested in participating in the M-H Region CHA and community survey have been included in the planning process.

EMERGING INFECTIOUS DISEASE COOPERATIVE

The Centers for Disease Control and Prevention's (CDC) Epidemiology and Laboratory Capacity (ELC) for Prevention and Control of Emerging Infectious Diseases Cooperative Agreement provides financial support and technical assistance to the nation's health departments to detect, prevent, and respond to emerging infectious diseases. The ELC's 64 recipients, which consist of state, large local, and United States (US) territory and affiliate health departments, serve as the foundation for our national public health infrastructure and are integral to the nation's ability to tackle infectious disease threats. The ELC accomplishes its mission through a unique structure of four robust public health programs; five cross-cutting projects focusing on leadership, integration, flexibility, and sustainability; and a range of disease-specific projects. The ELC also distributes supplemental funding on behalf of CDC for emergency response efforts, such as those for the influenza H1N1, Zika, and Ebola epidemics, and, most recently, the COVID-19 pandemic. The HVPHC was able to utilize a portion of these funds to complete the M-H Region Community Health Survey.

DATA SOURCES AND INDICATOR SELECTION

To create this document, the following data sources were utilized:

American Community Survey (ACS): A survey conducted nationally by the US Census Bureau to gather information about the social and economic need of communities. *Secondary source*

American Medical Association Online Data Collection Center: The AMA allows licensed physicians to update their AMA listing and credentialing. *Secondary source*

Behavioral Risk Factor Surveillance System (BRFSS): An annual national phone survey coordinated and funded by the Centers for Disease Control and Prevention (CDC) and conducted by each State's health department. Data includes health related behaviors, health conditions, and use of health services. *Secondary source*

Centers for Medicare and Medicaid Services National Provider Identifier Standard (NPI): The NPI is a Health Insurance Portability and Accountability Act (HIPAA) Administrative Simplification Standard. The NPI is a unique identification number for covered health care providers. Covered health care providers and all health plans and health care clearinghouses must use the NPIs in the administrative and financial transactions adopted under HIPAA. *Secondary source*

Community Partner Focus Groups: A series of focus groups conducted throughout the Mid-Hudson Region by the Hudson Valley Public Health Collaborative (HVPHC). *Primary source*

Comprehensive Housing Affordability Strategy Data (CHAS): Custom tabulations of ACS data about housing problems and housing needs from the US Census Bureau sent to the US Department of Housing and Urban Development (HUD). HUD and local governments use this data to plan how to distribute their funds. *Secondary source*

County Health Rankings & Roadmaps: A collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute. County Health Rankings & Roadmaps pulls from a variety of sources to measure vital health factors in counties across the US. *Secondary source*

Department of Health and Human Services (HRSA) Data Warehouse: A website run by the Health Resources and Services Administration (HRSA) which provides maps, data, reports, and dashboards about HRSA's health care programs, including Health Professional Shortage Areas, Health Resource Files, and Medically Underserved Populations. *Secondary source*

Department of Health and Human Services Area Health Resource Files: Provides data from over 50 data sources on health care professions, health facilities, population characteristics, economics, health professions training, hospital utilization, hospital expenditures, and environment at the county, state, and national levels. *Secondary source*

Feeding America: Feeding America began as a clearinghouse for national food donations and is now the nation's largest domestic hunger-relief organization. It is now a network of food banks is in every county in the country. Programs help provide meals to children, seniors, families, and survivors of natural disasters. Part of the mission is to improve understanding of food insecurity and food costs at the local level. Using sources such as the ACS, the Bureau of Labor Statistics, and the US Department of Agriculture, Feeding America conducts Map the Meal Gap, a county level analysis of food insecurity. Secondary source

Healthy People 2030: A collaborative process that reflects input from a diverse group of individuals and organizations. Healthy People 2030 includes 10-year national objectives for improving the health of all Americans. Healthy People has established benchmarks and monitored progress over time. *Secondary source*

Mid-Hudson Region Community Health Survey: A random digit dial and online survey conducted by Siena College Research Institute. Created in collaboration with the HVPHC, local hospital partners, and SCRI. *Primary source*

National Environmental Public Health Tracking Network: A data hub provided by the CDC which brings together health and environmental data. *Secondary source*

New York City Regional Poison Control Center: A call center and research organization which provides poison emergency telephone management, poison information resources, public education, professional education, research and data collection, and toxicosurveillance in real time. Its coverage area includes all New York City (NYC) counties, Nassau, Suffolk, and Westchester counties. *Secondary source*

New York Citywide Immunization Registry: The NY Citywide Immunization Registry (CIR) keeps immunization records for all children and adults who live in NYC. CIR consolidates immunization information and shares it with health care providers, families and agencies concerned with public health. *Secondary source*

New York State Board of Elections: Established as a bipartisan agency of New York State (NYS) to administer and enforce all laws relating to elections within the State. Data tracked by the board includes election results and enrollment statistics for NYS. *Secondary source*

New York State Cancer Registry: A registry which collects, processes, and reports information about New Yorkers diagnosed with cancer from all physicians, dentists, laboratories, and other health care providers who are required to report all cancers to the NYS Department of Health (DOH). *Secondary source*

New York State Childhood Lead Poisoning Prevention Program (CLPPP): The CLPPP is the largest in the country. CLPPP works to make homes safe. It funds NYS local health departments (LHD) to gain access to high-risk housing to educate, inspect and control lead hazards. It looks for properties with lead paint hazards, then it takes action to make them lead safe – protecting children from lead poisoning. Blood lead testing data and blood lead levels are shared through CLPPP. *Secondary source*

New York State Communicable Disease Annual Reports: Documents are released annually from NYSDOH containing mandated reports of suspected or confirmed communicable diseases. *Secondary source*

New York State Communicable Disease Electronic Surveillance System (CDESS): Reporting of suspected or confirmed communicable diseases is mandated under the NYS Sanitary Code (10NYCRR 2.10). Although physicians have primary responsibility for reporting, school nurses, laboratory directors, infection control practitioners, daycare center directors, health care facilities, state institutions, and any other individuals/locations providing health care services are also required to report communicable diseases. All reportable communicable disease data coming through the Electronic Clinical Laboratory Reporting System

(ECLRS) are reported to the CDESS in a timely and complete manner. LHDs review each lab report for proper initiation of a case investigation. Once the investigation is created, the LHD may create a reportable case or may dismiss it if evidence does not support the case definition. *Primary source*

New York State Department of Health Bureau of Occupational Health and Injury Prevention: Injuries occur in predictable patterns, with recognizable risk factors, and among identifiable populations. The Bureau keeps track of where, to whom, and why injuries occur across the state and uses this information to develop injury prevention programs. In regards to workplace injuries, public health data can guide the development of new, safer technologies; education activities; and regulatory and policy changes to make workplaces healthier and safe. *Secondary source*

New York State Department of Health Bureau of Oral Health: The Bureau promotes proven interventions, such as use of dental sealants and fluoridation to reduce the rate of cavities, especially for populations at highest risk. The Bureau collects surveillance data on the oral health status of third graders and oral diseases. *Secondary source*

New York State Department of Health Community Health Indicator Reports (CHIRS): The CHIRS Dashboard tracks about 350 indicators organized by 15 health topics and is updated regularly to include the most recent year of data available for these indicators. Additionally, each of 62 counties in NYS has their own dashboard which allows for comparison of each county's data in relationship to that county's region and NYS totals and includes at-a-glance comparisons of the two most recent data points. Visualizations include tables, maps, charts, and graphs at the state and county levels. This dashboard is a key resource for assessing county trends and can assist in tracking intervention progress. *Secondary source*

New York State Department of Health County Health Indicators by Race/Ethnicity (CHIRE): The CHIRE is a map-based tool that allows users to view health indicators by race/ethnicity in NYS and by county. It includes a variety of health indicators by race/ethnicity including mortality, vital statistics, injuries, chronic diseases, and substance abuse. *Secondary source*

New York State Department of Health Electronic Clinical Laboratory Reporting System (ECLRS): ECLRS provides laboratories that serve NYS with a single electronic system for secure and rapid transmission of reportable disease information to the NYSDOH, county health departments, and the NYC Department of Health and Mental Hygiene. ECLRS enhances public health surveillance by providing timely reporting, improving completeness and accuracy of reports, and generally facilitating the identification of emergent public health problems by monitoring communicable diseases, lead poisoning, HIV/AIDS, and cancer. *Secondary source*

New York State Department of Health Office of Sexual Health and Epidemiology: A special projects unit responsible for conducting Sexually Transmitted Infection (STI) surveillance activities related to screening, disease morbidity, and HIV/STI Partner Services disease intervention activities. Oversees surveillance activities for chlamydia, gonorrhea, and syphilis for NYS (excluding NYC). Provides reporting and support for Partner Services (PS) activities via reports for PS staff, technical support for PS staff, and reporting to the CDC. *Secondary source*

New York State Department of Health Rabies Laboratory: A system that contains monthly reports of the number of animals tested for rabies, as well as the number that tested positive for rabies in every NYS county. *Secondary source*

New York State Department of Health Wadsworth Center: Wadsworth Center is a science-based community committed to protecting and improving the health of New Yorkers through laboratory analysis, investigations, and research, as well as laboratory certification and educational programs. As the state's public health reference laboratory, Wadsworth responds to urgent public health threats as they arise, develops advanced methods to detect microbial agents and genetic disorders, and measures and analyzes environmental chemicals. *Secondary source*

New York State Department of Motor Vehicles (DMV): DMV issues secure identity documents, delivers essential motor vehicle and driver-related services, and administers motor vehicle laws enacted to promote

safety and protect consumers. It maintains statistical data on motor vehicle accidents, including those that are related to drug or alcohol use, and the associated injuries and fatalities. *Secondary source*

New York State Division of Criminal Justice: A criminal justice support agency which provides resources and services that inform decision-making and improve the quality of the criminal justice system. It maintains, analyzes, and publishes criminal and youth justice system data, including incidents of crimes and arrests and dispositions, as reported by police departments, sheriffs' offices, probation departments, and the state Office of Court Administration. *Secondary source*

New York State Education Department (NYSED): NYSED publicly reports educational data submitted by educational institutions on its website data.nysed.gov. *Secondary source*

New York State HIV Surveillance System: An HIV surveillance system conducted by the AIDS Institute Bureau of HIV/AIDS Epidemiology that facilitates and monitors HIV-related laboratory and clinician reporting in NYS. *Secondary source*

New York State Immunization Information System: A system that provides a complete, accurate, secure, real-time immunization medical record that is easily accessible and promotes public health by fully immunizing all individuals of appropriate age and risk. All health care providers are required to report all immunizations administered to persons less than 19 years of age, along with the person's immunization histories, to the NYS Department of Health. *Secondary source*

New York State Medicaid and Child Health Plus: NYS's Medicaid program provides comprehensive health coverage to more than 7.3 million lower-income New Yorkers (as of December 2021). Medicaid pays for a wide range of services, depending on a resident's age, financial circumstances, family situation, or living arrangements. These services are provided through a large network of health care providers that can be accessed directly using Medicaid or through a managed care plan. *Secondary source*

New York State Office of Addiction Services and Supports: The OASAS Office of Data Management, Research and Planning closely monitors substance use disorder (SUD) data and trends in order to better anticipate and meet the needs of New Yorkers living with addiction. OASAS believes an evidence-based and data-driven approach is critical to addressing substance use disorders. Data is made available to partners, providers, and localities to inform the collective efforts to understand and address addiction in NYS. *Secondary source*

New York State Opioid Dashboard: The Opioid Dashboard is an interactive visual presentation of indicators tracking opioid data at state and county levels. It is a key resource for monitoring fatal and nonfatal opioid overdoses, opioid prescribing, opioid use disorder treatment, and the overall opioid overdose burden. The state dashboard homepage displays a quick view of the most current data for 98 opioid-related indicators and compares them with data from previous time periods to assess performance. Historical (trend) data can be easily accessed, and county data (visualized as maps and bar charts) are also available for most opioid tracking indicator. The county dashboard homepage includes the most current data available for 77 opioid-related indicators. Each county in the state has its own dashboard. *Secondary source*

New York State Prescription Monitoring Program (PMP) Registry: Prescribers are required to consult the PMP Registry when writing prescriptions for Schedule II, III, and IV controlled substances. The PMP Registry provides practitioners with direct, secure access to view dispensed controlled substance prescription histories for their patients. The PMP is available 24 hours a day, 7 days a week via an application on the NYS Health Commerce System (HCS). Patient reports include all controlled substances that were dispensed in NYS and reported by the pharmacy/dispenser for the past year. This information will allow practitioners to better evaluate their patients' treatment with controlled substances and determine whether there may be abuse or non-medical use. *Secondary source*

New York State Student Weight Status Category Reporting System: A system that collects weight status category data on children and adolescents attending public schools in NYS outside of NYC. *Secondary source*

New York Statewide Planning and Research Cooperative System (SPARCS): A comprehensive all-payer data reporting system established as a result of cooperation between the health care industry and the

government. The system currently collects patient level data on patient characteristics, diagnoses and treatments, services, and charges for each hospital inpatient and outpatient visit. *Secondary source*

Safe Drinking Water Information System: An information hub from the Environmental Protection Agency (EPA) containing data about public water systems and violations of the EPA's drinking water regulations, as reported to the EPA from the states. *Secondary source*

Small Area Health Insurance Estimates (SAHIE): A program of the US Census Bureau which estimates health insurance coverage for all states and counties nationally. *Secondary source*

United for ALICE: Reports which use a standardized methodology that assesses cost of living and financial hardship on a county level calculated by United Way of Northern New Jersey. *Secondary source*

Upstate New York Poison Control Center: A call center and research organization which provides poison emergency telephone management, poison information resources, public education, professional education, research and data collection, and toxicosurveillance in real time. Its coverage area includes all NYS counties except Westchester, NYC, and Long Island. *Secondary source*

US Census Bureau: The Census Bureau publishes population estimates and demographic components of change, such as births, deaths, and migration. This data can be sorted by characteristics such as age, sex, and race, as well as by national, state, and county location. *Secondary source*

US Department of Agriculture (USDA) Food Environment Atlas: An atlas from the USDA which assembles data regarding food environment factors, such as food choices, health and well-being, and community characteristics. *Secondary source*

Vital Statistics of New York State: A registry of all births, marriages, divorces/dissolutions of marriage, deaths, induced termination of pregnancy/abortions, and fetal deaths that have occurred in NYS outside of NYC. It is maintained by the NYS Bureau of Vital Records, a branch of the NYSDOH. *Secondary source*

DATA NOTES

American Community Survey (ACS): Following pandemic-related data collection disruptions, the Census Bureau revised its methodology to reduce nonresponse bias in data collected in 2020. After evaluating the effectiveness of this methodology, the Census Bureau determined the standard, full suite of 2016–2020 ACS 5-year data are fit for public release. The revised methodology improves the 2020 weighted survey responses by comparing characteristics for responding and nonresponding households using administrative, third-party, and decennial census data. This provides key insight into how those who participated may be different than those who did not and allowed an adjustment to make the data more representative of the entire population. The resulting 2020 input data were then integrated with the inputs from 2016, 2017, 2018 and 2019 (processed using standard ACS methodology) to produce the 5-year data products.

Crude Rate versus Age-Adjusted Rate: A crude rate is defined as the total number of cases or disease events divided by the total population. The age-adjusted rates are rates that would have existed if the population under study had the same age distribution as the "standard" population. Therefore, they are summary measures adjusted for differences in age distributions. Age-adjusted rates are used when available and are calculated using the US 2000 standard population.[3]

International Classification of Diseases: In 2015 the Department of Health and Human Services mandated those entities using ICD-9 codes transition to ICD-10 codes. Comparisons between data before and after 2015 cannot be made due to the many differences in the updated ICD-10-CM code set.

New York State excluding New York City (NYS excl NYC): The population of NYC is not similar to that of the Mid-Hudson Region. Therefore, comparing rates/percentages of counties to NYS excluding NYC, rather

[3] United States Census Bureau, 2022, https://www.census.gov/newsroom/press-releases/2022/acs-5-year-estimates.html, accessed October 2022

than to the whole of NYS, provides a more accurate comparison. When possible, measures for both NYS and NYS excluding NYC are provided. When NYS excluding NYC data are not available comparisons should be made with caution.

Rate: A rate is a measure of the frequency with which an event occurs in a defined population over a specified period of time.

Suppressed and Unstable Data: Some rates/percentages based on small numbers are suppressed because they do not meet the criteria for confidentiality (notated by "s"). Other rates/percentages based on small numbers are presented but are not considered reliable since they can fluctuate greatly over time. These measures are indicated as unstable due to a small numerator (notated by "*").

Three-Year Rate versus Single-Year Rate: When possible, rates are based on a three-year average rather than a single-year estimate to provide a more reliable comparison. Using a three-year average smooths out the data over multiple years to recognize that rates fluctuate from year to year and is particularly useful when small amounts of data are an issue.

AREA BEING ASSESSED

THE MID-HUDSON REGION

The Mid-Hudson Region (M-H Region), located in the southern part of New York State (NYS), encompasses the seven counties of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester [see Appendix A]. The M-H Region is often referred to as the Hudson Valley. Split into east and west by the Hudson River, the region is bordered by Connecticut to the east; New Jersey and Pennsylvania to the west; Delaware, Greene, and Columbia Counties to the north; and New York City (NYC) to the south. With an area of about 4,500 square miles, the region has a population of over two million residents.[4] The M-H Region is a mixture of urban, suburban, and rural areas, including waterfront cities, farmland, forests, and multiple watersheds.

Five toll bridges span across the Hudson River, connecting the two halves of the region. These include the Kingston-Rhinecliff Bridge, the Mid-Hudson Bridge, the Newburgh-Beacon Bridge, the Bear Mountain Bridge, and the Tappan Zee Bridge. The river can also be crossed by ferry at various locations via the Newburgh-Beacon Ferry with NY Waterway, the Kingston-Rhinecliff Ferry, and the Haverstraw-Ossining Ferry with New York Waterway. Major roadways within the M-H Region include, but are not limited to, Interstate 84, NYS Thruway Interstate 87, NYS Route 17, Palisades Interstate Parkway NY 987C, and Taconic State Parkway NY 987G.

The region has 18 four-year and 6 two-year colleges and universities, as well as eight graduate, medical, and nursing schools, with over 92,000 enrolled students. This includes the United States (US) Military Academy at West Point, located in Orange County. There are 109 public school districts in the M-H Region, with over 314,000 students enrolled in grades K-12.[5]

Per Empire State Development, the principal industries for the region include distribution, electronics, food processing, life sciences, biotechnology, information technology, manufacturing, medical device manufacturing and health care related services, renewable energy, advanced energy, research and development, financial services, insurance, accounting, tourism, and hospitality. Bayer Diagnostics, Danone, Fujifilm, IBM, ITT, MasterCard, and PepsiCo are among the Fortune 500 Companies located in the region.

DUTCHESS COUNTY

Dutchess County is in the center of the M-H Region, midway between NYC and NYS' capital, Albany. The western border includes 30 miles of Hudson River shoreline with Connecticut forming the eastern border. Dutchess County is 825 square miles, made up of 30 municipalities, consisting of two cities, 20 towns, and eight villages. Dutchess County has 13 public school districts and is also home to five colleges and universities. The southwestern region of Dutchess County is the most densely populated part of the county and includes the cities of Beacon and the county seat, Poughkeepsie. The rest of the county is predominantly suburban and rural. See map in Appendix B.

ORANGE COUNTY

Orange County is located approximately 40 miles north of NYC. The county is positioned between the Hudson River in the east and the Delaware River in the west, the only county in NYS to border both rivers. Ulster and Sullivan Counties border Orange County on the north, and Rockland County is located to the south. The states of

[4] New York State Department of Health, 2021, https://www.health.ny.gov/statistics/vital_statistics/2019/table02.htm, accessed July 2022

[5] Data.NYSED.gov, New York State Education Department (NYSED), https://data.nysed.gov/lists.php?type=county, accessed July 2022

New Jersey and Pennsylvania are located on the southwest borders of the county. Orange County is 812 square miles[6] and is a diverse mix of rural, farmland, suburban, and urban areas. Orange County communities include three cities, 21 towns, and 19 villages. Nearly 17% of the county's total population resides in its three cities of Middletown, Newburgh, and Port Jervis.[7] Orange County has 19 public school districts and is also home to four colleges, universities, and medical schools. See map in Appendix C.

PUTNAM COUNTY

Putnam County is located approximately 58 miles north of NYC on the eastern side of the Hudson River and is a diverse mix of rural, farmland, and many reservoirs. Connecticut borders the county to its east, the Hudson River to its west, Dutchess County to its north, and Westchester County to its south. According to the 2019 *American Community Survey*, Putnam County is the 28th most affluent county in the US, based on median household income. Putnam County is 230 square miles[8] with six towns, three villages, and no cities. The county is also home to Clarence Fahnestock State Park, which spans 22 square miles (14,000 acres),[9] almost 9% of the county's land mass. Putnam County has six public school districts. It does not contain any institutions of higher education located within its borders. See map in Appendix D.

ROCKLAND COUNTY

Rockland County is located approximately 30 miles north of NYC on the west side of the Hudson River. The county is a popular residence for people who commute to jobs in nearby Westchester and Bergen Counties, as well as NYC. Rockland County is bordered by Orange County to the north and New Jersey to the southwest. Home to eight public school districts and eight colleges and universities, the 199-square mile area includes five towns and 19 villages. Rockland County has the largest Jewish population per capita of any US county, with 31.4% (90,000 residents) being Jewish. This county of 120,000 acres is designated a Preserve America Community, containing more than 35,000 acres of preserved open space and parkland, just under one third of the county. See map in Appendix E.

SULLIVAN COUNTY

Sullivan County is a rural community in the northwestern part of the M-H Region. It is located approximately 75 miles northwest of NYC in the Catskill Mountains. The county is bordered by Delaware County to the north, Ulster County to the east, Orange County to the south, and Pennsylvania to the west. Home to nine public school districts and one two-year college, the 997-square mile area includes 15 towns and six villages. See map in Appendix F.

ULSTER COUNTY

Ulster County is located in the southeast part of NYS, south of Albany and immediately west of the Hudson River. Bordered by Greene County to the north, Delaware County to the northwest, Sullivan County to the southwest, Orange County to the south, and Dutchess County across the Hudson River to the east, much of Ulster County can be characterized as suburban and semi-rural. The county has only one major urban area, the city of Kingston,

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[6] New York State Department of Health, 2021, https://www.health.ny.gov/statistics/vital_statistics/2019/table02.htm, accessed September 2022

[7] New York State Department of Health, 2021, https://www.health.ny.gov/statistics/vital_statistics/2019/table02.htm, accessed October 2022

[8] United States Census Bureau, QuickFacts Putnam County, https://www.census.gov/quickfacts/putnamcountynewyork, accessed September 2022

[9] New York State Parks, Recreation and Historic Preservation, https://parks.ny.gov/parks/fahnestock/details.aspx, accessed August 2022

located in the eastern central portion of the county, and encompassing just 7.4 square miles of the county's total area. The rest of the county is comprised of 20 towns and three villages. Ulster County is home to nine school districts and two colleges and universities within its 1,161-square mile area. See map in Appendix G.

WESTCHESTER COUNTY

Westchester County is located just north of NYC, with an area of about 450 square miles. It is bordered on the west by the Hudson River, on the north by Putnam County, and on the east by the Long Island Sound and Connecticut's Fairfield County. Within its 48 municipalities, Westchester County can be described as predominately a mix of urban and suburban communities. Comprised of six cities, 19 towns, and 23 villages, the county is home to 43 public school districts and 24 colleges and universities. See map in Appendix H.

HOSPITAL SERVICE AREAS

Non-profit 501(c)(3) hospitals are required to conduct a Community Health Needs Assessment (CHNA) every three years and submit them to the United States Internal Revenue Service (IRS), similar to that of the Community Service Plans (CSP). These hospitals are required to collaborate with the Local Health Departments (LHDs) to complete a Community Health Improvement Plan (CHIP).

Hospital service areas (HSAs) are the local health care markets for hospital care. It includes ZIP codes of residents who utilize a particular hospital's services. Tables below include primary service areas for listed hospitals that collaborated on this process. Data are from the US Census.

BLYTHEDALE CHILDREN'S HOSPITAL

Table 1

County	ZIP Code	Population	County	ZIP Code	Population
Westchester	10501	1,219	**Westchester**	10552	19,786
Westchester	10502	5,487	**Westchester**	10553	10,170
Westchester	10503	108	**Westchester**	10560	4,737
Westchester	10504	7,987	**Westchester**	10562	31,796
Westchester	10505	851	**Westchester**	10566	23,570
Westchester	10506	5,790	**Westchester**	10567	19,929
Westchester	10507	6,408	**Westchester**	10570	12,680
Westchester	10510	9,988	**Westchester**	10573	38,352
Westchester	10511	2,246	**Westchester**	10576	5,116
Westchester	10514	11,946	**Westchester**	10577	6,552
Westchester	10517	539	**Westchester**	10578	681
Westchester	10518	1,268	**Westchester**	10580	17,208
Westchester	10519	316	**Westchester**	10583	38,982
Westchester	10520	12,810	**Westchester**	10588	2,282
Westchester	10522	10,875	**Westchester**	10589	8,475
Westchester	10523	7,444	**Westchester**	10590	6,767
Westchester	10526	1,809	**Westchester**	10591	22,540
Westchester	10527	908	**Westchester**	10594	5,117
Westchester	10528	12,280	**Westchester**	10595	8,195
Westchester	10530	12,604	**Westchester**	10596	1,729
Westchester	10532	4,931	**Westchester**	10597	968
Westchester	10533	7,322	**Westchester**	10598	28,647
Westchester	10535	555	**Westchester**	10601	11,376
Westchester	10536	10,739	**Westchester**	10603	17,045
Westchester	10538	16,597	**Westchester**	10604	11,250
Westchester	10543	20,135	**Westchester**	10605	18,126
Westchester	10545	141	**Westchester**	10606	16,499
Westchester	10546	1,277	**Westchester**	10607	6,824
Westchester	10547	7,647	**Westchester**	10701	63,393

BLYTHEDALE CHILDREN'S HOSPITAL (CONTINUED)

County	ZIP Code	Population	County	ZIP Code	Population
Westchester	10548	3,487	**Westchester**	10703	20,301
Westchester	10549	16,638	**Westchester**	10704	30,165
Westchester	10705	38,777	**Westchester**	10710	25,120
Westchester	10706	8,679	**Westchester**	10801	40,827
Westchester	10707	10,097	**Westchester**	10803	12,435
Westchester	10708	21,225	**Westchester**	10804	14,146
Westchester	10709	9,292	**Westchester**	10805	18,414

BON SECOURS CHARITY HEALTH SYSTEM, A MEMBER OF THE WESTCHESTER MEDICAL CENTER HEALTH NETWORK

Table 2

County	ZIP Code	Population	County	ZIP Code	Population
Rockland	10901	23,959	**Rockland**	10960	15,357
Orange	10916	4,265	**Rockland**	10965	15,149
Orange	10917	2,134	**Orange**	10969	1,403
Orange	10918	12,264	**Rockland**	10970	9,773
Rockland	10920	8,877	**Orange**	10973	2,322
Orange	10921	3,856	**Rockland**	10974	3,208
Rockland	10923	8,796	**Orange**	10975	291
Orange	10924	13,388	**Rockland**	10977	63,319
Orange	10925	4,061	**Rockland**	10980	13,997
Orange	10926	3,108	**Rockland**	10984	3,020
Rockland	10927	12,120	**Orange**	10987	3,280
Orange	10928	4,004	**Rockland**	10989	10,333
Orange	10930	8,784	**Orange**	10990	19,678
Rockland	10931	887	**Rockland**	10993	4,996
Orange	10940	49,194	**Orange**	10998	2,824
Orange	10941	13,242	**Sullivan**	12719	1,305
Orange	10950	49,712	**Orange**	12729	2,253
Rockland	10952	41,631	**Sullivan**	12737	2,074
Rockland	10954	23,226	**Orange**	12746	1,271
Rockland	10956	31,450	**Orange**	12771	14,061
Rockland	10960	15,357	**Orange**	12780	2,064

Table 3

County	ZIP Code	Population	County	ZIP Code	Population
Westchester	10501	1,219	**Westchester**	10552	19786
Westchester	10502	5,487	**Westchester**	10553	10170
Westchester	10503	108	**Westchester**	10560	4737
Westchester	10504	7,987	**Westchester**	10562	31796
Westchester	10505	851	**Westchester**	10566	23570
Westchester	10506	5,790	**Westchester**	10567	19929
Westchester	10507	6,408	**Westchester**	10570	12680
Westchester	10510	9,988	**Westchester**	10573	38352
Westchester	10511	2,246	**Westchester**	10576	5116
Westchester	10514	11,946	**Westchester**	10577	6552
Westchester	10517	539	**Westchester**	10578	681
Westchester	10518	1,268	**Westchester**	10580	17208
Westchester	10519	316	**Westchester**	10583	38982
Westchester	10520	12,810	**Westchester**	10588	2282
Westchester	10522	10,875	**Westchester**	10589	8475
Westchester	10523	7,444	**Westchester**	10590	6767
Westchester	10526	1,809	**Westchester**	10591	22540
Westchester	10527	908	**Westchester**	10594	5117
Westchester	10528	12,280	**Westchester**	10595	8195
Westchester	10530	12,604	**Westchester**	10596	1729
Westchester	10532	4,931	**Westchester**	10597	968
Westchester	10533	7,322	**Westchester**	10598	28647
Westchester	10535	555	**Westchester**	10601	11376
Westchester	10536	10,739	**Westchester**	10603	17045
Westchester	10538	16,597	**Westchester**	10604	11250
Westchester	10543	20,135	**Westchester**	10605	18126
Westchester	10545	141	**Westchester**	10606	16499
Westchester	10546	1,277	**Westchester**	10607	6824
Westchester	10547	7,647	**Westchester**	10701	63393
Westchester	10548	3,487	**Westchester**	10703	20301
Westchester	10549	16,638	**Westchester**	10704	30165
Westchester	10705	38,777	**Westchester**	10710	25120
Westchester	10706	8,679	**Westchester**	10801	40827
Westchester	10707	10,097	**Westchester**	10803	12435
Westchester	10708	21,225	**Westchester**	10804	14146
Westchester	10709	9,292	**Westchester**	10805	18414

ELLENVILLE REGIONAL HOSPITAL

Table 4

County	ZIP Code	Population	County	ZIP Code	Population
Ulster	12428	6,885	**Ulster**	12489	1,149
Ulster	12446	5,063	**Sullivan**	12788	2,980
Ulster	12458	2,778	**Ulster**	12435	250
Ulster	12404	3,334	**Ulster**	12401	35,192
Sullivan	12740	2,035	**Sullivan**	12789	2,081
Ulster	12566	11,571	**Ulster**	12483	267
Sullivan	12790	4,058			

GARNET HEALTH MEDICAL CENTER – CATSKILLS, A MEMBER OF GARNET HEALTH

Table 5

County	ZIP Code	Population	County	ZIP Code	Population
Sullivan	12701	11,356	**Sullivan**	12754	7,212
Sullivan	12719	1,105	**Sullivan**	12758	4,426
Sullivan	12720	151	**Sullivan**	12759	931
Sullivan	12721	6,386	**Sullivan**	12762	531
Sullivan	12723	2,112	**Sullivan**	12763	907
Sullivan	12726	1,062	**Sullivan**	12764	1,870
Sullivan	12732	802	**Sullivan**	12765	781
Sullivan	12733	1,276	**Sullivan**	12766	504
Sullivan	12734	1,076	**Sullivan**	12768	939
Sullivan	12736	43	**Sullivan**	12770	345
Sullivan	12737	1,839	**Sullivan**	12775	2,482
Sullivan	12738	222	**Sullivan**	12776	2,227
Sullivan	12740	1,674	**Sullivan**	12777	689
Sullivan	12741	298	**Sullivan**	12779	2,368
Sullivan	12742	222	**Sullivan**	12783	1,574
Sullivan	12743	249	**Sullivan**	12786	910
Sullivan	12745	109	**Sullivan**	12787	56
Sullivan	12747	2,527	**Sullivan**	12788	1,934
Sullivan	12748	1,636	**Sullivan**	12789	2,689
Sullivan	12750	52	**Sullivan**	12790	5,646
Sullivan	12751	763	**Sullivan**	12791	214
Sullivan	12752	241	**Sullivan**	12792	434

Table 6

County	ZIP Code	Population	County	ZIP Code	Population
Orange	10916	4,540	**Orange/Sullivan**	12729	1,874
Orange	10917	1,968	**Sullivan**	12732	786
Orange	10918	11,647	**Sullivan**	12733	1,446
Orange	10919	1,040	**Sullivan**	12734	867
Orange	10921	4,135	**Sullivan**	12736	118
Orange	10924	13,120	**Sullivan**	12737	1,910
Orange	10925	4,539	**Sullivan**	12738	320
Orange	10926	3,203	**Sullivan/Ulster**	12740	1,886
Orange	10928	4,175	**Sullivan**	12741	351
Orange	10930	8,958	**Sullivan**	12742	181
Orange	10933	473	**Sullivan**	12743	389
Orange	10940	48,418	**Sullivan**	12745	178
Orange	10941	13,779	**Orange**	12746	937
Orange	10950	47,226	**Sullivan**	12747	1,714
Orange	10958	3,291	**Sullivan**	12748	2,076
Orange	10963	4,298	**Sullivan**	12750	187
Orange	10969	1,267	**Sullivan**	12751	1,054
Orange	10973	2,126	**Sullivan**	12752	242
Orange	10975	281	**Sullivan**	12754	7,221
Orange	10979	234	**Delaware/Sullivan/Ulster**	12758	4,042
Orange	10985	58	**Sullivan**	12759	1,649
Orange	10987	3,395	**Sullivan**	12762	512
Orange	10990	20,631	**Sullivan**	12763	942
Orange	10992	9,621	**Sullivan**	12764	1,802
Orange	10996	6,756	**Sullivan**	12765	885
Orange	10998	3,122	**Sullivan**	12766	437
Orange	12518	5,870	**Sullivan**	12768	1,131
Orange	12520	3,109	**Sullivan**	12770	296
Orange	12543	3,001	**Orange**	12771	14,511
Orange	12549	10,201	**Sullivan**	12775	2,297
Orange	12550	54,447	**Delaware/Sullivan**	12776	2,180
Orange	12553	24,438	**Sullivan**	12777	764
Orange	12566	10,753	**Sullivan**	12779	2,460
Orange	12575	2,258	**Orange/Sullivan**	12780	2,312
Orange	12577	2,029	**Sullivan**	12783	1,668
Orange/Ulster	12586	12,540	**Sullivan**	12786	665
Orange/Ulster	12589	17,228	**Sullivan**	12787	452
Sullivan	12701	11,324	**Sullivan**	12788	2,908
Sullivan	12719	1,207	**Sullivan**	12789	1,838

GARNET HEALTH MEDICAL CENTER, A MEMBER OF GARNET HEALTH (CONTINUED)

County	ZIP Code	Population	County	ZIP Code	Population
Sullivan	12720	172	**Sullivan**	12790	4,518
Orange/Sullivan	12721	6,627	**Sullivan**	12791	737
Sullivan	12723	1,826	**Sullivan**	12792	335
Sullivan	12726	1,162			

HEALTHALLIANCE HOSPITAL, A MEMBER OF THE WESTCHESTER MEDICAL CENTER HEALTH NETWORK

Table 7

County	ZIP Code	Population	County	ZIP Code	Population
Ulster	12401	35,040	**Ulster**	12472	1,572
Ulster	12404	3,385	**Ulster**	12475	354
Ulster	12411	497	**Ulster**	12477	18,787
Greene	12414	10,510	**Ulster**	12484	2,733
Ulster	12417	581	**Ulster**	12486	1,523
Ulster	12428	6,602	**Ulster**	12487	3,268
Ulster	12432	492	**Ulster**	12490	110
Ulster	12433	483	**Ulster**	12491	1,675
Ulster	12446	5,061	**Ulster**	12498	4,851
Ulster	12449	3,367	**Ulster**	12561	18,308
Ulster	12453	366	**Sullivan**	12733	1,446
Ulster	12456	639	**Sullivan**	12747	1,714
Ulster	12461	1,634	**Sullivan**	12759	1,649
Ulster	12466	2,471	**Sullivan**	12788	2,908
Ulster	12471	215			

MONTEFIORE MOUNT VERNON HOSPITAL

Table 8

County	ZIP Code	Population	County	ZIP Code	Population
Bronx/Westchester	10550	37,144	**Westchester**	10553	10,170
Westchester	10552	19,786	**Westchester**	10708	21,225
Westchester	10553	10,170			

MONTEFIORE NEW ROCHELLE HOSPITAL

Table 9

County	ZIP Code	Population	County	ZIP Code	Population
Westchester	10538	16,597	**Westchester**	10804	14,146
Westchester	10583	38,982	**Westchester**	10805	18,414
Westchester	10801	40,827			

MONTEFIORE NYACK HOSPITAL

Table 10

County	ZIP Code	Population	County	ZIP Code	Population
Rockland	10901	23,959	**Rockland**	10970	9,773
Rockland	10913	5,626	**Rockland**	10974	3,208
Rockland	10920	8,877	**Rockland**	10976	2,699
Rockland	10923	8,796	**Rockland**	10977	63,319
Rockland	10927	12,120	**Rockland**	10980	13,997
Rockland	10952	41,631	**Rockland**	10983	5,674
Rockland	10954	23,226	**Rockland**	10984	3,020
Rockland	10956	31,450	**Rockland**	10986	1,696
Rockland	10960	15,357	**Rockland**	10989	10,333
Rockland	10962	5,581	**Rockland**	10993	4,996
Rockland	10964	1,367	**Rockland**	10994	7,652
Rockland	10965	15,149	**Rockland**	10931	887
Rockland	10968	2,249			

MONTEFIORE ST. LUKE'S CORNWALL

Table 11

County	ZIP Code	Population	County	ZIP Code	Population
Orange	10950	47,226	**Orange/Ulster**	12542	5913
Orange	10928	54,447	**Orange**	12549	10201
Orange	10992	24,438	**Orange**	12553	24438
Dutchess	12508	19,880	**Orange/Ulster**	12586	12540
Orange	12518	5,870	**Orange/Ulster**	12589	17228
Orange	12520	3,109			

NEW YORK-PRESBYTERIAN HUDSON VALLEY HOSPITAL

Table 12

County	ZIP Code	Population	County	ZIP Code	Population
Westchester	10566	23,570	**Westchester**	10535	555
Westchester	10562	31,796	**Westchester**	10520	12,810
Westchester	10596	1,729	**Putnam/Westchester**	10537	2,416
Westchester	10547	7,647	**Westchester**	10548	3,487
Westchester	10511	2,246	**Westchester**	10588	2,282

NEW YORK-PRESBYTERIAN LAWRENCE HOSPITAL

Table 13

County	ZIP Code	Population	County	ZIP Code	Population
Westchester	10707	10,097	**Westchester**	10803	12,435
Westchester	10708	21,225	**Westchester**	10804	14,146
Westchester	10709	9,292	**Westchester**	10805	18,414
Westchester	10522	10,875	**Bronx/Westchester**	10550	37,144
Westchester	10583	38,982	**Westchester**	10552	19,786
Westchester	10538	16,597	**Westchester**	10553	10,170
Westchester	10801	40,827			

NORTHERN WESTCHESTER HOSPITAL, NORTHWELL HEALTH

Table 14

County	ZIP Code	Population	County	ZIP Code	Population
Westchester	10506	5,790	**Westchester**	10536	10,739
Westchester	10507	6,408	**Westchester**	10546	1,277
Westchester	10518	1,268	**Westchester**	10547	7,647
Westchester	10519	316	**Westchester**	10549	16,638
Westchester	10596	1,729	**Westchester**	10560	4,737
Westchester	10597	968	**Westchester**	10589	8,475
Westchester	10598	28,647	**Westchester**	10566	23,570
Westchester	10590	6,767	**Westchester**	10567	19,929
Westchester	10526	1,809			

NUVANCE HEALTH

Table 15

County	ZIP Code	Population	County	ZIP Code	Population
Putnam	10512	24,619	**Columbia**	12523	1,810
Putnam	10541	26,678	**Dutchess**	12604	594
Putnam	10509	20,230	**Dutchess**	12590	34,823
Putnam	12563	7,579	**Dutchess**	12512	244
Dutchess	12564	7,710	**Ulster**	12528	12,767
Westchester	10589	8,080	**Ulster**	12429	314
Dutchess	12531	2,645	**Ulster**	12493	163
Dutchess	12582	6,213	**Dutchess**	12533	26,361
Ulster	12401	34,800	**Dutchess**	12524	15,608
Dutchess	12572	8,961	**Dutchess**	12508	19,812
Ulster	12477	17,870	**Dutchess**	12569	9,838
Ulster	12432	514	**Orange**	12550	54,503
Ulster	12490	39	**Dutchess**	12540	8,882

NUVANCE HEALTH (CONTINUED)

County	ZIP Code	Population	County	ZIP Code	Population
Dutchess	12571	10,037	**Dutchess**	12570	6,772
Dutchess	12504	1,490	**Ulster**	12589	17,843
Dutchess	12538	14,566	**Ulster**	12542	5,684
Columbia	12526	3,530	**Ulster**	12547	2,810
Dutchess	12580	4,359	**Ulster**	12515	1,657
Ulster	12449	3,208	**Ulster**	12585	928
Ulster	12443	3,721	**Ulster**	12548	1,133
Ulster	12466	2,110	**Ulster**	12561	18,224
Ulster	12417	559	**Dutchess**	12578	2,100
Dutchess	12583	2,160	**Dutchess**	12514	2,772
Columbia	12534	17,814	**Ulster**	12487	3,363
Columbia	12172	187	**Ulster**	12456	968
Ulster	12498	4,713	**Ulster**	12453	345
Greene	12414	9,726	**Dutchess**	12507	210
Columbia	12523	1,810	**Dutchess**	12601	41,037
Dutchess	12514	2,772	**Dutchess**	12603	42,140

PHELPS HOSPITAL, NORTHWELL HEALTH

Table 16

County	ZIP Code	Population	County	ZIP Code	Population
Westchester	10591	22,540	**Westchester**	10591	22,540
Westchester	10562	31,796	**Westchester**	10510	9,988
Westchester	10520	12,810	**Westchester**	10523	7,444
Westchester	10522	10,875			

SAINT JOSEPH'S MEDICAL CENTER

Table 17

County	ZIP Code	Population	County	ZIP Code	Population
Westchester	10701	58,841	**Bronx**	10463	72,863
Westchester	10703	21,039	**Bronx**	10466	73,569
Westchester	10704	32,125	**Bronx**	10467	102,718
Westchester	10705	41,008	**Bronx**	10470	14,592
Westchester	10710	27,602	**Bronx**	10474	12,608

ST. JOHN'S RIVERSIDE HOSPITAL

Table 18

County	ZIP Code	Population	County	ZIP Code	Population
New York	10030	26,999	**Westchester**	10502	5,487
New York	10035	33,969	**Westchester**	10522	10,875
Bronx	10451	45,713	**Westchester**	10523	7,444
Bronx	10452	75,371	**Westchester**	10533	7,322
Bronx	10453	78,309	**Bronx/Westchester**	10550	37,144
Bronx	10454	37,337	**Westchester**	10583	38,982
Bronx	10455	39,665	**Westchester**	10591	22,540
Bronx	10456	86,547	**Westchester**	10701	63,393
Bronx	10457	70,496	**Westchester**	10703	20,301
Bronx	10458	79,492	**Westchester**	10704	30,165
Bronx	10459	47,308	**Westchester**	10705	38,777
Bronx	10460	57,311	**Westchester**	10706	8,679
Bronx	10463	67,970	**Westchester**	10707	10,097
Bronx	10465	42,230	**Westchester**	10708	21,225
Bronx	10466	67,813	**Westchester**	10710	25,120
Bronx	10467	97,060	**Westchester**	10801	40,827
Bronx	10469	66,631	**Kings**	11212	84,500
Bronx	10473	58,519			

WHITE PLAINS HOSPITAL

Table 19

County	ZIP Code	Population	County	ZIP Code	Population
Westchester	10601	11,376	**Westchester**	10605	18,126
Westchester	10603	17,045	**Westchester**	10606	16,499
Westchester	10604	11,250	**Westchester**	10607	6,824

NOTE

Westchester Medical Center, Maria Fareri Children's Hospital, and Mid-Hudson Regional Hospital are part of the Westchester County Health Care Corporation (WCHCC), which is a public benefit corporation. As part of WCHCC, they are not required to collaborate with the LHDs to complete a Community Service Plan (CSP).

DEMOGRAPHIC SUMMARY

POPULATION

In 2020, New York State's (NYS) population was nearly 20 million. When excluding New York City (NYC), the population was 11,135,297. The Mid-Hudson Region (M-H Region) made up 11.9% of NYS' population and includes the seven counties of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester. Westchester County comprised the largest portion of the M-H Region's population at 41.7%, while Sullivan County made up only 3.2% of the M-H Region [see Table 20].

The population of the M-H Region grew 4.7% from 2010 to 2020. In those 10 years, growth increased most rapidly in Rockland (7.9%) and Orange (7.1%). Putnam (-2.1%), and Ulster (-0.4%) had negative growth.[10]

Table 20

Population Demographic Characteristics, 2020			
	Population	**Percent of Mid-Hudson Region**	**Percent of NYS**
Dutchess	293,524	12.6	1.5
Orange	382,077	16.5	2.0
Putnam	98,714	4.3	0.5
Rockland	325,213	14	1.7
Sullivan	75,329	3.2	0.4
Ulster	178,371	7.7	0.9
Westchester	968,738	41.7	5.0
Mid-Hudson	2,321,966	100.0	11.9
NYS excl NYC	11,135,297	N/A	57.1
NYS	19,514,849	N/A	100.0

Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-Year Estimates, Table S0101 https://data.census.gov/cedsci/table?q=s0101&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119_1600000US3651000&tid=ACSST5Y2020.S0101

[10] United States Census Bureau, https://data.census.gov/cedsci/table?q=decennial%20population&g=0500000US36027%248600000,36071%248600000,36079%248600000,36087%248600000,36105%248600000,36111%248600000,36119%248600000&d=DEC%20Summary%20File%201&tid=DECENNIALSF12010.P1, accessed September 2022

SEX

When stratifying the population by sex in 2020, the M-H Region had a near-even distribution between males and females [see Table 21]. Apart from Orange and Sullivan Counties, the M-H Region had a slightly higher percentage of females than males. The same is true for NYS, as well as NYS excluding NYC.

Table 21

Population Stratified by Sex, 2020				
	Male		**Female**	
	N	%	N	%
Dutchess	145,843	49.7	147,681	50.3
Orange	191,356	50.1	190,721	49.9
Putnam	49,202	49.8	49,512	50.2
Rockland	159,592	49.1	165,621	50.9
Sullivan	38,595	51.2	36,734	48.8
Ulster	88,500	49.6	89,871	50.4
Westchester	469,087	48.4	499,651	51.6
Mid-Hudson	1,142,175	49.2	1,179,791	50.8
NYS excl NYC	5,476,225	49.2	5,659,072	50.8
NYS	9,474,184	48.5	10,040,665	51.5

Note: The American Community Survey includes a question that intends to capture current sex; there are no questions about gender, sexual orientation, or sex at birth. Respondents should respond either "male" or "female" based on how they currently identify their sex.
Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-Year Estimates, Table S0101
https://data.census.gov/cedsci/table?q=s0101&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119_1600000US3651000&tid=ACSST5Y2020.S0101

AGE

Throughout the M-H Region and in NYS, adults aged 50 to 59 years made up the largest portion of the population (14.0% and 13.6%, respectively) [see Table 22]. Children aged less than five years and five to nine years, as well as adults aged 40 to 49 years and 60 to 69 years, were similarly distributed throughout the M-H Region, with Ulster County having the greatest difference between adults aged 60 to 69 years and children less than five years old (14.1% vs 4.4%) [see Table 22].

Table 22

Population Stratified by Age, 2020										
	<5 years		**5-9 years**		**10-19 years**		**20-29 years**		**30-39 years**	
	N	%	N	%	N	%	N	%	N	%
Dutchess	13,432	4.6	13,843	4.7	38,145	13.0	39,460	13.4	33,181	11.3
Orange	25,435	6.7	26,272	6.9	57,267	15.0	51,433	13.5	44,244	11.6
Putnam	4,428	4.5	4,774	4.8	12,471	12.6	11,549	11.7	11,286	11.4
Rockland	26,419	8.1	24,483	7.5	49,455	15.2	40,876	12.6	36,834	11.3
Sullivan	4,373	5.8	4,081	5.4	9,489	12.6	8,550	11.4	8,824	11.7
Ulster	7,778	4.4	8,455	4.7	20,291	11.4	22,782	12.8	21,666	12.1
Westchester	53,891	5.6	56,659	5.8	127,658	13.2	114,643	11.8	116,927	12.1
Mid-Hudson	135,756	5.8	138,567	6.0	314,776	13.6	289,293	12.5	272,962	11.8
NYS excl NYC	605,910	5.4	627,699	5.6	1,424,345	12.8	1,465,855	13.2	1,323,913	11.9
NYS	1,140,669	5.8	1,089,889	5.6	2,340,360	12.0	2,767,246	14.2	2,653,535	13.6

Population Stratified by Age, 2020												
	40-49 years		**50-59 years**		**60-69 years**		**70-79 years**		**>80 years**		**<18 years**	
	N	%	N	%	N	%	N	%	N	%	N	%
Dutchess	37,609	12.8	35,771	12.2	40,707	13.1	21,507	7.3	13,373	4.6	55,351	18.9
Orange	48,221	12.6	52,568	13.8	41,141	10.8	22,506	5.9	12,990	3.4	97,529	25.5
Putnam	13,112	13.3	16,165	16.4	13,246	13.4	7,883	8.0	3,800	3.8	19,591	19.8
Rockland	35,859	11.0	41,835	12.9	34,319	10.5	21,207	6.5	13,926	4.3	91,903	28.3
Sullivan	8,937	11.9	11,118	14.8	10,182	13.5	6,970	9.3	2,805	3.7	16,012	21.3
Ulster	21,433	12.0	27,505	15.4	25,136	14.1	14,714	8.2	8,611	4.8	31,538	17.7
Westchester	130,335	13.5	140,028	14.5	111,714	11.6	68,809	7.1	48,074	5.0	212,908	22.0
Mid-Hudson	294,079	12.7	324,990	14.0	276,445	11.9	205,546	8.9	162,159	7.0	524,832	22.6
NYS excl NYC	1,338,891	12.0	1,612,404	14.5	1,393,886	12.5	822,041	7.4	520,353	4.7	2,333,673	21.0
NYS	2,401,554	12.3	2,659,416	13.6	2,265,306	11.6	1,346,039	6.9	850,835	4.4	4,071,142	20.9

Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-Year Estimates, Table S0101 https://data.census.gov/cedsci/table?q=s0101&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119_1600000US3651000&tid=ACSST5Y2020.S0101

RACE/ETHNICITY

In 2020, the majority of the population in the M-H Region and NYS were non-Hispanic White (61.6% and 55.2%, respectively). The Hispanic population was the second most predominant racial/ethnic group, followed by the non-Hispanic Black population. Within the M-H Region, Westchester County had the highest Hispanic population (25.0%), the highest non-Hispanic Black population (13.4%), and the highest non-Hispanic Asian population (6.1%). Westchester County's racial/ethnic profile is most like that of NYS'; however, the percentage of non-Hispanic Whites significantly increases when looking at NYS excluding NYC [see Table 23].

Table 23

Population Stratified by Race/Ethnicity, 2020

	Non-Hispanic White		Non-Hispanic Black		Non-Hispanic Asian		Non-Hispanic Other*		2 or more races	
	N	%	N	%	N	%	N	%	N	%
Dutchess	207,050	70.5	29,153	9.9	9,955	3.4	1,871	0.6	8,538	2.9
Orange	241,184	63.1	38,454	10.1	10,757	2.8	2,522	0.7	8,904	2.3
Putnam	76,625	77.6	2,741	2.8	2,058	2.1	551	0.6	1,351	1.4
Rockland	204,650	62.9	36,313	11.2	19,376	6.0	1,926	0.6	808	1.5
Sullivan	53,148	70.6	5,806	7.7	1,218	1.6	808	1.1	2,028	2.7
Ulster	137,257	77.0	9,834	5.5	3,217	1.8	1,203	0.7	8,060	4.5
Westchester	510,754	52.7	130,047	13.4	58,651	6.1	8,091	0.9	19,753	2.0
Mid-Hudson	1,430,668	61.6	252,348	10.9	105,232	4.5	16,972	0.7	49,442	2.1
NYS excl NYC	8,089,565	72.6	942,416	8.5	471,861	4.2	71.944	0.6	262,673	2.4
NYS	10,766,297	55.2	2,737,471	14.0	1,657,284	8.5	165,674	0.8	467,416	2.4

Population Stratified by Race/Ethnicity, 2020

	Hispanic White		Hispanic Black		Hispanic Asian		Hispanic Other*		Hispanic, 2 or more races	
	N	%	N	%	N	%	N	%	N	%
Dutchess	18,493	6.3	2,279	0.8	143	0.040	9,785	3.3	6,257	2.1
Orange	35,937	9.4	3,341	0.9	173	0.050	28,531	7.5	12,274	3.2
Putnam	7,323	7.4	608	0.8	5	0.005	5,766	5.8	1,686	1.7
Rockland	22,823	7.0	3,172	1.0	98	0.030	24,599	7.6	7,344	2.3
Sullivan	5,838	7.8	353	0.5	74	0.100	3,928	5.2	2,128	2.8
Ulster	8,806	5.0	1,025	0.6	75	0.040	4,870	2.7	4,024	2.3
Westchester	87,633	9.0	13,163	1.4	823	0.100	109,085	11.3	30,738	3.2
Mid-Hudson	186,853	8.0	23,941	1.0	1,391	0.050	186,564	8.0	64,451	2.8
NYS excl NYC	607,194	5.5	63,864	0.6	22,268	0.200	416,673	3.7	187,342	1.7
NYS	1,393,748	7.1	264,930	1.4	34,106	0.200	1,590,960	8.2	454,137	2.3

**: Other includes American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander.*

Note: The Census Bureau collects racial data in accordance with guidelines provide by the US Office of Management and Budget, and these data are based on self-identification. People who identify with more than one race may choose to provide multiple races in response to the race question. For ethnicity, the OMB standards classify individuals in one of two categories: "Hispanic or Latino" or "Not Hispanic or Latino." The Census Bureau uses the term "Hispanic or Latino" interchangeably with the term "Hispanic," and also refer to this concept as "ethnicity."

Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-Year Estimates, Table B03002
https://data.census.gov/cedsci/table?q=b03002&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119_1600000US3651000&tid=ACSDT5Y2020.B03002

SPOKEN LANGUAGE

According to the *American Community Survey*, the base population for the spoken language demographic category was people aged five years and older. Of this population, English was the most common spoken language in the M-H Region and NYS. A significant portion of the population spoke a language other than English at home, specifically in Rockland and Westchester Counties (41.4% and 33.7%, respectively). The Spanish speaking population was highest in Westchester County (19.9%) compared to the other counties in the M-H Region [see Table 24].

Table 24

Population Stratified by Spoken Language, 2020

	Only English		Language other than English		Spanish		Other Indo-European languages		Asian and Pacific Islander languages		Other languages	
	N	%	N	%	N	%	N	%	N	%	N	%
Dutchess	237,186	84.7	42,906	15.3	21,722	7.8	11,811	4.2	6,078	2.2	3,295	1.2
Orange	267,978	75.1	88,664	24.9	46,941	13.2	33,598	9.4	5,403	1.5	2,722	0.8
Putnam	75,600	80.2	18,686	19.8	9,863	10.5	6,595	7.0	1,350	1.4	878	0.9
Rockland	175,137	58.6	123,657	41.4	41,973	14.0	65,179	21.8	11,529	3.9	4,976	1.7
Sullivan	59,764	84.2	11,192	15.8	6,249	8.8	4,022	5.7	525	0.7	396	0.6
Ulster	152,418	89.3	18,175	10.7	10,157	6.0	5,526	3.2	1,753	1.0	739	0.4
Westchester	606,394	66.3	308,453	33.7	182,295	19.9	76,663	8.4	33,268	3.6	16,227	1.8
Mid-Hudson	1,574,477	72.0	611,733	28.0	319,200	14.6	203,394	9.3	59,906	2.7	29,233	1.3
NYS excl NYC	8,722,683	82.8	1,806,704	17.2	853,048	8.1	603,645	5.7	244,451	2.3	105,560	1.0
NYS	12,799,886	69.7	5,574,294	30.3	2,702,957	14.7	1,601,709	8.7	939,221	5.1	330,407	1.8

Note: The American Community Survey asks respondents to report whether they sometimes or always spoke a language other than English at home. People who knew languages other than English but did not use them at home, who only used them elsewhere, or whose usage was limited to a few expressions or slang were excluded.

Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-year estimates, Table S1601
https://data.census.gov/cedsci/table?q=s1601&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119_1600000US3651000&tid=ACSST5Y2020.S1601

EDUCATIONAL ATTAINMENT

According to the *American Community Survey*, the base population for the educational attainment demographic category were people aged 25 years and older [see Table 25]. Of this population, when looking at the M-H Region, NYS, and NYS excluding NYC, the largest portion of residents had a high school degree (25.5%, 23.4%, and 26.9%, respectively) [see Table 26].

Within the seven counties of the M-H Region, Westchester, Putnam, and Rockland Counties had the highest percentage of people with bachelor's degrees (24.5%, 23.1%, and 22.9%, respectively), while Sullivan had the lowest percentage (14.6 %). Ulster, Orange, and Dutchess Counties had the highest percentage of people with associate degrees (10.7%, 10.7%, and 10.5%, respectively). A significant portion of the population in the M-H Region were high school graduates or held a bachelor's degree [see Table 26].

Table 25

Population 25 years and older, 2020	
	Population
Dutchess	206,608
Orange	244,598
Putnam	70,813
Rockland	203,609
Sullivan	53,315
Ulster	130,502
Westchester	670,717
Mid-Hudson	1,580,162
NYS excl NYC	7,715,731
NYS	13,649,157

Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-year estimates, Table S1501
https://data.census.gov/cedsci/table?q=s1501&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119_1600000US3651000&tid=ACSST5Y2020.S1501

Table 26

Population Stratified by Educational Attainment, 2020								
	Less than 9th grade		9th to 12th grade, no diploma		High school graduate or equivalent		Some college, no degree	
	N	%	N	%	N	%	N	%
Dutchess	6,304	3.1	11,997	5.8	54,492	26.4	36,913	17.9
Orange	9,124	3.7	15,682	6.4	69,904	28.6	48,452	19.8
Putnam	2,037	2.9	2,938	4.1	18,672	26.4	11,863	16.8
Rockland	10,789	5.3	12,615	6.2	44,649	21.9	34,579	17.0
Sullivan	2,708	5.1	4,244	8.0	17,230	32.3	9,412	17.7
Ulster	3,700	2.8	7,829	6.0	37,604	28.8	24,154	18.5
Westchester	38,766	5.8	37,610	5.6	127,493	19.0	89,471	13.3
Mid-Hudson	73,428	4.6	92,915	5.8	370,044	23.4	254,844	16.1
NYS excl NYC	287,412	3.7	434,406	5.6	2,074,762	26.9	1,302,134	16.9
NYS	820,567	6.0	923,323	6.8	3,474,389	25.5	2,109,389	15.5

Population Stratified by Educational Attainment, 2020						
	Associate degree		Bachelor's degree		Graduate or professional degree	
	N	%	N	%	N	%
Dutchess	21,686	10.5	40,068	19.4	35,148	17.0
Orange	26,139	10.7	43,331	17.7	31,966	13.1
Putnam	6,350	9.0	16,351	23.1	12,602	17.8
Rockland	15,727	7.7	46,584	22.9	38,666	19.0
Sullivan	5,563	10.4	7,808	14.6	6,350	11.9
Ulster	13,948	10.7	23,177	17.8	20,090	15.4
Westchester	43,847	6.5	164,540	24.5	168,990	25.2
Mid-Hudson	133,260	8.4	341,859	21.6	313,812	19.9
NYS excl NYC	826,436	10.7	1,514,154	19.6	1,276,427	16.5
NYS	1,208,697	8.9	2,854,930	20.9	2,257,862	16.5

Note: The Census Bureau defines educational attainment as the highest level of education that an individual has completed. This is distinct from the level of schooling that an individual is attending.

Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-year estimates, Table S1501 https://data.census.gov/cedsci/table?q=s1501&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119_1600000US3651000&tid=ACSST5Y2020.S1501

INCOME

Income can affect many aspects of life. This includes where people are able to live, the food and health care coverage available, and almost every other social determinant of health.[11]

According to the *American Community Survey*, the base population for the income demographic category were households (all the persons who occupy a housing unit as their usual place of residence) [see Table 27]. Of this population, the largest portion of households in the M-H Region had an income greater than $100,000 in 2020 [see Table 28]. Almost one fourth of the households in Putnam County were making between $100,000 and $149,999 in 2020 (23.3%) [see Table 28]. There were many households with an income between $50,000 and $74,999 in the M-H Region and NYS; 16.6% of households in Sullivan County had an income within this bracket [see Table 28].

Table 27

Total Households, 2020	
	Households
Dutchess	110,095
Orange	130,428
Putnam	34,915
Rockland	101,167
Sullivan	28,762
Ulster	70,088
Westchester	353,485
Mid-Hudson	828,940
NYS excl NYC	4,225,533
NYS	7,417,224

Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-year estimates, Table S1901
https://data.census.gov/cedsci/table?q=s1901&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119_1600000US3651000&tid=ACSST5Y2020.S1901

[11] Robert Wood Johnson Foundation, 2013, https://www.rwjf.org/en/library/research/2012/12/how-does-employment--or-unemployment--affect-health-.html, accessed July 2022

Table 28

Households Stratified by Income, 2020										
	<$10,000		$10,000-$14,999		$15,000-$24,999		$25,000-$34,999		$35,000-$49,999	
	N	%	N	%	N	%	N	%	N	%
Dutchess	4,734	4.3	3,963	3.6	6,826	6.2	7,486	6.8	11,230	10.2
Orange	5,608	4.3	5,217	4.0	9,521	7.3	8,869	6.8	12,521	9.6
Putnam	628	1.8	628	1.8	1,746	5.0	1,432	4.1	2,723	7.8
Rockland	3,440	3.4	3,035	3.0	6,981	6.9	6,475	6.4	8,599	8.5
Sullivan	1,639	5.7	1,467	5.1	2,761	9.6	2,876	10.0	3,710	12.9
Ulster	3,785	5.4	3,154	4.5	6,168	8.8	6,028	8.6	7,780	11.1
Westchester	16,260	4.6	10,605	3.0	21,209	6.0	20,502	5.8	27,572	7.8
Mid-Hudson	36,095	4.4	28,069	3.4	55,212	6.7	53,667	6.5	74,136	8.9
NYS excl NYC	209,792	5.0	162,457	3.8	329,501	7.8	324,332	7.7	452,222	10.7
NYS	474,702	6.4	341,192	4.6	600,795	8.1	563,709	7.6	771,391	10.4

Households Stratified by Income, 2020										
	$50,000-$74,999		$75,000-$99,999		$100,000-$149,999		$150,000-$199,999		>$200,000	
	N	%	N	%	N	%	N	%	N	%
Dutchess	16,734	15.2	13,762	12.5	21,138	19.2	11,340	10.3	12,991	11.8
Orange	19,042	14.6	17,216	13.2	24,912	19.1	13,695	10.5	13,956	10.7
Putnam	4,539	13.0	4,539	13.0	8,135	23.3	4,888	14.0	5,656	16.2
Rockland	12,848	12.7	11,432	11.3	17,704	17.5	11,938	11.8	18,615	18.4
Sullivan	4,774	16.6	3,624	12.6	4,257	14.8	2,071	7.2	1,553	5.4
Ulster	11,985	17.1	8,971	12.8	11,635	16.6	5,397	7.7	5,187	7.4
Westchester	43,832	12.4	37,469	10.6	59,032	16.7	34,995	9.9	82,362	23.3
Mid-Hudson	113,755	13.7	97,014	11.7	146,813	17.7	84,323	10.2	140,319	16.9
NYS excl NYC	669,973	15.9	532,598	12.6	714,386	16.9	367,712	8.7	466,786	11.0
NYS	1,120,001	15.1	890,067	12.0	1,186,756	16.0	623,047	8.4	852,981	11.5

Note: The American Community Survey asks respondents their income in the past 12 months.
Data is provided as a percent of total households in Table S1901. Calculations were made to provide data as a number in Table 28.
Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-year estimates, Table S1901
https://data.census.gov/cedsci/table?q=s1901&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119_1600000US3651000&tid=ACSST5Y2020.S1901

VETERAN STATUS

Veteran status includes men and women who served, but are not currently serving, on active duty in the United States (US) Army, Navy, Air Force, Marine Corps, or the Coast Guard, or who served in the US Merchant Marine during World War II. Some issues that veterans experience following their service include finding a new career path, reestablishing themselves in society and families, and seeking treatment for mental health issues.[12] In the M-H Region, Sullivan County had the highest percentage of civilian veterans (7.0%), almost double the percentage of civilian veterans in Rockland and Westchester Counties (3.6% in each) [see Table 29]. Overall, there is a smaller percentage of civilian veterans in the M-H Region compared to NYS excluding NYC (4.6% vs 6.1%, respectively).

Table 29

Population Stratified by Veteran Status, 2020			
	Civilian Population 18 years and older	**Civilian Veterans**	
	N	N	%
Dutchess	237,974	13,510	5.7
Orange	281,064	18,544	6.6
Putnam	79,123	3,531	4.5
Rockland	233,121	8,450	3.6
Sullivan	59,291	4,139	7.0
Ulster	146,747	7,844	5.3
Westchester	755,743	27,009	3.6
Mid-Hudson	1,793,063	83,027	4.6
NYS excl NYC	8,780,766	533,398	6.1
NYS	15,420,195	676,295	4.4

Note: The American Community Survey asks respondents if they have ever served on active duty in the US Armed Forces.
Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-year estimates, Table S2101
https://data.census.gov/cedsci/table?q=s2101%20&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119_1600000US3651000&tid=ACSST5Y2020.S2101

[12] Blinded Veterans Association, 2019, https://bva.org/challenges-veterans-face-when-leaving-the-military/#:~:text=Many%20veterans%20struggle%20to%20find%20work%20after%20they,the%20education%20that%20is%20necessary%20for%20many%20jobs, accessed July 2022

DISABILITY

According to the World Health Organization (WHO), disability bears three dimensions: impairment to body structure or mental function; activity limitation, such as difficulty hearing, moving, or problem-solving; and participation restrictions in daily activities, such as working, engaging in social or recreational activities, or accessing health care and preventive services.[13] Adults with a disability typically have higher rates of chronic disease, such as obesity, heart disease, and diabetes.[14] Structural and societal barriers can limit the ability to participate in work, recreation, and programs aimed at promoting healthy living for those living with a disability.

Various types of disabilities can affect an individual's quality of life. Types of disability include:

- Independent living disability – difficulty performing tasks or errands alone, such as visiting a doctor's office or shopping due to a physical, mental, or emotional condition
- Cognitive disability – serious difficulty concentrating, remembering, or making decisions due to a physical, mental, or emotional condition
- Self-care disability – difficulty handling tasks, such as dressing or bathing on one's own
- Ambulatory disability – difficulty moving around physically, such as walking or climbing stairs
- Hearing disability – deafness or serious difficulty hearing
- Vision disability – blindness or serious difficulty seeing, even when wearing glasses

In the M-H Region, Sullivan County had the highest percentage of adults living with a disability (15.9%), as well as the highest percentage of adults living with each of the six types of disabilities; Rockland County had the lowest percentage of adults living with a disability (8.7%) [see Table 30].

Table 30

Population Stratified by Type of Disability, 2020

	Total with Any Disability	Independent Living Difficulty	Cognitive Difficulty	Self-care Difficulty	Ambulatory Difficulty	Hearing Difficulty	Vision Difficulty
Dutchess	12.2%	5.9%	4.7%	2.6%	6.3%	3.5%	2.0%
Orange	11.7%	6.2%	5.4%	2.9%	6.3%	3.2%	2.1%
Putnam	9.6%	4.6%	3.5%	2.4%	5.4%	2.8%	1.4%
Rockland	8.7%	4.5%	3.4%	2.2%	4.4%	2.7%	1.4%
Sullivan	15.9%	7.2%	6.4%	3.7%	9.1%	4.4%	3.0%
Ulster	14.4%	6.0%	5.1%	3.0%	7.4%	4.2%	2.3%
Westchester	9.5%	4.8%	3.7%	2.3%	5.3%	2.5%	1.6%
Mid-Hudson	10.7%	4.1%	4.0%	2.4%	5.4%	3.0%	1.8%
NYS	11.6%	5.7%	4.5%	2.7%	6.6%	2.8%	2.1%

Note: Respondents who report any one of the six disability types are considered to have a disability in the American Community Survey. The previous Regional CHA utilized data from the NYSDOH Expanded Behavioral Risk Factor Surveillance System (BRFSS). The data change between the BRFSS and the ACS accounts for the drastic changes between the Regional CHAs.
Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-year estimates, Table S1810
https://data.census.gov/cedsci/table?q=s1810&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119&tid=ACSST5Y2020.S1810

[13] Centers for Disease Control and Prevention, Disability and Health Promotion, 2020, https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html, accessed July 2022

[14] New York State Department of Health, 2019, https://www.health.ny.gov/statistics/prevention/injury_prevention/information_for_action/docs/2019-12_ifa_report.pdf, accessed August 2022

SOCIAL AND PHYSICAL DETERMINANTS OF HEALTH

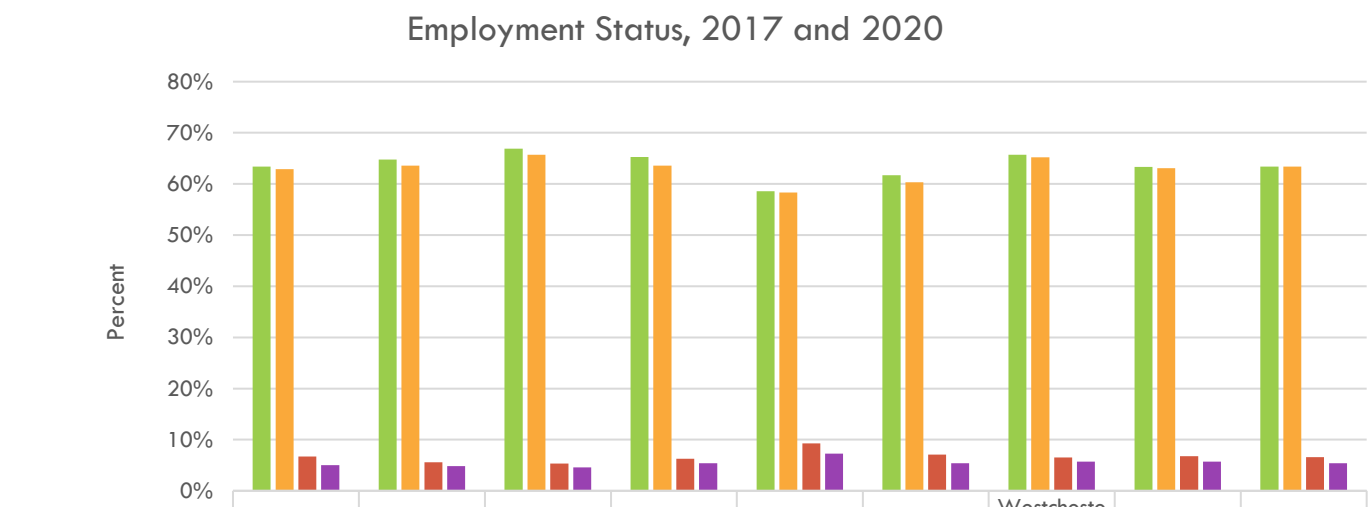
ECONOMIC STABILITY

EMPLOYMENT

Occupation and employment affect individual health in various aspects. Those with steady employment tend to have better health outcomes in both mental and physical health conditions than those who are unemployed. Even within employed populations, there are disparities between those with high-paying and low-paying jobs.[15]

Putnam and Westchester Counties had the highest percentage of individuals in the labor force (65.7% and 65.2%, respectively) which is similar to the 2017 data. Sullivan County had the lowest percentage of individuals in the labor force (58.3%) which is lower than both the New York State (NYS) and United States (US) rate. Putnam County continues to have the lowest unemployment rate (5.3% in 2017 and 4.6% in 2020) in the Mid-Hudson Region (M-H Region). The majority of counties have a lower unemployment rate than NYS' rate of 5.7%, except Westchester (5.7%) and Sullivan which has the M-H Region's highest unemployment rate at 7.3% [see Figure 1].

Figure 1



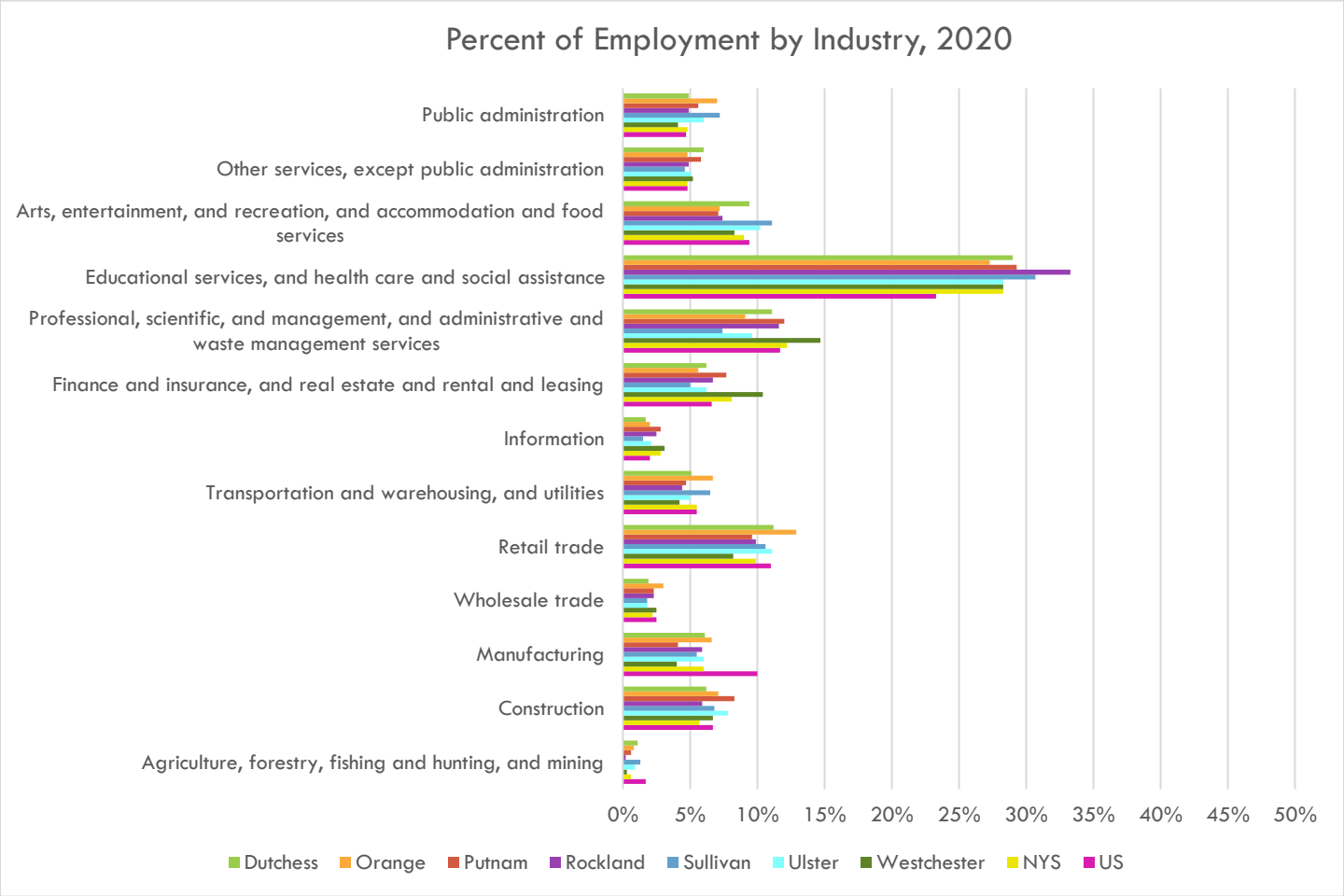
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS	US
In labor force 2017	63.4%	64.8%	66.9%	65.3%	58.6%	61.7%	65.7%	63.3%	63.4%
In labor force 2020	62.9%	63.6%	65.7%	63.6%	58.3%	60.3%	65.2%	63.1%	63.4%
Unemployment 2017	6.7%	5.6%	5.3%	6.3%	9.3%	7.1%	6.5%	6.8%	6.6%
Unemployment 2020	5.0%	4.8%	4.6%	5.4%	7.3%	5.4%	5.7%	5.7%	5.4%

Note: The American Community Survey asks respondents if they have worked in the past week. If the answer is no, they are asked why they are not working. For those who are not working, they are asked whether they plan to return to work, and when they last worked.
Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-year estimates, Table DP03
https://data.census.gov/cedsci/table?q=dp03&g=0100000US_0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119&tid=ACSDP5Y2020.DP03

[15] Robert Wood Johnson Foundation, 2013, https://www.rwjf.org/en/library/research/2012/12/how-does-employment--or-unemployment--affect-health-.html, accessed July 2022

Similar to NYS, as well as the rest of the US, educational services, health care, and social assistance are the largest industries employing civilians aged 16 years and older [see Figure 2].

Figure 2



Note: The American Community Survey utilized industry titles based on the North American Industry Classification System from 2018.
Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-year estimates, Table DP03
https://data.census.gov/cedsci/table?q=dp03&g=0100000US_0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119&tid=ACSDP5Y2020.DP03

FOOD INSECURITY

Food insecurity can be defined as the disruption of food intake or eating patterns due to lack of money and other resources.[16] Access to food plays an essential role in living a healthy lifestyle; those who face food insecurity are often forced to choose between food and other essentials, such as housing, utilities, and medical care.

Children are affected by food insecurity at a higher rate than the general population. Healthy food plays a key role in a child's development. Children who face hunger are more likely to struggle in school, face developmental impairments, and have more social and behavioral problems than children who do not face hunger.[17]

[16] Healthy People 2030, US Department of Health and Human Services, Office of Disease Prevention and Health Promotion, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/food-insecurity, accessed July 2022

[17] Feeding America, 2019, https://www.feedingamerica.org/about-us/press-room/study-shows-children-more-likely-face-hunger-overall-population-across-america, accessed August 2022

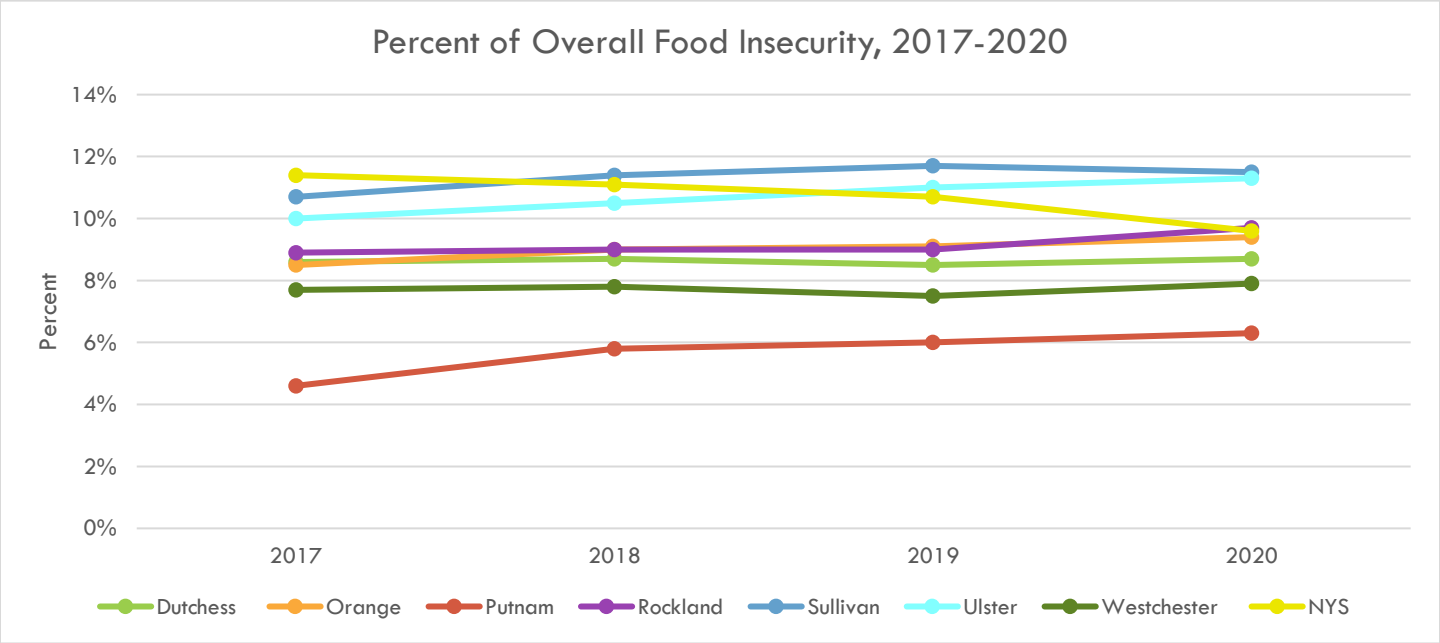
Other populations more vulnerable to food insecurity than the overall population include:[18]

- Senior Populations
- Those living in rural communities
- Black Populations
- Hispanic Populations
- Those living in poverty

Feeding America used data from the US Census Bureau Current Population Survey (CPS) to generate food insecurity rates. The CPS included two questions relevant for this determination. First, a question asks if a household needed more, less, or the same amount of money to meet their basic food needs. Second, those that respond "more" are asked an additional question about how much more money they need to meet their basic food needs.[19]

Putnam County had the lowest food insecurity rate in the M-H Region at 6.3% (2020), and in all the other years listed. The county with the highest rate of food insecurity was Sullivan County at 11.5%, which was greater than NYS' rate of 9.6% [see Figure 3]

Figure 3



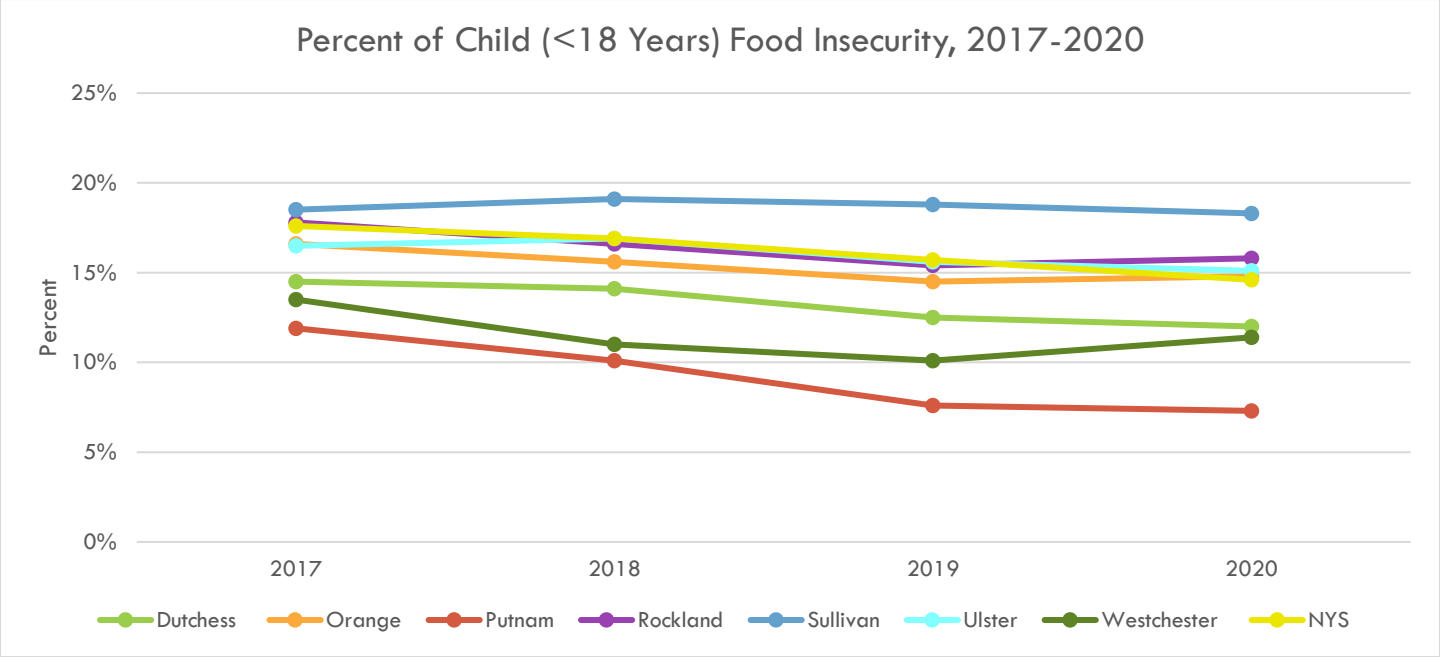
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2017	8.6%	8.9%	4.6%	8.9%	10.7%	10.0%	7.7%	11.4%
2018	8.7%	9.0%	5.8%	9.0%	11.4%	10.5%	7.8%	11.1%
2019	8.5%	9.1%	6.0%	9.0%	11.7%	11.0%	7.5%	10.7%
2020	8.7%	9.4%	6.3%	9.7%	11.5%	11.3%	7.9%	9.6%

Note: Feeding America takes the CPS data and analyzes the relationships between food insecurity and its determinants (i.e., unemployment, poverty, disability, homeownership, and median income), as well as the percentage of the population that is Black and the percentage of the population that is Hispanic. Coefficient estimates from this analysis combined with information on the same variables defined at the county and congressional district levels are generated to estimate food insecurity.
Source: Feeding America, 2022
https://map.feedingamerica.org/county/2020/overall/new-york

[18] Feeding America, https://www.feedingamerica.org/hunger-in-america, accessed July 2022

[19] Feeding America, 2022, https://www.feedingamerica.org/sites/default/files/2022-08/Map%20the%20Meal%20Gap%202022%20Technical%20Brief.pdf?s_src=W228REFER&s_referrer=https%3A%2F%2Fmap.feedingamerica.org%2F&s_channel=https%3A%2F%2Fmap.feedingamerica.org%2F&s_subsrc=https%3A%2F%2Fwww.feedingamerica.org%2Fresearch%2Fmap-the-meal-gap%2Foverall-executive-summary%3F_ga%3D2.162784060.1227641750.1661364121-1299964604.1661364121, accessed August 2022

Figure 4



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2017	14.5%	16.6%	11.9%	17.8%	18.5%	16.5%	13.5%	17.6%
2018	14.1%	15.6%	10.1%	16.6%	19.1%	16.9%	11.0%	16.9%
2019	12.5%	14.5%	7.6%	15.4%	18.8%	15.6%	10.1%	15.7%
2020	12.0%	14.8%	7.3%	15.8%	18.3%	15.1%	11.4%	14.6%

Note: Feeding America takes the CPS data and analyzes the relationships between food insecurity and its determinants (i.e., unemployment, poverty, disability, homeownership, and median income), as well as the percentage of the population that is Black and the percentage of the population that is Hispanic. Coefficient estimates from this analysis combined with information on the same variables defined at the county and congressional district levels are generated to estimate food insecurity.

Source: Feeding America, 2022
https://map.feedingamerica.org/county/2020/child/new-york

HOUSING INSTABILITY

A study published in the *Journal of the American Public Health Association* found that homeless individuals utilized the emergency room almost four times more than other low-income residents.[20] Housing and health are closely related. Poor health is often both the cause and effect of unstable, poor, or non-existent housing. Mental health also plays a large role in the causes and effects of homelessness.

Housing alone does not guarantee better health outcomes in all areas; quality of housing is also important. For example, children who live in public housing are two times more likely to have asthma than other children due to a higher prevalence of mold in public housing.[21]

The median percentage of household income spent on housing in the M-H Region is estimated to be 37.0% by United States Department of Housing and Urban Development (HUD).[22] Households that spend greater than 30.0% of their income on housing are considered cost burdened. Households that are severely cost burdened (spending greater than 50.0% of income on housing) are shown to spend 75.0% less on health care compared to similar households that are living in affordable housing.[23]

Rockland County had both the highest percentage of cost burdened renter occupied units and the highest percentage of severely cost burdened households in the region at 60.7% and 22.0%, respectively. Sullivan County had the lowest percentage of cost burdened renter occupied units (49.5%) and lowest percentage of severely cost burdened households (14.0%) [see Figure 5, Figure 6]. All counties, except for Sullivan, exceeded NYS for both cost burdened renter occupied units and percentage of severely cost burdened households.

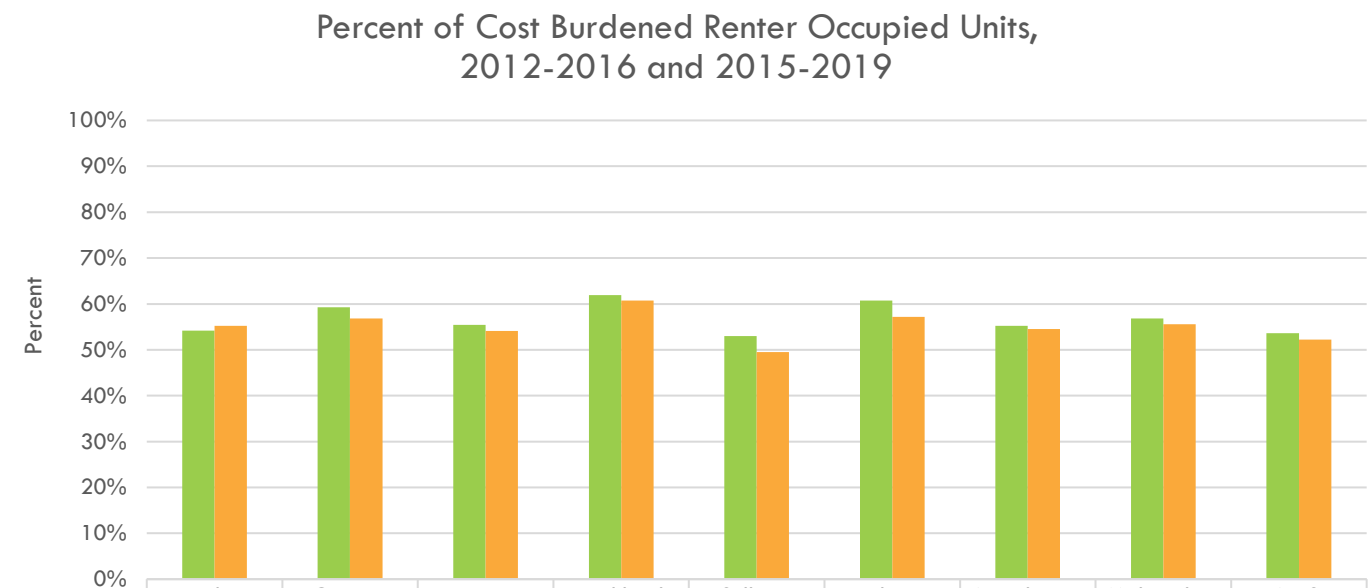
[20] The Atlantic, 2016, https://www.theatlantic.com/politics/archive/2016/01/how-health-and-homelessness-are-connectedmedically/458871/, accessed July 2022

[21] Urban Institute, The National Center for Health in Public Housing, 2017, https://nchph.org/wp-content/uploads/2017/10/UI-2017-Housing-and-Asthma-among-School-Age-Children-AHS-2015-1.pdf, accessed July 2022

[22] Housing Infographic, 2022, https://infograph.venngage.com/ps/BDxQHEPVBXs/housing, accessed August 2022

[23] Joint Center for Housing Studies of Harvard University, 2017, https://www.jchs.harvard.edu/sites/default/files/harvard_jchs_state_of_the_nations_housing_2017_chap6.pdf, accessed July 2022

Figure 5

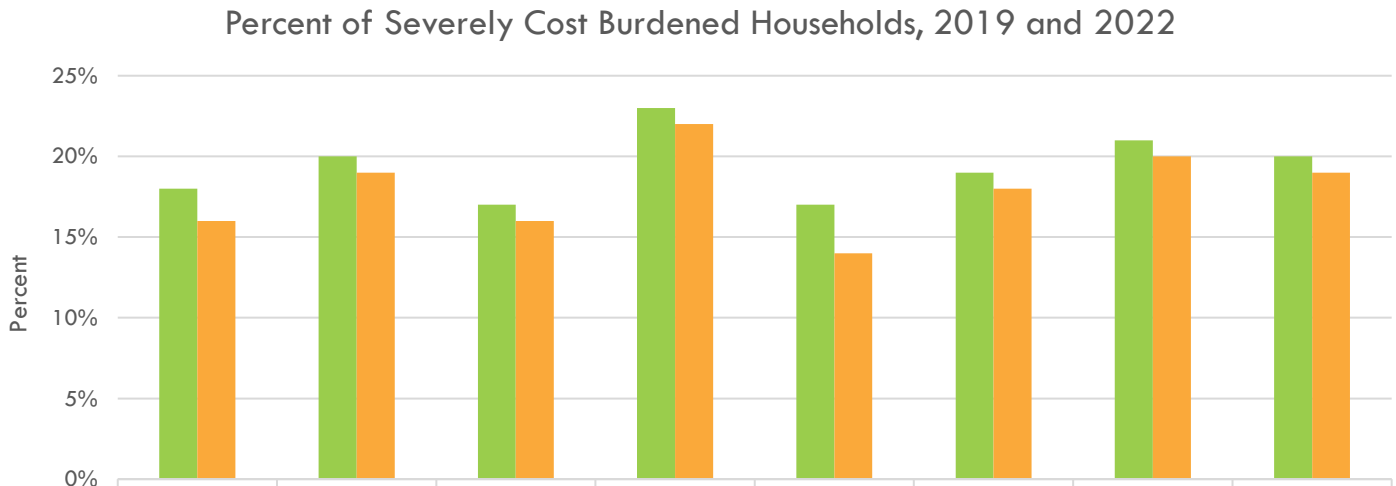


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
2012-2016	54.2%	59.3%	55.4%	61.9%	53.0%	60.7%	55.2%	56.8%	53.6%
2015-2019	55.2%	56.8%	54.1%	60.7%	49.5%	57.2%	54.5%	55.6%	52.2%

Note: The American Community Survey asks respondents if they own or rent the house, apartment, or mobile home they live in. If rented, they ask the monthly rent. Cost burdened is defined as the percentage of renter occupied units in which gross rent is 30% or more of household income.

Source: U.S. Census Bureau; American Community Survey, 2019 American Community Survey 5-year estimates, Table DP04
https://data.census.gov/cedsci/table?q=dp04&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119&tid=ACSDP5Y2019.DP04

Figure 6



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2019	18.0%	20.0%	17.0%	23.0%	17.0%	19.0%	21.0%	20.0%
2022	16.0%	19.0%	16.0%	22.0%	14.0%	18.0%	20.0%	19.0%

Note: Severely cost burdened is defined as the percent of households that spend 50% or more of their household income on housing. The 2019 County Health Rankings (CHR) used data from 2013-2017 and the 2022 CHR used data from 2016-2020 for this measure.

Source: University of Wisconsin Population Health Institute. County Health Rankings & Roadmaps 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/154/data

POVERTY

The *US Census Bureau* defines a family, and every individual in it, as being in poverty when their income is less than the family's threshold. See Table 31 for the defined thresholds, which do not vary geographically.[24]

Table 31

Poverty Threshold for 2021 by Size of Family and Number of Related Children Under 18 Years

Size of family unit	Related children under 18 years								
	None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual):									
Under age 65	$14,097								
Aged 65 and older	$12,996								
Two people:									
Householder under age 65	$18,145	$18,677							
Householder aged 65 and older	$16,379	$18,606							
Three people	$21,196	$21,811	$21,831						
Four people	$27,949	$28,406	$27,479	$27,575					
Five people	$33,705	$34,195	$33,148	$32,338	$31,843				
Six people	$38,767	$38,921	$38,119	$37,350	$36,207	$35,529			
Seven people	$44,606	$44,885	$43,925	$43,255	$42,009	$40,554	$38,958		
Eight people	$49,888	$50,329	$49,423	$48,629	$47,503	$46,073	$44,585	$44,207	
Nine people or more	$60,012	$60,303	$59,501	$58,828	$57,722	$56,201	$54,826	$54,485	$52,386

Source: U.S. Census Bureau, Poverty Thresholds by Size of Family and Number of Children, 2021
https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html

Poverty and health are closely linked. People experiencing poverty often have an increased risk of chronic and mental health conditions, mortality, and lower life expectancies.[25]

New York State Community Action Association's Annual Poverty Report (2022) breaks down poverty rates and statistics by each county.[26]

"Poverty is both a cause and consequence of poor health"[27]

[24] United States Census Bureau, 2022, https://www.census.gov/topics/income-poverty/poverty/guidance/poverty-measures.html, accessed September 2022

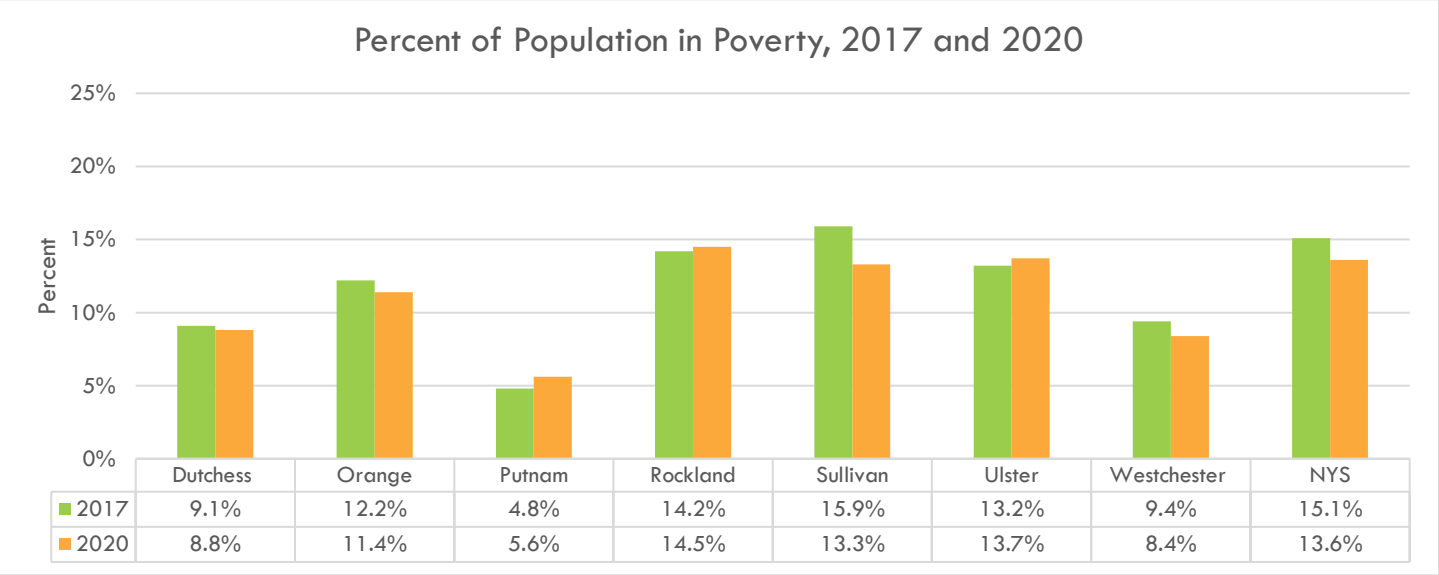
[25] Healthy People 2030, US Department of Health and Human Services, Office of Disease Prevention and Health Promotion, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/poverty, accessed September 2022

[26] New York State Community Action Association, 2022, https://nyscaa.memberclicks.net/assets/docs/PovRep2022/Poverty%20Report_2022.pdf, accessed July 2022

[27] Health Poverty Action, 2018, https://www.healthpovertyaction.org/news-events/key-facts-poverty-and-poor-health/, accessed July 2022

Counties in the M-H Region vary greatly in their rates of poverty, ranging from 5.6% (Putnam) to 14.5% (Rockland). Apart from Rockland and Ulster Counties, all counties in the M-H Region fall at or under NYS' poverty rate of 13.6% [see Figure 7].

Figure 7



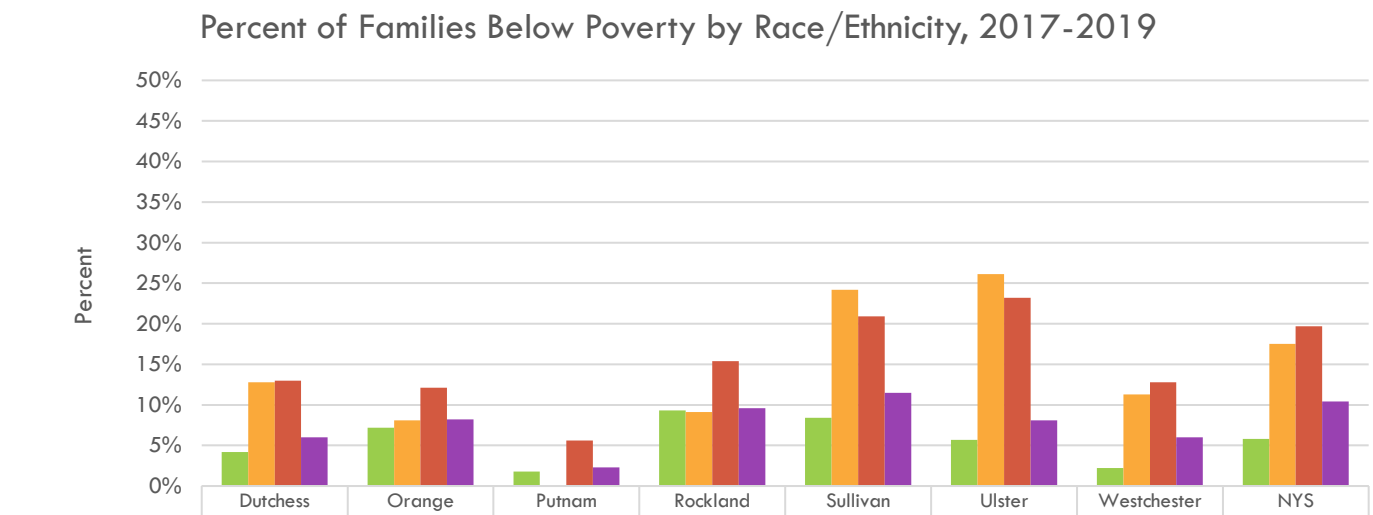
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2017	9.1%	12.2%	4.8%	14.2%	15.9%	13.2%	9.4%	15.1%
2020	8.8%	11.4%	5.6%	14.5%	13.3%	13.7%	8.4%	13.6%

Note: The American Community Survey asks respondents their income in the past 12 months including joint income. This is for income that is received on a regular basis before payments for taxes, social security, etc. If a family's total income is less than the official poverty threshold for a family of that size and composition, they are considered to be in poverty.

Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-year estimates, Table S1701 https://data.census.gov/cedsci/table?q=s1701&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119&tid=ACSST5Y2020.S1701

Poverty varies greatly among racial and ethnic groups. Hispanic populations have the highest rates of poverty in Orange, Putnam, Rockland, and Westchester Counties. In Sullivan and Ulster Counties, non-Hispanic Black populations have the highest rates of poverty. In Dutchess County, non-Hispanic Black and Hispanic populations have about the same poverty rate [see Figure 8].

Figure 8



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
Non-Hispanic White	4.2%	7.2%	1.8%	9.3%	8.4%	5.7%	2.2%	5.8%
Non-Hispanic Black	12.8%	8.1%	0.0%	9.1%	24.2%	26.1%	11.3%	17.5%
Hispanic	13.0%	12.1%	5.6%	15.4%	20.9%	23.2%	12.8%	19.7%
Total	6.0%	8.2%	2.3%	9.6%	11.5%	8.1%	6.0%	10.4%

Note: The Census Bureau collects racial data in accordance with guidelines provided by the US Office of Management and Budget (OMB) and these data are based on self-identification. People who identify with more than one race may choose to provide multiple races in response to the race question. For ethnicity, the OMB standards classify individuals in one of two categories: "Hispanic or Latino" or "Not Hispanic or Latino." The Census Bureau uses the term "Hispanic or Latino" interchangeably with the term "Hispanic," and also refer to this concept as "ethnicity."

The American Community Survey asks respondents their income in the past 12 months including joint income. This is for income that is received on a regular basis before payments for taxes, social security, etc. If a family's total income is less than the official poverty threshold for a family of that size and composition, then they are considered to be in poverty.

Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2021
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

ASSET LIMITED, INCOME CONSTRAINED, EMPLOYED (ALICE)

Asset Limited, Income Constrained, Employed (ALICE) households are defined as those that earn more than the Federal Poverty Level (FPL), but less than the basic cost of living.[28] The ALICE measure takes into account the cost of living for the area being assessed [see Table 32 for a sample budget]. These households are forced to make choices in their budget for these six essential areas: housing, childcare and education, food, transportation, healthcare, and technology.

Table 32

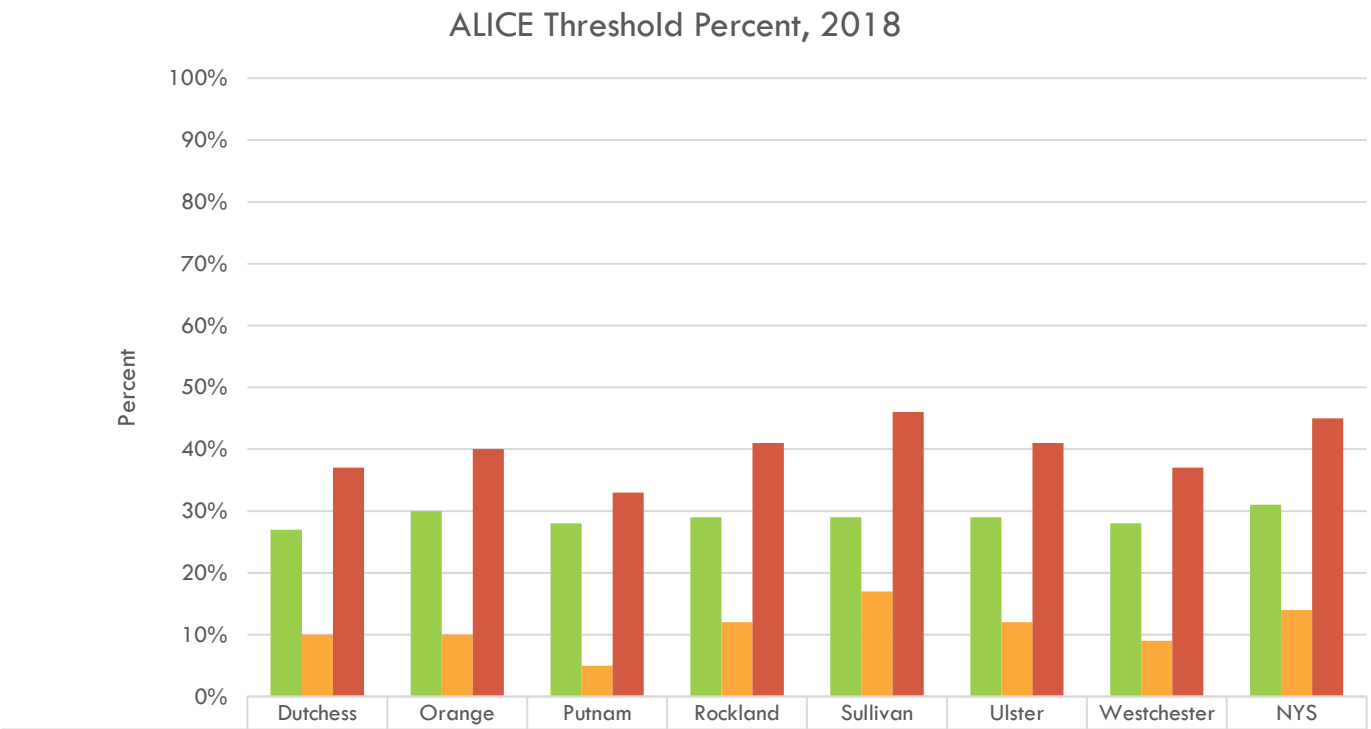
ALICE Household Survival Budget, New York State		
	Single Adult	**2 Adults, 1 Infant, 1 Preschooler**
Monthly Costs		
Housing	$810	$1,091
Child Care	$--	$1,485
Food	$284	$861
Transportation	$334	$757
Health Care	$212	$705
Technology	$55	$75
Miscellaneous	$207	$592
Taxes	$374	$947
Monthly Total	$2,276	$6,513
ANNUAL TOTAL	$27,312	$78,156
Hourly Wage	$13.66	$39.08

Source: United for Alice, 2022
https://www.unitedforalice.org/household-budgets/new-york

[28] United for Alice, 2020, https://www.unitedforalice.org/national-overview, accessed August 2022

Sullivan County had the highest percentage of households that fall below the ALICE Threshold at 46.0%, while Putnam County had the lowest percentage at 33.0% [see Figure 9].

Figure 9



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
ALICE	27.0%	30.0%	28.0%	29.0%	29.0%	29.0%	28.0%	31.0%
Poverty	10.0%	10.0%	5.0%	12.0%	17.0%	12.0%	9.0%	14.0%
Below ALICE Threshold	37.0%	40.0%	33.0%	41.0%	46.0%	41.0%	37.0%	45.0%

Source: United for ALICE, 2022
https://www.unitedforalice.org/state-overview/new-york

EDUCATION

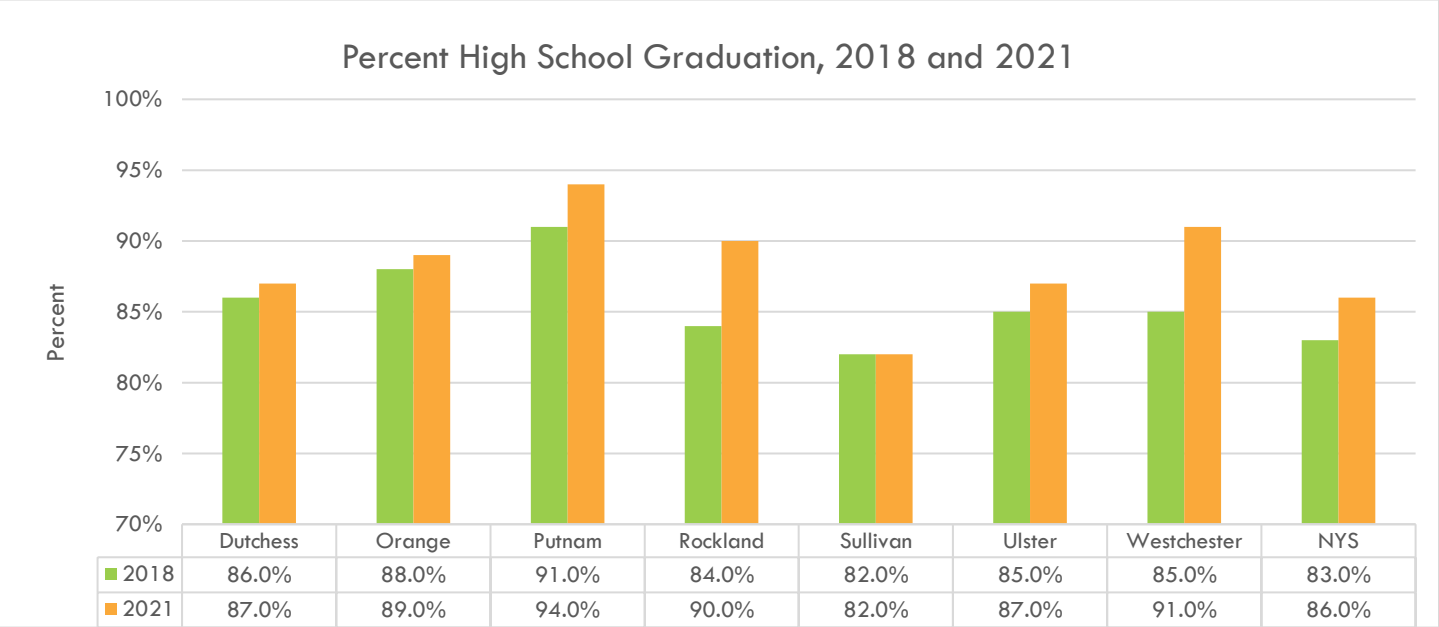
HIGH SCHOOL GRADUATION

High school completion is an important factor of overall health. Those who drop out of high school have an increased risk of premature death, are more likely to report at least one chronic health condition, and more likely to experience poverty when compared to those who have graduated.[29]

Research has revealed several factors that impact the likelihood of graduation include schools with safety issues, teachers' lack of interest in students, and perceived ineffective and unfair punishment.[30] All factors are associated with lower graduation rates.

In the M-H Region, Putnam County has the highest graduation rate (94.0%), while Sullivan County has the lowest (82.0%). All counties in the M-H Region, with the exception of Sullivan County, have a graduation rate above NYS [see Figure 10].

Figure 10



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2018	86.0%	88.0%	91.0%	84.0%	82.0%	85.0%	85.0%	83.0%
2021	87.0%	89.0%	94.0%	90.0%	82.0%	87.0%	91.0%	86.0%

Note: Y-axis does not begin at zero in order to clearly display trend lines.
Graduates include students who received a local diploma or a local diploma with Regents endorsement (Regents diploma). All students who received a Regents diploma (with or without Advanced Designation or Career and Technical Education endorsement) are included in the number of students with Regents diploma.
Source: NYS Department of Education, 2021
https://data.nysed.gov/lists.php?type=county
https://data.nysed.gov/

In accordance with federal regulation, there is a two-part requirement regarding racial and ethnic designation. First, all students must be reported as Hispanic/Latino or not Hispanic/Latino. Second, all students must be reported with at least one race. Students who are reported as Hispanic/Latino, regardless of their race, will be counted as Hispanic/Latino for reporting purposes. Students who are reported as not Hispanic/Latino will

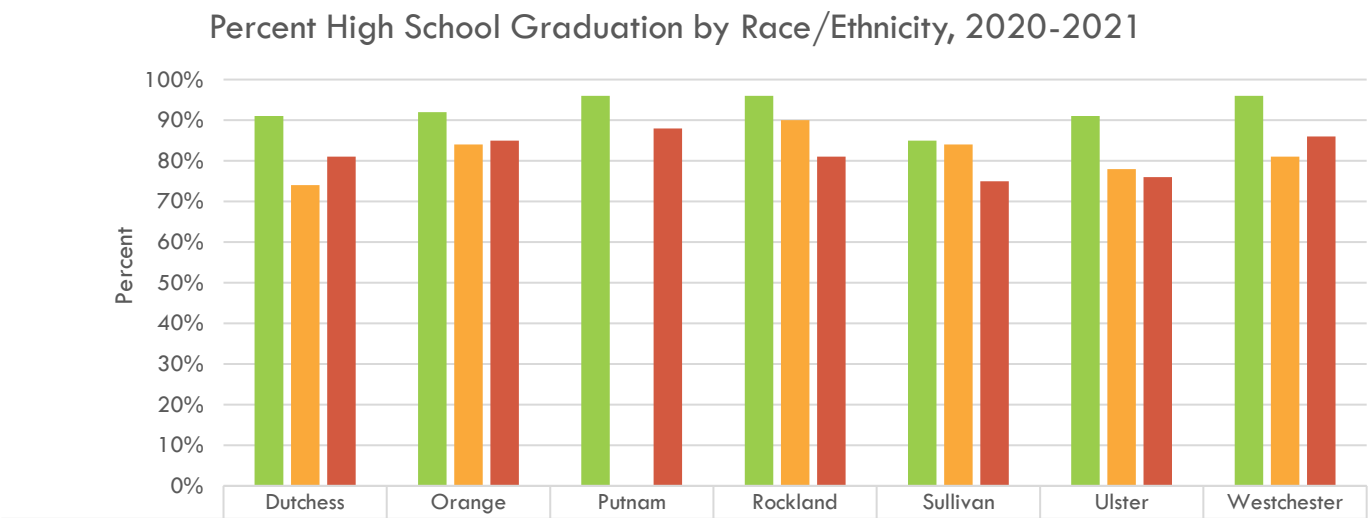
[29] Healthy People 2030, US Department of Health and Human Services, Office of Disease Prevention and Health Promotion, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/high-school-graduation, accessed July 2022

[30] Healthy People 2030, US Department of Health and Human Services, Office of Disease Prevention and Health Promotion, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/high-school-graduation, accessed July 2022

be counted in the race category in which they are reported. Non-Hispanic students who are reported with more than one race category will be reported as Multiracial.

Racial and ethnic disparities in graduation rates exist in the M-H Region. Across all seven counties, non-Hispanic Black and Hispanic students had lower graduation rates than non-Hispanic White students. The largest disparities in the M-H Region exist in Rockland and Ulster Counties between non-Hispanic White and Hispanic students, and in Dutchess County between non-Hispanic White and non-Hispanic Black students. Sullivan County possessed the smallest disparity rate between non-Hispanic White and non-Hispanic Black students [see Figure 11].

Figure 11



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
Non-Hispanic White	91.0%	92.0%	96.0%	96.0%	85.0%	91.0%	96.0%
Non-Hispanic Black	74.0%	84.0%	s	90.0%	84.0%	78.0%	81.0%
Hispanic	81.0%	85.0%	88.0%	81.0%	75.0%	76.0%	86.0%

s: Data is unreliable or missing.
Note: Race or races with which the student primarily identifies are indicated by the student or the parent/guardian.
Source: NYS Department of Education, 2022
https://data.nysed.gov/lists.php?type=county

EARLY CHILDHOOD EDUCATION AND DEVELOPMENT

The early years of a child's life are critical to health and development.[31] The *World Health Assembly* introduced *The Nurturing Care Framework* in 2018, which built upon "state-of-the-art evidence about how child development outcomes are influenced and how they can be improved by policies and interventions."[32] *WHO* characterizes nurturing care as a stable environment that promotes health and optimal nutrition, protects children from threats, and gives them opportunities for early learning, through affectionate interactions and relationships.[33] Components of nurturing care include adequate nutrition, responsive caregiving, security and safety, opportunities for early learning, and good health.[34]

[31] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/ncbddd/childdevelopment/facts.html, accessed July 2022

[32] World Health Organization, 2020, https://apps.who.int/iris/bitstream/handle/10665/331306/9789240002098-eng.pdf?sequence=1&isAllowed=y, accessed July 2022

[33] World Health Organization, 2020, https://apps.who.int/iris/bitstream/handle/10665/331306/9789240002098-eng.pdf?sequence=1&isAllowed=y, accessed July 2022

[34] World Health Organization, 2020, https://apps.who.int/iris/bitstream/handle/10665/331306/9789240002098-eng.pdf?sequence=1&isAllowed=y, accessed July 2022

Early life stress can have long term consequences on a child's mental and physical health, including inadequate coping skills, difficulty regulating emotions, and reduced social functioning compared to other children their age, among other issues. Stressors such as poverty, physical abuse, family instability, and unsafe neighborhoods are all contributors to early life stress.[35]

ADVERSE CHILDHOOD EXPERIENCES

Adverse Childhood Experiences (ACEs) are potentially traumatic events that occur during childhood such as "experiencing violence, abuse, or neglect; having a family member attempt or die by suicide; and witnessing violence in the home."[36] Elements of a child's environment that weaken their sense of safety, stability, and bonding such as substance misuse, mental health complications, or family instability (including divorce or incarceration of parents and relatives) contribute to ACEs. ACEs can have lasting effects on health, behavior, and life potential, including obesity, diabetes, depression, suicide attempts, sexually transmitted infections (STIs), heart disease, cancer, stroke, Chronic Obstructive Pulmonary Disease (COPD), broken bones, smoking, alcoholism, drug use, graduation rates, academic achievement, lost time from work, etc. Growing research shows that toxic stress as a result of ACEs can damage "the most basic levels of the nervous, endocrine, and immune system," and can modify the physical structure of DNA.[37]

ACEs can be prevented by producing and preserving safe, stable, nurturing relationships and environments for children and families. In 2019, Centers for Disease Control and Prevention (CDC) created technical packages to help communities and states prevent the occurrences of ACEs. Strategies include:

- Strengthening economic supports for families
- Promoting social norms that protect against violence and adversity
- Ensuring a strong start for children and paving the way for them to reach their full potential
- Teaching skills to help parents and youth handle stress, manage emotions, and tackle everyday challenges
- Connecting youth to caring adults and activities
- Intervening to lessen immediate and long-term harms

New York State Department of Health (NYSDOH) Behavioral Risk Factor Surveillance System's (BRFSS) data on "Prevalence of Adverse Childhood Experiences, 2018" can be found in the *Mid-Hudson Region Community Health Assessment, 2019-2021*. There have been no updates since then.

ECONOMICALLY DISADVANTAGED

Economically disadvantaged students are characterized as those who participate in, or whose families participate in, one or more economic assistance programs such as free or reduced-price lunch programs, Social Security Insurance (SSI), food stamps, foster care, Family Assistance: Temporary Assistance for Needy Families (TANF), Earned Income Tax Credit (EITC), Home Energy Assistance Program (HEAP), Safety Net Assistance (SNA),

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[35] Healthy People 2030, US Department of Health and Human Services, Office of Disease Prevention and Health Promotion, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/early-childhood-development-and-education, accessed July 2022

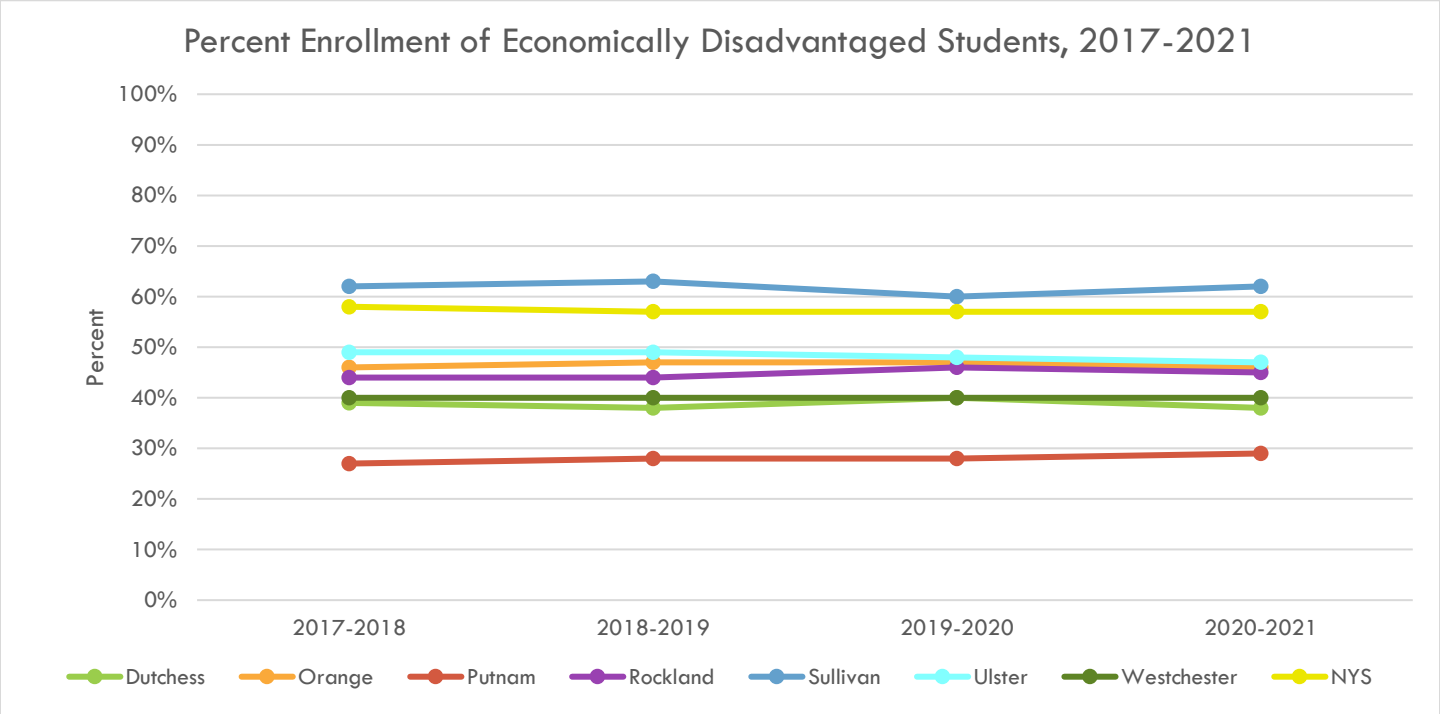
[36] Division of Violence Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2019, https://www.cdc.gov/violenceprevention/pdf/preventingACES.pdf, accessed July 2022

[37] Division of Violence Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2019, https://www.cdc.gov/violenceprevention/pdf/preventingACES.pdf, accessed July 2022

Bureau of Indian Affairs (BIA), or Refugee Assistance (cash or medical assistance). If one student in a family is identified as low income, all students from that household (economic unit) may be identified as low income.[38]

Of the seven counties in the M-H Region, Sullivan County had the highest percentage of economically disadvantaged student enrollment at 62.0% in the 2020-2021 school year. Putnam County had the lowest percentage at 29.0%. Ulster County had a slightly higher percentage of economically disadvantaged student enrollment compared to Orange and Rockland Counties (47.0% vs. 46.0% and 45.0%, respectively) [see Figure 12].

Figure 12



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2017-2018	39.0%	46.0%	27.0%	44.0%	62.0%	49.0%	40.0%	58.0%
2018-2019	38.0%	47.0%	28.0%	44.0%	63.0%	49.0%	40.0%	57.0%
2019-2020	40.0%	47.0%	28.0%	46.0%	60.0%	48.0%	40.0%	57.0%
2020-2021	38.0%	46.0%	29.0%	45.0%	62.0%	47.0%	40.0%	57.0%

Source: NYS Department of Education, 2021
https://data.nysed.gov/lists.php?type=county
https://data.nysed.gov/

ATTAINMENT OF HIGHER EDUCATION

Continuing education after high school has a significant impact on employment options, which impacts lifetime income. This contributes to factors that support better well-being, such as quality housing, higher social status, and ability to live in safe neighborhoods.[39] Men with a bachelor's degree earn an average of $900,000 more in

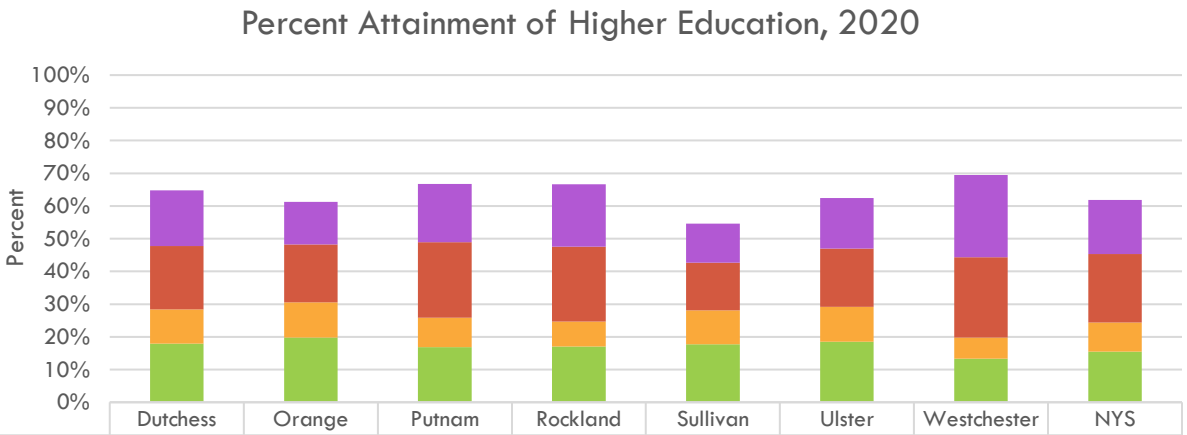
[38] Data.NYSED.gov, New York State Education Department (NYSED), https://data.nysed.gov/glossary.php?report=enrollment, accessed July 2022

[39] Office of Disease Prevention and Health Promotion, https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/enrollment-in-higher, accessed September 2022

their lifetime than high school graduates with no bachelor's degree. Women with a bachelor's degree earn $630,000 more over their lifetime than high school graduates with no bachelor's degree.[40]

Westchester County had the highest attainment of graduate or professional degrees (25.2%) and bachelor's degrees (24.5%) in the M-H Region and exceeded NYS. Orange and Ulster Counties had the highest attainment of associate degrees (10.7%) and exceeded NYS. Orange County had the most residents attending college without receiving a degree (19.8%), while Westchester had the least residents (13.3%) [see Figure 13].

Figure 13



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
Graduate or Professional Degree	17.0%	13.1%	17.8%	19.0%	11.9%	15.4%	25.2%	16.5%
Bachelor's Degree	19.4%	17.7%	23.1%	22.9%	14.6%	17.8%	24.5%	20.9%
Associate Degree	10.5%	10.7%	9.0%	7.7%	10.4%	10.7%	6.5%	8.9%
Some College, No Degree	17.9%	19.8%	16.8%	17.0%	17.7%	18.5%	13.3%	15.5%

Note: The American Community Survey asks respondents what the highest degree or level of school the person has completed.
Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-Year Estimates, Table S1501
https://data.census.gov/cedsci/table?q=s1501&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119&tid=ACSST5Y2020.S1501

LANGUAGE AND LITERACY

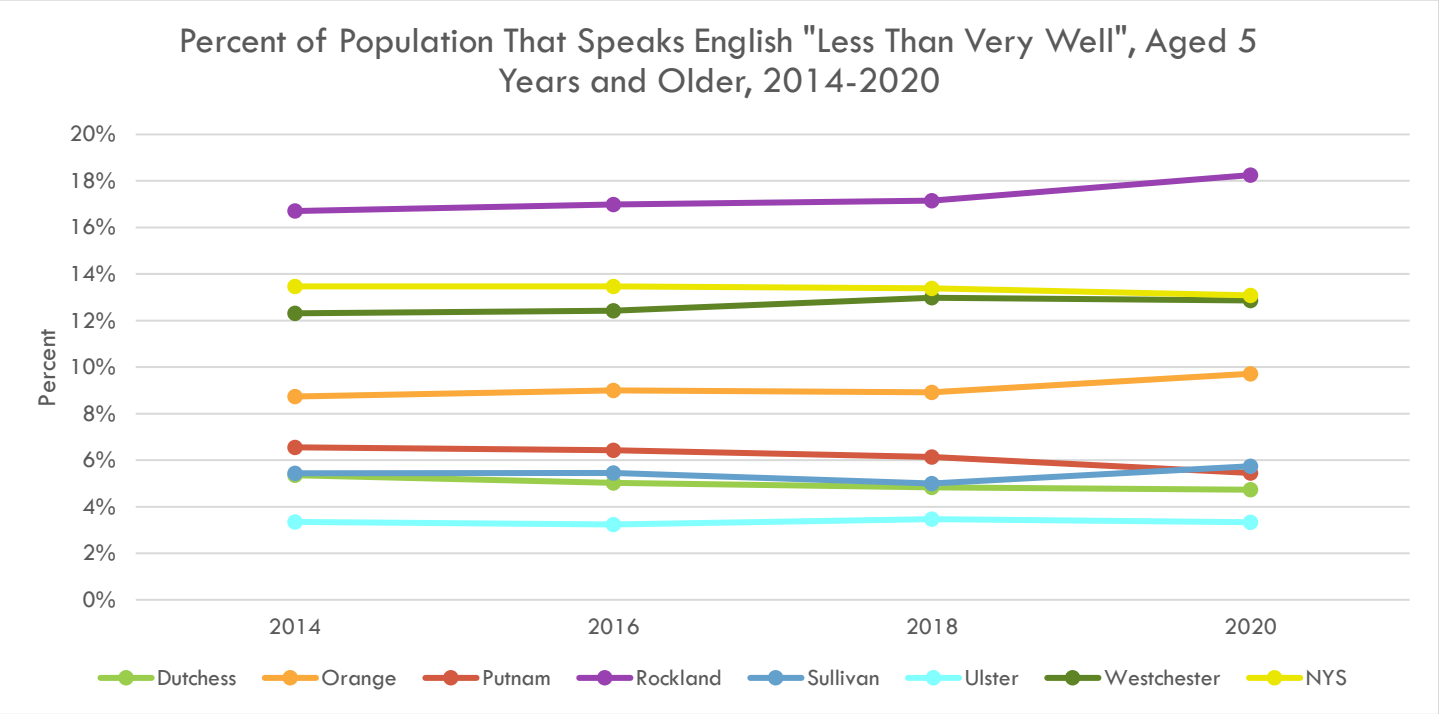
Literacy includes listening, speaking, reading, and writing skills, along with the ability to understand and work with numbers. Low literacy and language skills are associated with poorer outcomes in educational attainment, employment, and health. While limited English proficiency and low literacy differ from health literacy [see page 72], both are barriers to accessing health care, resulting in lower utilization of health services.[41]

Rockland County had the highest percentage of people aged five years and over who spoke English less than very well at 18.3% in 2020. Ulster County had the lowest percentage of people aged five years and over who spoke English less than very well at 3.3% [see Figure 14]. Except for Rockland County, all other counties were lower than the NYS rate.

[40] Social Security Administration, 2015, https://www.ssa.gov/policy/docs/research-summaries/education-earnings.html, accessed September 2022

[41] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/language-and-literacy, accessed July 2022

Figure 14



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2014	5.4%	8.7%	6.6%	16.7%	5.4%	3.3%	12.3%	13.5%
2016	5.0%	9.0%	6.4%	17.0%	5.4%	3.2%	12.4%	13.5%
2018	4.8%	8.9%	6.1%	17.2%	5.0%	3.5%	13.0%	13.4%
2020	4.7%	9.7%	5.5%	18.3%	5.7%	3.3%	12.9%	13.1%

Note: The previous Mid-Hudson Region Community Health Assessment, 2019-2021, reported this data on populations aged 5-17 years.
Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-Year Estimates, Table S1601
https://data.census.gov/cedsci/table?q=s1601&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119&tid=ACSST5Y2020.S1601

SOCIAL AND COMMUNITY CONTEXT

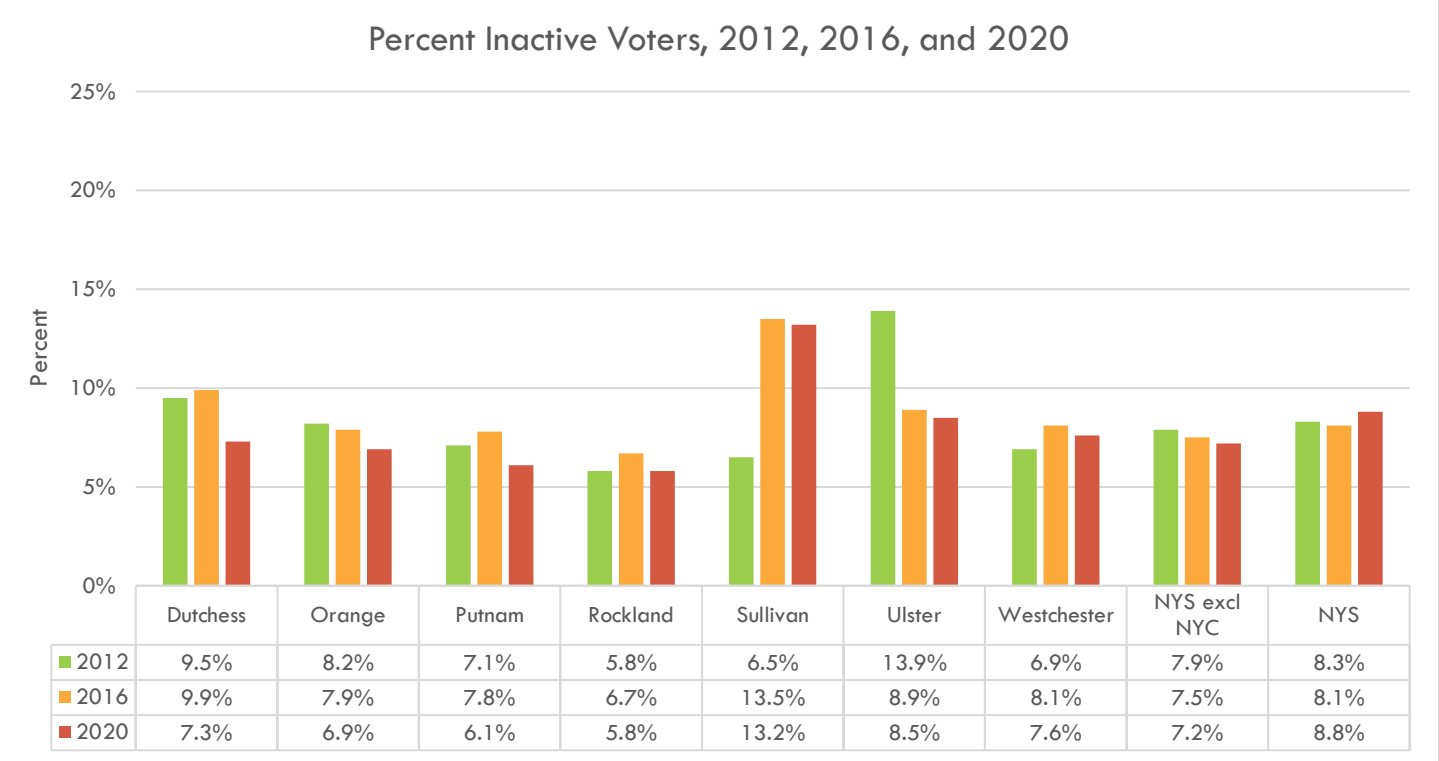
CIVIC PARTICIPATION

Civic participation includes activities in which groups or individuals interact with their community, such as voting, volunteering, and community gardening. Activities can be formal or informal and often benefit society or other group members. Civic participation has been shown to improve health by expanding social networks and social trust, which can increase physical activity and improve mental health.[42]

Participating in the electoral process through voting can be a good indicator of civic participation in a community. In NYS a voter is considered inactive if they have not responded to a residence confirmation notice sent by the local Board of Elections. If a voter has an inactive status and does not vote in two consecutive federal elections, they are then removed from the list of registered voters in the fifth year of inactivity.

In 2020, Sullivan County had the highest percentage of inactive voters at 13.2%. Rockland County had the lowest percentage of inactive voters at 5.8% [see Figure 15].

Figure 15



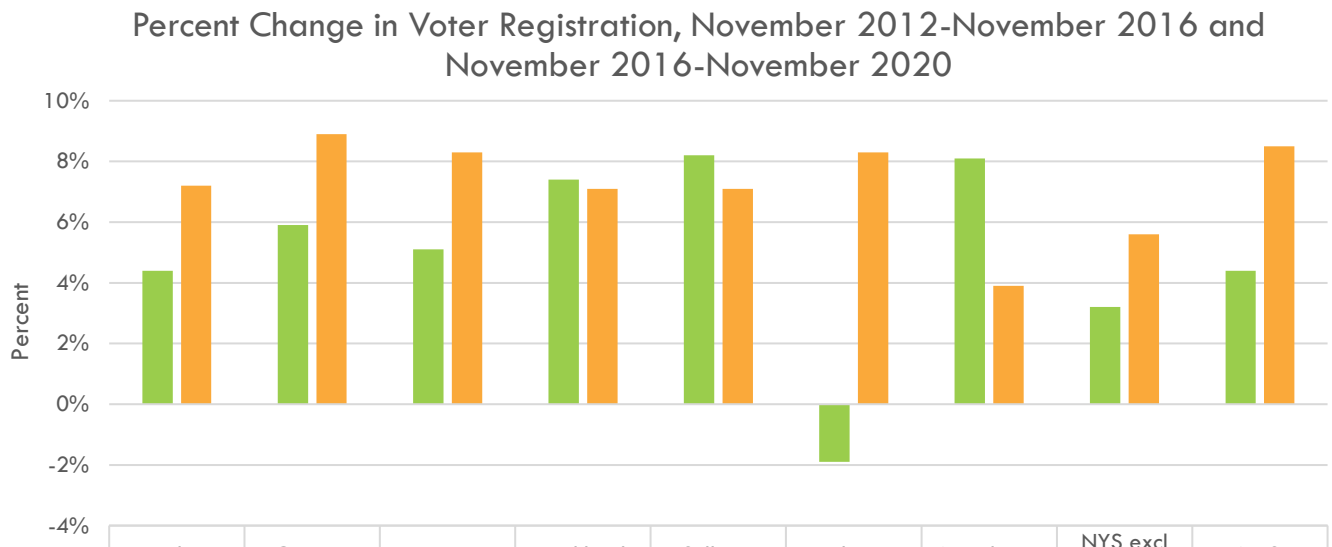
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2012	9.5%	8.2%	7.1%	5.8%	6.5%	13.9%	6.9%	7.9%	8.3%
2016	9.9%	7.9%	7.8%	6.7%	13.5%	8.9%	8.1%	7.5%	8.1%
2020	7.3%	6.9%	6.1%	5.8%	13.2%	8.5%	7.6%	7.2%	8.8%

Source: NYS Board of Elections, 2022
https://www.elections.ny.gov/EnrollmentCounty.html

[42] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/civic-participation, accessed July 2022

All counties' voter registration increased between the federal elections of 2016 and 2020. Orange County saw the largest jump, with registration increasing 8.9%, while Westchester County had the lowest increase at 3.9% [see Figure 16].

Figure 16



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2012 to 2016	4.4%	5.9%	5.1%	7.4%	8.2%	-1.9%	8.1%	3.2%	4.4%
2016 to 2020	7.2%	8.9%	8.3%	7.1%	7.1%	8.3%	3.9%	5.6%	8.5%

Source: NYS Board of Elections, 2021
https://www.elections.ny.gov/EnrollmentCounty.html

Disconnected youth are teenagers and young adults between the ages of 16 and 19 who are neither working nor attending school.[43] This metric is an indicator for how young people are faring while transitioning into adulthood. This vulnerable population is cut off from resources, people, and experiences that help them gain knowledge, skills,[44] capital,[45] and a sense of purpose.[46]

Sullivan County had the highest percentage of disconnected youth (17.0% in 2016-2020), while Westchester County had the lowest (4.0%) [see Figure 17].

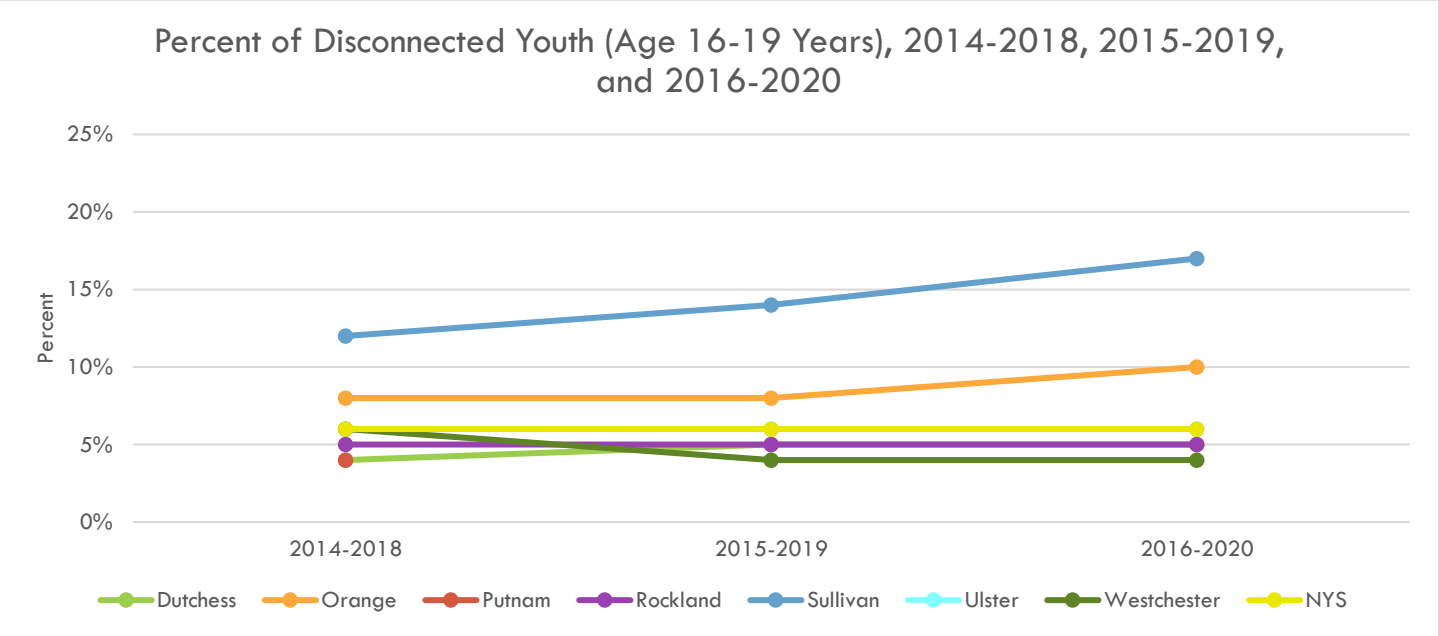
[43] University of Wisconsin Population Health Institute, County Health Rankings & Roadmaps, Robert Wood Johnson Foundation, 2022, https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/149/description, accessed September 2022

[44] Measure of America, http://measureofamerica.org/disconnected-youth/, accessed July 2022

[45] National Institute of Food and Agriculture, United States Department of Agriculture, 4-H National Headquarters, 2017, https://www.nifa.usda.gov/sites/default/files/resource/disconnected-youth-fact-sheet-2017-08-11.pdf, accessed July 2022

[46] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/civic-participation, accessed September 2022

Figure 17



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2014-2018	4.0%	8.0%	4.0%	5.0%	12.0%	6.0%	6.0%	6.0%
2015-2019	5.0%	8.0%	s	5.0%	12.0%	6.0%	6.0%	6.0%
2016-2020	5.0%	10.0%	s	5.0%	17.0%	6.0%	4.0%	6.0%

s: Unreliable or missing data.
Source: University of Wisconsin Population Health Institute. County Health Rankings & Roadmaps, 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/149/data

DISCRIMINATION

Healthy People 2030 defines discrimination as a socially structured action that is unjustified or unfair and harms individuals or groups.[47] Discrimination is inflicted by privileged/powerful groups socially interacting in ways that are detrimental to other groups in order to preserve their power. This type of treatment can adversely affect health, whether the discrimination is perceived to be intentional or unintentional. "Discrimination can be understood as a social stressor that has a physiological effect on individuals (e.g., irregular heartbeat, anxiety, heartburn) that can be compounded over time and can lead to long-term negative health outcomes."[48]

Discrimination can be measured by every day or major discriminatory events. Residential segregation is an example of major discrimination, as it stems from structural racism. Causes vary and include being refused to be rented to or being unfairly denied a bank loan. The implications of residential segregation are extensive, impacting quality of education, access to healthy food options and physical activities, safety, and transportation, and contribute to disparities in health status across groups.[49]

[47] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/discrimination, accessed July 2022

[48] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/discrimination, accessed October 2022

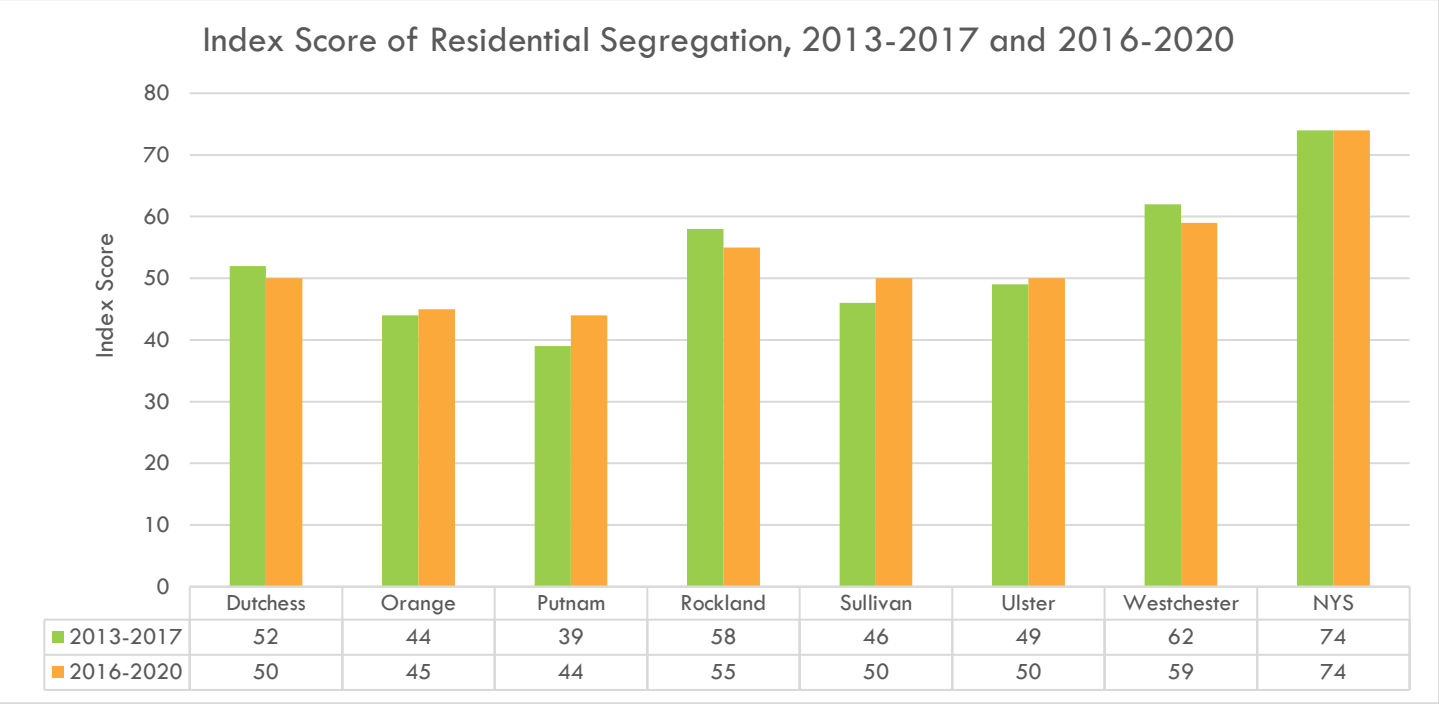
[49] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/discrimination, accessed October 2022

In the US, residential segregation between non-Hispanic Black and non-Hispanic White populations is a key determinant of health disparity, leading to poor health outcomes including mortality and reproductive and chronic diseases.[50]

Data produced by *County Health Rankings & Roadmaps* around residential segregation uses the *American Community Survey* to measure the distribution of non-Hispanic Black and non-Hispanic White residents across census tracks. The index is used to measure residential segregation; zero represents complete integration, while 100 is complete segregation. The index score can also represent the percentage of either non-Hispanic Black or non-Hispanic White residents who would have to move to a different geographic area in order to produce a distribution that matches that of the larger area.

Westchester County had the highest index score of residential segregation in the M-H Region at 59, still falling under NYS' score of 74. The county with the lowest index score was Putnam County with a score of 44. The M-H Region is more integrated than NYS [see Figure 18].

Figure 18



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2013-2017	52	44	39	58	46	49	62	74
2016-2020	50	45	44	55	50	50	59	74

Note: Index of dissimilarity where higher values indicate greater residential segregation between Black and White County residents.
Source: University of Wisconsin Population Health Institute. County Health Rankings & Roadmaps 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/141/data

[50] University of Wisconsin Population Health Institute, County Health Rankings and Roadmaps, Robert Wood Johnson Foundation, 2022, https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/141/description, accessed July 2022

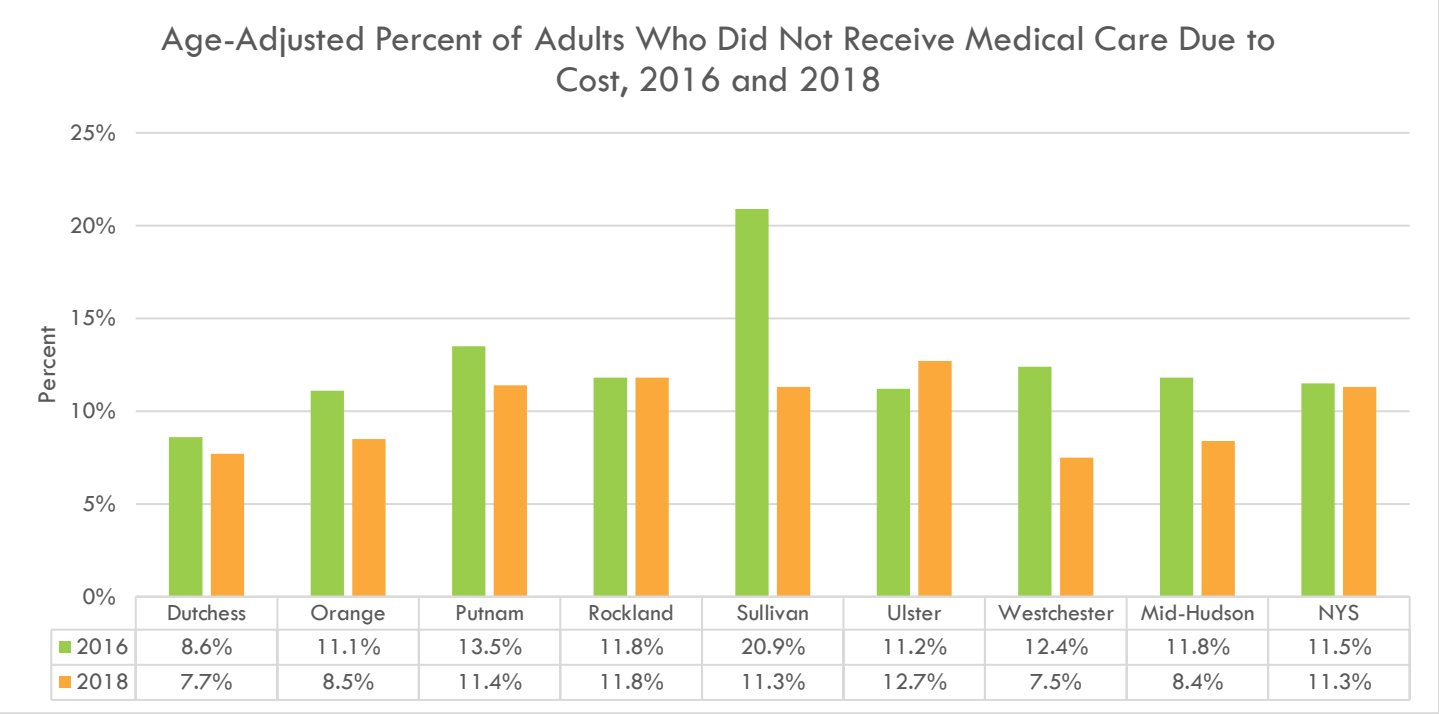
HEALTH CARE ACCESS AND USAGE

"The National Academies of Sciences, Engineering, and Medicine define access to health care as the 'timely use of personal health services to achieve the best possible health outcomes."[51] Barriers to health care include lack of access to transportation, lack of health insurance coverage, and inadequate providers per capita.

Cost is a prominent barrier to receiving health services and can deter people from seeking preventative care. The Survey of Income and Program Participation in 2017 showed that 19% of US households carried medical debt, meaning that people were unable to pay medical costs up front or when they received care.[52]

Within the M-H Region, the highest percentage of adults who did not receive medical care due to cost was reported in Ulster County at 12.7%. Westchester County had the lowest percentage (7.5%) of adults who did not receive medical care due to cost. The M-H Region (8.4%), Dutchess County (7.7%), Orange County (8.5%), and Westchester County (7.5%) all had a lower percentage than NYS (11.3%) [see Figure 19].

Figure 19



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
2016	8.6%	11.1%	13.5%	11.8%	20.9%	11.2%	12.4%	11.8%	11.5%
2018	7.7%	8.5%	11.4%	11.8%	11.3%	12.7%	7.5%	8.4%	11.3%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

[51] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/access-health-services, accessed July 2022

[52] United States Census Bureau, 2021, https://www.census.gov/library/stories/2021/04/who-had-medical-debt-in-united-states.html, accessed July 2022

HEALTH INSURANCE COVERAGE

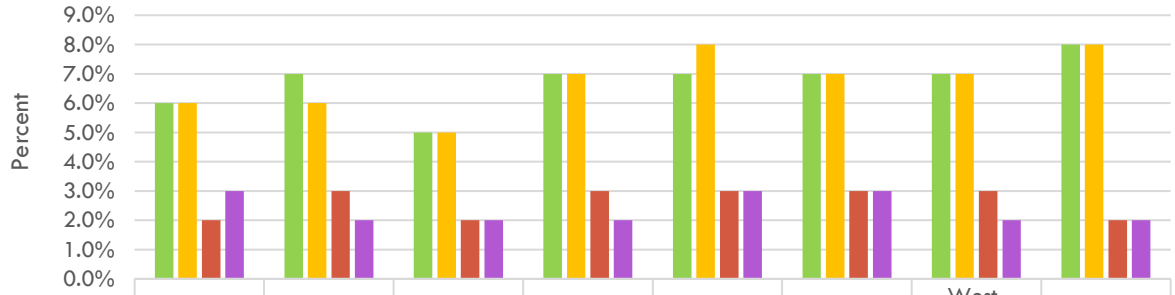
Health insurance coverage is one of the largest factors affecting health care access. Uninsured people are less likely to receive preventative services and treatments than those who are insured, including chronic condition care, dental care, immunizations, and well-child visits.[53] Several government programs, such as Medicaid and the Children's Health Insurance Program, help provide low and no-cost insurance to children who qualify.

The US Census Bureau's Small Area Health Insurance Estimates (SAHIE) program calculates estimates of health insurance coverage. Estimates are created for the population under the age of 65 and for children under the age of 19. According to these estimates, more adults are without health insurance than children in the M-H Region.

Putnam County has the lowest rate of adults without health insurance (5.0%) and Sullivan has the greatest rate (8.0%). Adults in all M-H Region counties, except for Sullivan, have a lower percentage of residents without insurance than NYS. Sullivan County had an increase (1.0%) in adults without health insurance, Orange had a decrease (1.0%), and all other counties stayed the same between 2018 and 2019 [see Figure 20].

Orange, Putnam, Rockland, and Westchester Counties have the same rate of children without health insurance as NYS (2.0%). Dutchess, Sullivan, and Ulster Counties have more children without health insurance (3.0%). Orange, Rockland, and Westchester had a decrease (1.0%), Putnam, Sullivan and Ulster stayed the same, and Dutchess increased (1.0%) between 2018 and 2019 [see Figure 20].

Figure 20



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	West-chester	NYS
Adults Under Age 65 - 2018	6.0%	7.0%	5.0%	7.0%	7.0%	7.0%	7.0%	8.0%
Adults Under Age 65 - 2019	6.0%	6.0%	5.0%	7.0%	8.0%	7.0%	7.0%	8.0%
Children Under Age 19 - 2018	2.0%	3.0%	2.0%	3.0%	3.0%	3.0%	3.0%	2.0%
Children Under Age 19 - 2019	3.0%	2.0%	2.0%	2.0%	3.0%	3.0%	2.0%	2.0%

Note: The US Census asks respondents if they are currently covered by any type of health insurance or health coverage plans.
Source: University of Wisconsin Population Health Institute. County Health Rankings & Roadmaps 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/3/data
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/122/data

[53] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/access-health-services, accessed October 2022

HEALTH PROFESSIONAL SHORTAGE AREAS

Medically Underserved Area (MUA) and Medically Underserved Population (MUP) designations identify geographic areas and populations with a lack of access to primary care services.

MUAs have a shortage of primary care health services for residents within a geographic area. Some examples include a whole county, urban census tracts, or civil divisions. MUPs have a shortage of primary care health services for a specific population subset within an established geographic area.[54] These groups may face economic, cultural, or linguistic barriers to health care.

An Index of Medical Underservice (IMU) score is calculated. An IMU score ranges between 0 (highest need) and 100 (lowest need). In order to qualify as an MUA the score must be less than or equal to 62.0. Areas with limited health care professionals experience hindered health care access, creating longer wait times and delayed care and diagnosis.

Westchester and Orange Counties have the highest number of MUAs and MUPs. Putnam County had no designations [see Table 33].

Table 33

Medically Underserved Areas and Medically Underserved Population (MUP)			
County	**Area Name**	**Designation Type**	**IMU* Score**
Dutchess	Low Income - Poughkeepsie	MUP Low Income	59.2
Dutchess	Migrant & Seasonal Farm Worker - East Dutchess	MUP Low Income	44.8
Orange	Orange Service Area (02397 - Newburgh)	Medically Underserved Area	55.5
Orange	Village of Kiryas Joel Service Area	Medically Underserved Area	45.0
Orange	Village of Walden Service Area	Medically Underserved Area	60.8
Orange	Low Income - Middletown Service Area	MUP Low Income	58.2
Rockland	Village of New Square Service Area	Medically Underserved Area	45.5
Rockland	Low Income - Haverstraw	MUP Low Income	61.6
Sullivan	Low Income - Monticello	MUP Low Income	61.4
Sullivan	Low-income - Western Sullivan Service Area	MUP Low Income	59.3
Sullivan and Ulster	Low Income - Wawarsing/ Fallsburg S Area	MUP Low Income	61.8
Ulster	Plattekill Town - County	Medically Underserved Area	58.8
Westchester	Westchester Service Area (02394 - Yonkers)	Medically Underserved Area	41.2
Westchester	Westchester Service Area (02395 - Mount Vernon)	Medically Underserved Area	54.0
Westchester	Westchester Service Area (02399 - Elmsford)	Medically Underserved Area	61.6
Westchester	Westchester Service Area (02400 - Peekskill)	Medically Underserved Area	58.8

Note: IMU = Index of Medical Underservice*
Source: HRSA Data Warehouse, 2021
https://data.hrsa.gov/tools/shortage-area/mua-find

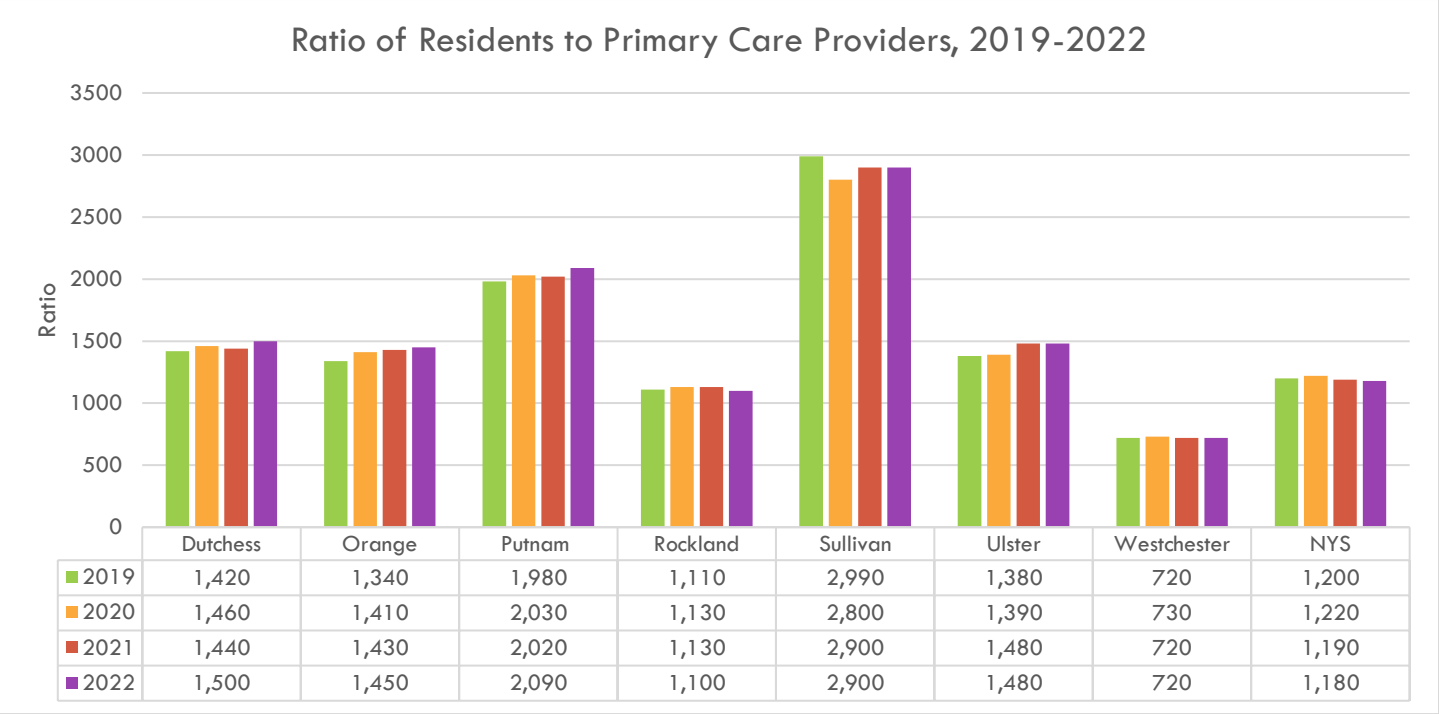
[54] US Department of Health & Human Services, Guidance Portal, 2019, https://www.hhs.gov/guidance/document/hpsa-and-muap-hpsa-scoring-criteria, accessed July 2022

Primary care is effective for preventative care, early detection and treatment of disease, and chronic disease management.[55] Dental care and mental health care are other disciplines that provide preventative care, as well as diagnosis, management, and treatment of diseases and disorders.

When measuring the ratio of population to provider, a higher ratio means less providers per capita, implying less access.

Sullivan County had the highest ratio of residents to primary care providers and the number of providers continues to decrease since 2020. Westchester County had the best resident to provider ratio. Westchester and Rockland had better ratios than NYS (720:1, 1,100:1, and 1,180:1, respectively) [see Figure 21].

Figure 21



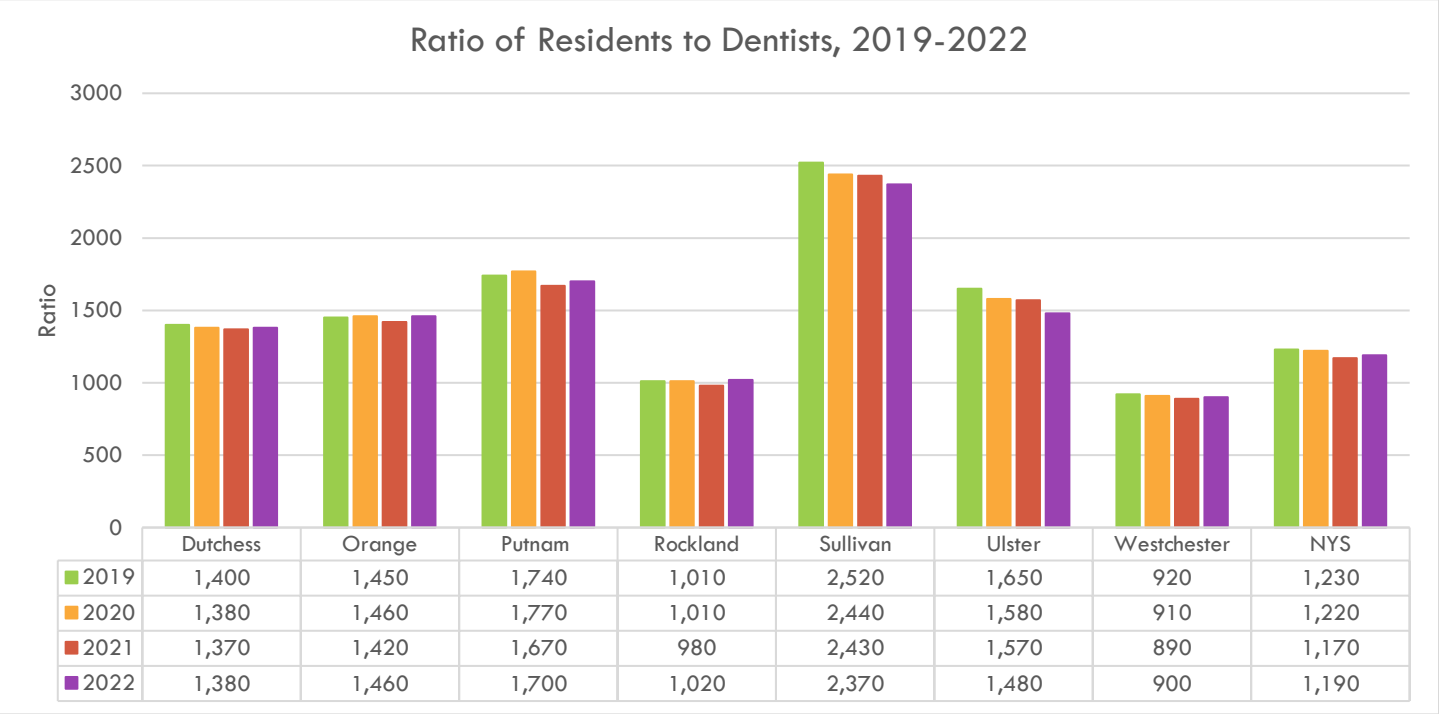
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2019	1,420	1,340	1,980	1,110	2,990	1,380	720	1,200
2020	1,460	1,410	2,030	1,130	2,800	1,390	730	1,220
2021	1,440	1,430	2,020	1,130	2,900	1,480	720	1,190
2022	1,500	1,450	2,090	1,100	2,900	1,480	720	1,180

Source: University of Wisconsin Population Health Institute. County Health Rankings and Roadmaps 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/4/data?sort=sc-0

[55] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/access-primary-care#cit3, accessed July 2022

Sullivan County had the highest ratio of residents to dentists and the number of dentists increased since 2019. Westchester County had the best resident to dentist ratio. Westchester and Rockland had better ratios than NYS (900:1, 1,020:1, and 1,190:1, respectively) [see Figure 22].

Figure 22

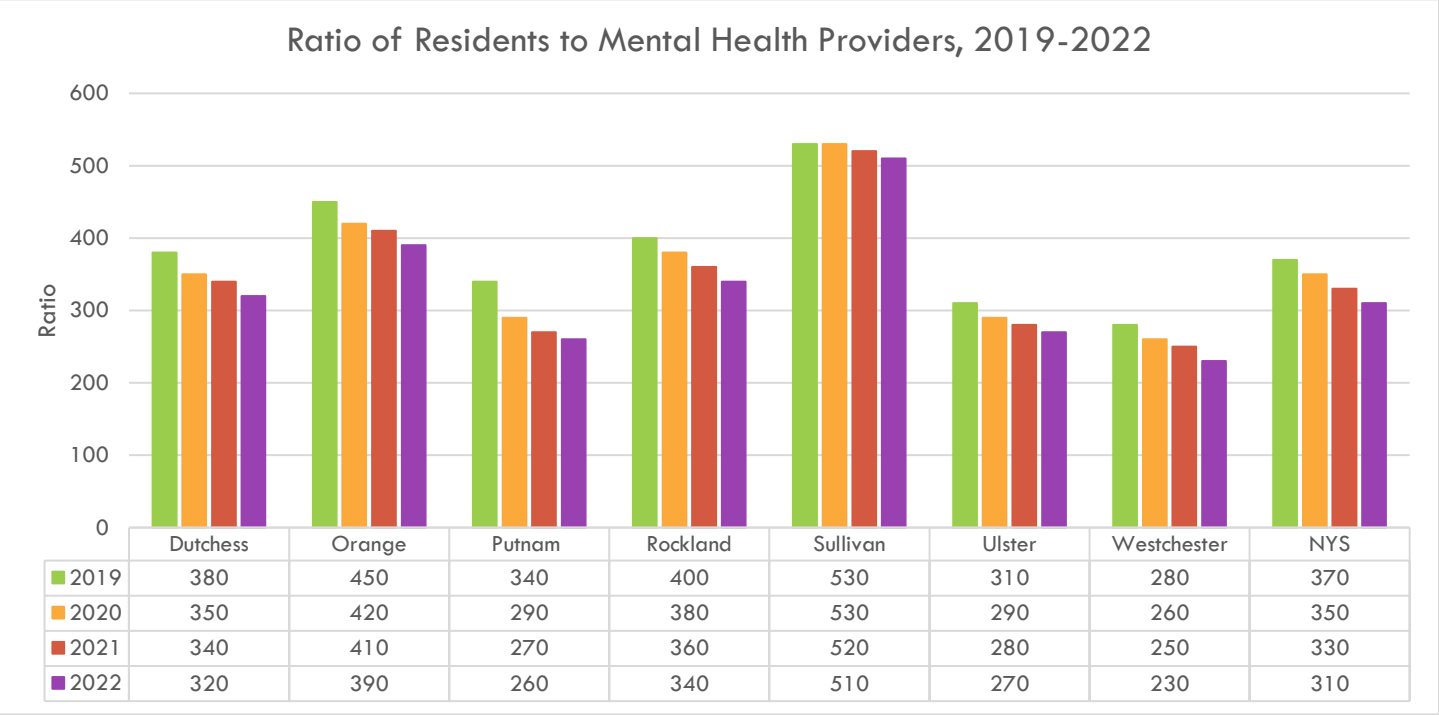


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2019	1,400	1,450	1,740	1,010	2,520	1,650	920	1,230
2020	1,380	1,460	1,770	1,010	2,440	1,580	910	1,220
2021	1,370	1,420	1,670	980	2,430	1,570	890	1,170
2022	1,380	1,460	1,700	1,020	2,370	1,480	900	1,190

Source: University of Wisconsin Population Health Institute. County Health Rankings and Roadmaps 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/88/data?sort=sc-0

Sullivan County had the highest ratio of residents to mental health providers and the number of mental health providers increased since 2019. Westchester County had the best resident to mental health provider ratio. Westchester, Putnam, and Ulster Counties had better ratios than NYS (230:1, 260:1, 270:1, and 310:1, respectively) [see Figure 23].

Figure 23



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2019	380	450	340	400	530	310	280	370
2020	350	420	290	380	530	290	260	350
2021	340	410	270	360	520	280	250	330
2022	320	390	260	340	510	270	230	310

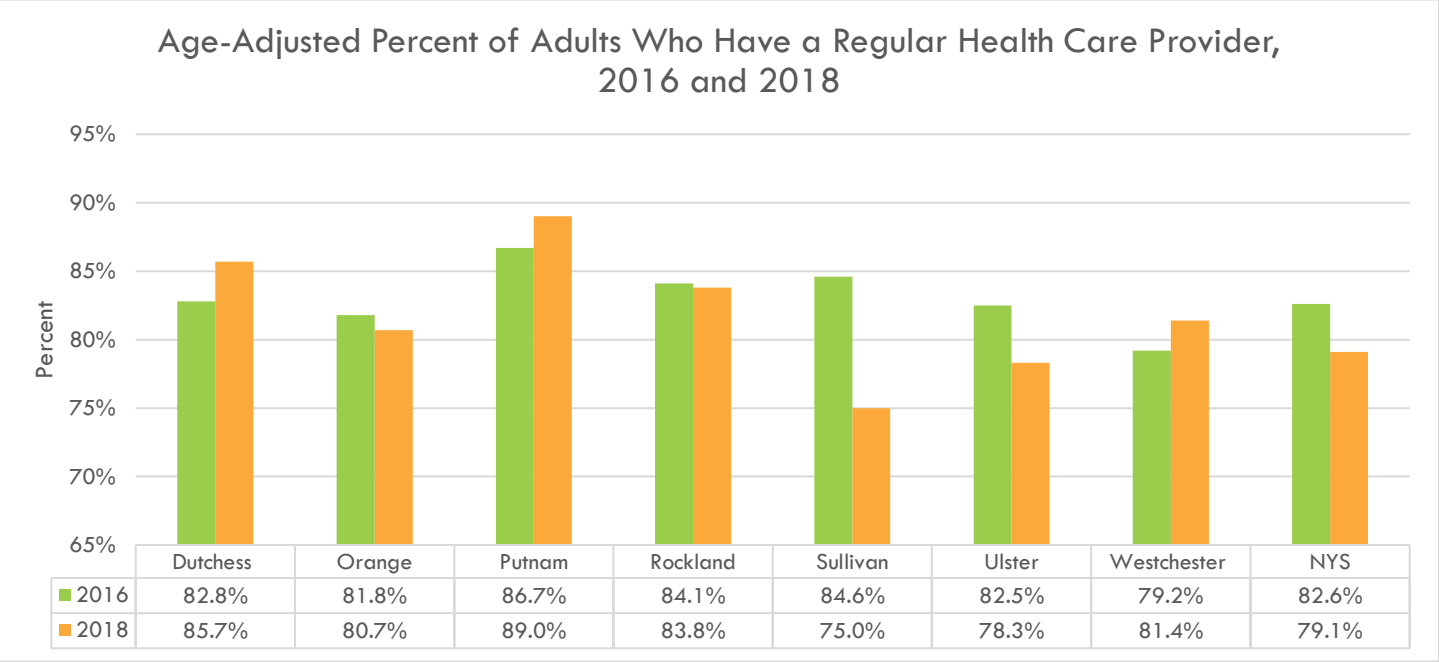
Source: University of Wisconsin Population Health Institute. County Health Rankings and Roadmaps 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/62/data?sort=sc-0

ACCESS TO PRIMARY CARE

Receiving regular primary care services is essential for chronic disease management, preventative care, and early detection. Lack of insurance, low providers per capita, lack of access to transportation, and lack of culturally competent physicians can all be barriers to accessing regular primary care services.[56]

Putnam County had the largest percentage of adults who reported having a regular primary care provider at 89.0%, while Sullivan County had the lowest percentage at 75.0% [see Figure 24]. Except for Ulster and Sullivan, the other M-H Region counties exceeded the NYS rate.

Figure 24



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2016	82.8%	81.8%	86.7%	84.1%	84.6%	82.5%	79.2%	82.6%
2018	85.7%	80.7%	89.0%	83.8%	75.0%	78.3%	81.4%	79.1%

Source: NYS Prevention Agenda Dashboard, 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/dashboard/pa_dashboard&p=it&ind_id=pa4_0

HEALTH CARE USAGE

The American College of Emergency Physicians defines an urgent care center as "a walk-in clinic focused on the delivery of medical care for minor illnesses and injuries in an ambulatory medical facility outside of a traditional hospital-based or freestanding emergency department."[57] Urgent care centers provide quality healthcare for non-life-threatening illnesses and injuries and are frequently used when primary care physician offices are closed.

Emergency departments (ED) are primarily used for life threatening illnesses and injuries requiring immediate attention including heart attack symptoms, poisoning, pregnancy related problems, and uncontrollable bleeding.[58]

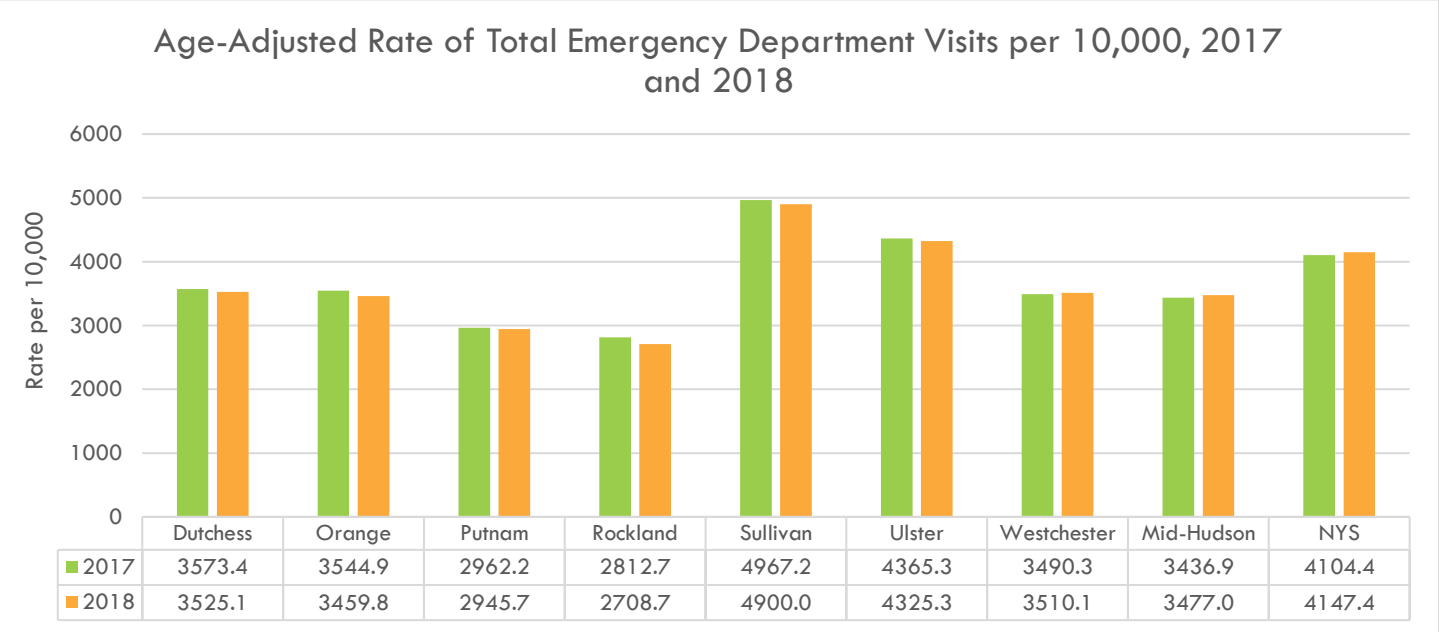
[56] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/access-primary-care, accessed July 2022

[57] American College of Emergency Physicians, 2022, https://www.acep.org/patient-care/policy-statements/urgent-care-centers/, accessed July 2022

[58] Mount Sinai, https://www.mountsinai.org/locations/urgent-care/what-is-urgent-care, accessed July 2022

Sullivan and Ulster Counties had the highest rates of ED visits in 2018 at 4,900.0 and 4,325.3 per 10,000 population, respectively [see Figure 25]. Excluding Sullivan and Ulster Counties, every county in the M-H Region had lower ED visit rates than NYS. Rockland County had the lowest ED visit rate in the M-H Region at 2,708.7 in 2018, followed by Putnam County at 2,945.7 [see Figure 25]. Except for Westchester, all other counties had improvements between 2017 and 2018.

Figure 25



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
2017	3573.4	3544.9	2962.2	2812.7	4967.2	4365.3	3490.3	3436.9	4104.4
2018	3525.1	3459.8	2945.7	2708.7	4900.0	4325.3	3510.1	3477.0	4147.4

Note: Three-year averages are used for counties and single-year estimates are used for Mid-Hudson and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Ne2a

HEALTH LITERACY

Healthy People 2030 addresses both personal and organizational health literacy. Personal health literacy is defined as "the degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others."[59] Organizational health literacy is defined as "the degree to which organizations equitably enable individuals to find, understand, and use information and services to inform health-related decisions and actions for themselves and others."[60]

Limited health literacy negatively affects health and is associated with "less participation in health-promotion and disease-detection activities, riskier health choices, more work accidents, diminished management of chronic diseases, poor adherence to medication, increased hospitalization and rehospitalization, increased morbidity, and premature death."[61] It is important to note that the responsibility of health literacy does not fall solely on the

[59] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/health-literacy-healthy-people-2030, accessed July 2022

[60] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/health-literacy-healthy-people-2030, accessed July 2022

[61] World Health Organization, https://www.who.int/europe/teams/behavioural-and-cultural-insights/health-literacy, accessed July 2022

patient. It is also the responsibility of the service provider and their institution to ensure that resources and information being shared are communicated in an appropriate, understandable way.

Increasing health literacy in populations has positive effects on society, including the notion that "health literate individuals participate more actively in economic prosperity, have higher earnings and rates of employment, are more educated and informed, contribute more to community activities, and enjoy better health and well-being."[62]

NEIGHBORHOOD AND BUILT ENVIRONMENT

ACCESS TO FOODS THAT SUPPORT HEALTHY EATING PATTERNS

Healthy dietary patterns are essential to living a healthy lifestyle. According to the *Dietary Guidelines for Americans 2020-2025*, the core elements of a healthy dietary pattern include vegetables, fruits, whole grains, low-fat dairy or fortified dairy alternatives, protein foods, and plant-based oils.[63] A healthy diet lowers risk of chronic diseases such as obesity, type 2 diabetes, and heart disease.[64] It is also essential for managing chronic conditions and preventing complications for those who have chronic diagnoses.[65]

When measuring food access, travel time to supermarkets, availability of healthy foods, and food prices all play a role.[66] For those without a personal vehicle, convenient public transportation, or a supermarket within walking distance, finding fresh, healthy options can be a challenge. High grocery prices can deter people with lower socioeconomic status from purchasing healthy options, minimizing food access. Low-income communities tend to have more difficulty accessing food, and a study in Detroit found that people living in predominantly Black low-income neighborhoods travel an average of 1.1 miles farther to the closest supermarket than people living in predominantly White low-income neighborhoods.[67]

The County Health Rankings and Roadmaps measure of the food environment accounts for proximity to healthy foods and income. The index is a scale that ranges from zero (worst) to 10 (best). Limited access to healthy foods estimates the percentage of the population that is low income and does not live close to a grocery store. Food insecurity estimates the percentage of the population that did not have access to a reliable source of food during the past year.[68]

Ulster County had the lowest food environment index, while Westchester and Putnam Counties had the highest. The majority of counties fell below NYS' score of 9.0, except for Westchester and Putnam Counties [see Figure 26].

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[62] World Health Organization, https://www.who.int/europe/teams/behavioural-and-cultural-insights/health-literacy, accessed July 2022

[63] Dietary Guidelines for Americans, US Department of Agriculture, Department of Health and Human Services, 2020, https://www.dietaryguidelines.gov/sites/default/files/2021-03/Dietary_Guidelines_for_Americans-2020-2025.pdf, accessed July 2022

[64] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/chronicdisease/resources/publications/factsheets/nutrition.htm, accessed September 2022

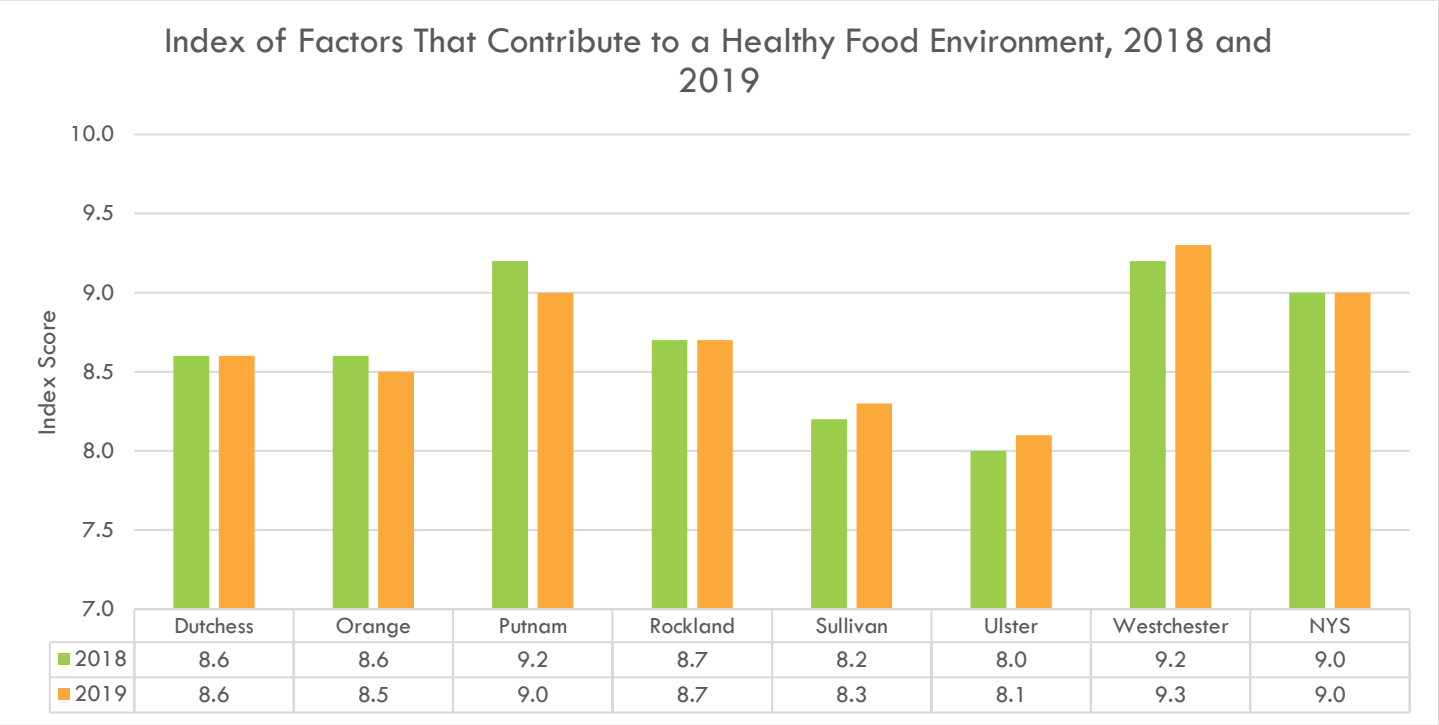
[65] Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity, https://www.cdc.gov/nutrition/about-nutrition/pdfs/Nutrition-Fact-Sheet-H.pdf, accessed July 2022

[66] Economic Research Service, US Department of Agriculture, 2020, https://www.ers.usda.gov/topics/food-choices-health/food-access/, accessed July 2022

[67] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/access-foods-support-healthy-eating-patterns#cit14, accessed July 2022

[68] University of Wisconsin Population Health Institute, County Health Rankings & Roadmaps, Robert Wood Johnson Foundation, 2022, https://www.countyhealthrankings.org/explore-health-rankings/measures-data-sources/county-health-rankings-model/health-factors/health-behaviors/diet-exercise/food-environment-index, accessed July 2022

Figure 26



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2018	8.6	8.6	9.2	8.7	8.2	8.0	9.2	9.0
2019	8.6	8.5	9.0	8.7	8.3	8.1	9.3	9.0

Source: University of Wisconsin Population Health Institute. County Health Rankings & Roadmaps 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/133/data

Limited access to healthy foods and food insecurity are indicators which are both equally weighted in the Food Environment Index.[69] To see a county comparison of food insecurity, see Figure 3.

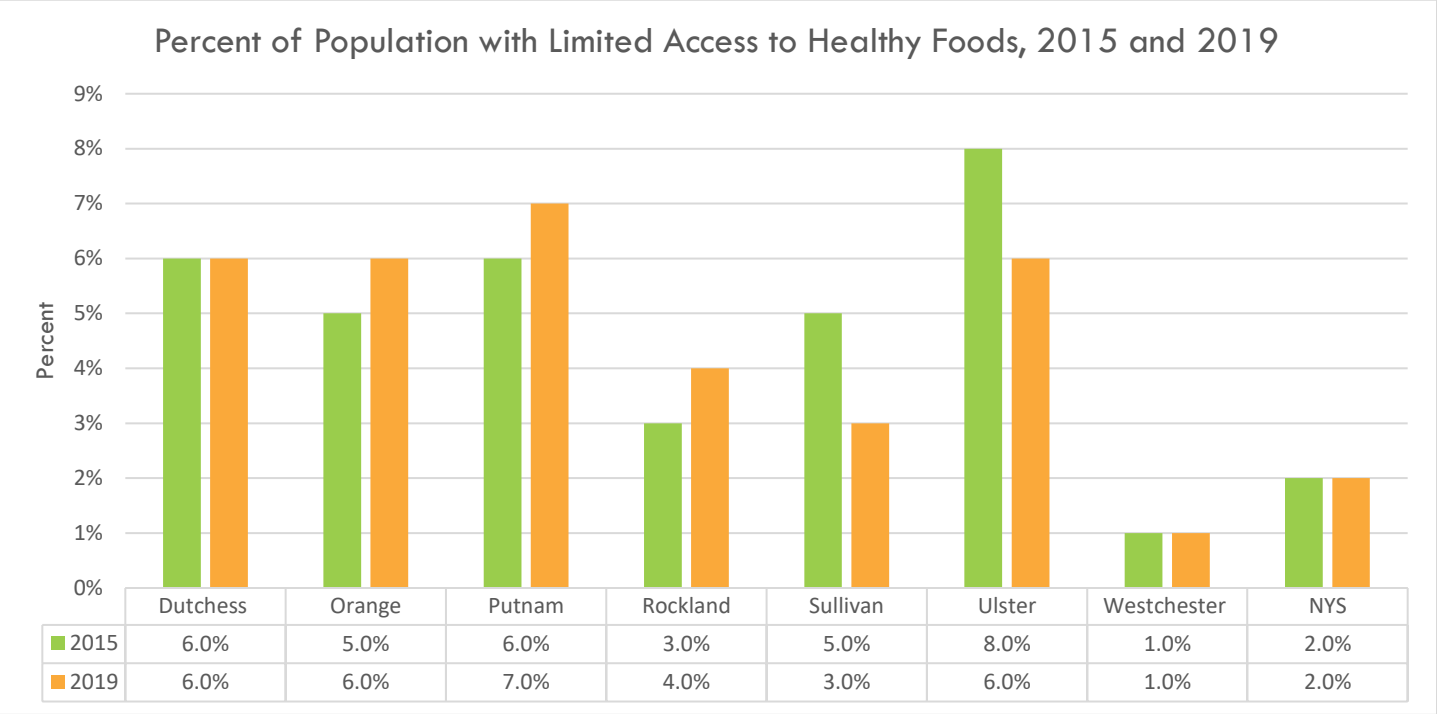
The "limited access to healthy foods" indicator measures the percentage of the population that is low-income and does not live close to a grocery store. "Low-income is defined as having an annual family income of less than or equal to 200% of the federal poverty line."[70]

According to this measure, 7.0% of Putnam County's population has limited access to healthy food, making it the highest in the M-H Region and eight times more than Westchester County, which has the lowest percentage at 1.0%. According to this indicator, most of the counties in the M-H Region fall above NYS [see Figure 27].

[69] University of Wisconsin Population Health Institute, County Health Rankings and Roadmaps, Robert Wood Johnson Foundation, 2022, https://www.countyhealthrankings.org/explore-health-rankings/measures-data-sources/county-health-rankings-model/health-factors/health-behaviors/diet-exercise/food-environment-index, accessed August 2022

[70] University of Wisconsin Population Health Institute, County Health Rankings and Roadmaps, Robert Wood Johnson Foundation, 2022, https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/83/description, accessed July 2022

Figure 27



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2015	6.0%	5.0%	6.0%	3.0%	5.0%	8.0%	1.0%	2.0%
2019	6.0%	6.0%	7.0%	4.0%	3.0%	6.0%	1.0%	2.0%

Note: The most recent data are from 2019.
Source: University of Wisconsin Population Health Institute. County Health Rankings & Roadmaps 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/83/data

CRIME AND VIOLENCE

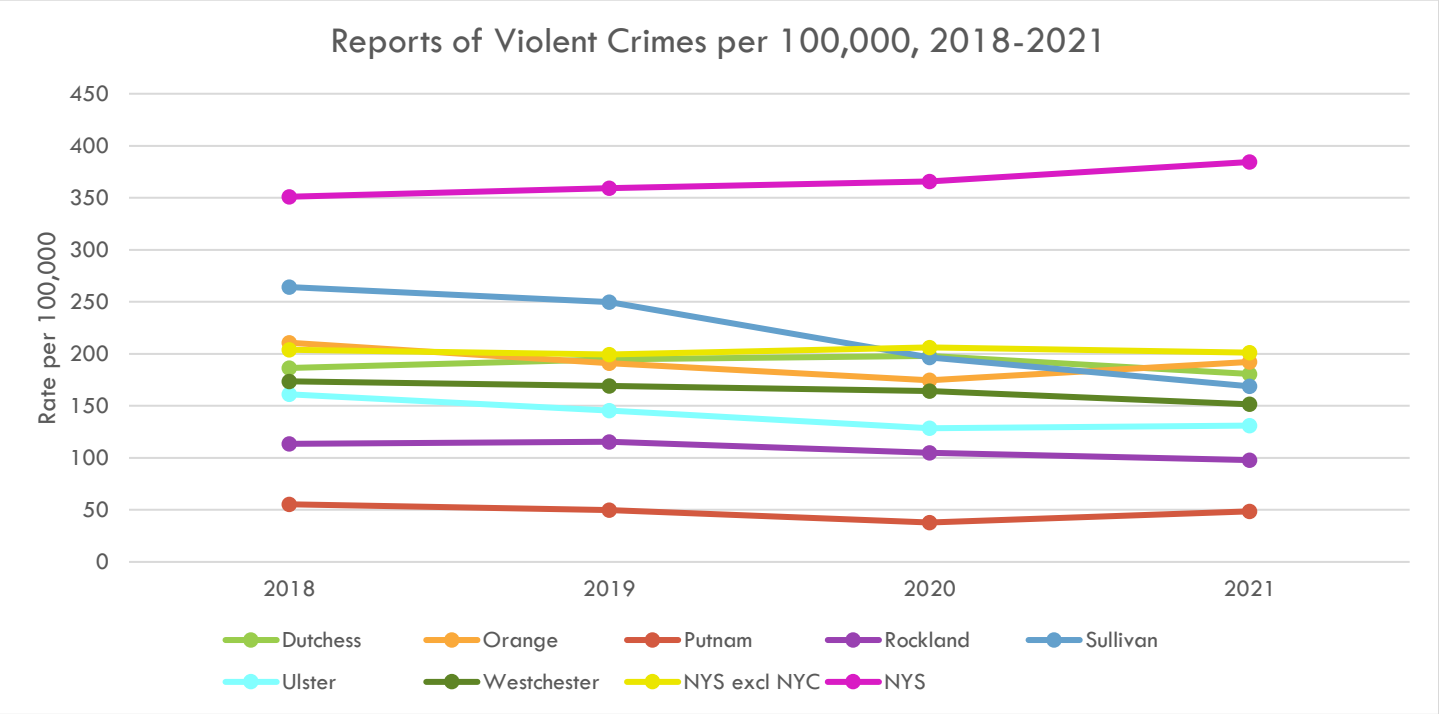
Crime and violence both pose as major public health issues on various levels. Violent crime can affect the quality of life for those it reaches, including victims of violent crimes, witnesses of violent crimes, or residents who hear about violent crimes in their areas. Studies have shown that those who fear crime in their communities engage in less physical activity and as a result may have higher Body Mass Indexes (BMIs) and levels of obesity. Exposure to violence can also have negative impacts on mental health. Consequences can particularly affect children and adolescents. It can increase behavioral problems, depression, anxiety, Post Traumatic Stress Disorder (PTSD), and can lead to risky behavior, such as substance use, risky sexual behavior, and unsafe driving.[71]

The NYS Division of Criminal Justice Services collects crime reports from police and sheriffs' departments to submit to the Federal Bureau of Investigation (FBI) as New York's official crime statistics. Violent crime totals include reports of murder, rape, robbery, and aggravated assault.

Orange County had the highest rate of reported violent crimes (192.4 per 100,000 population), while Putnam County had the lowest rate (48.5 per 10,000 population). All seven counties of the M-H Region were below the NYS and the NYS excluding New York City (NYC) rates [see Figure 28]. All counties have a lower rate from 2018 to 2021.

[71] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/crime-and-violence,accessed August 2022

Figure 28



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2018	186.4	210.7	55.4	113.5	264.2	161.1	173.6	204.0	351.0
2019	194.8	190.9	49.9	115.5	249.9	145.6	169.3	199.4	359.4
2020	198.0	174.6	37.9	104.9	196.7	128.5	164.4	206.2	365.7
2021	180.7	192.4	48.5	97.9	168.8	130.9	151.5	201.3	384.4

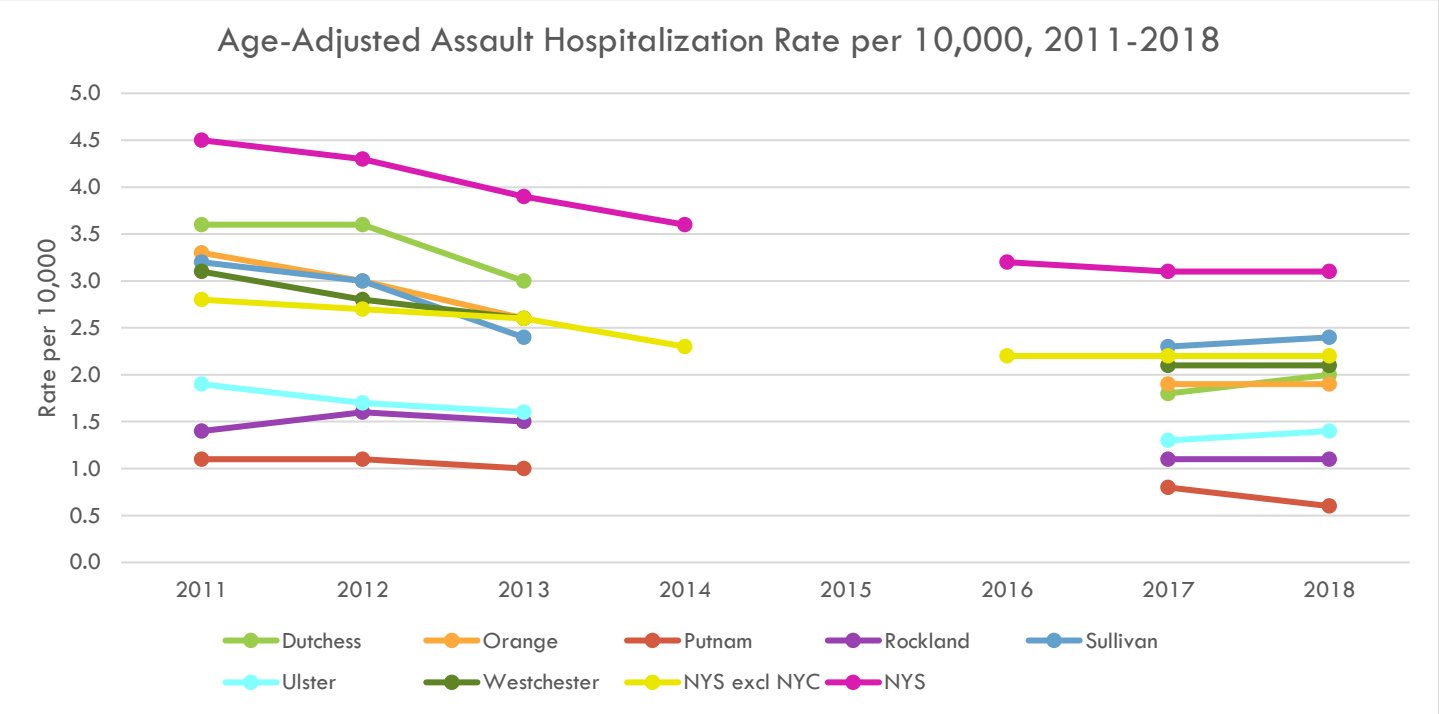
Note: The overall violent crime rate of a county is calculated by dividing the total number of violent crimes submitted by police agencies in each county by the county's population and multiplying the result by 100,000. The US Census Bureau is the source of county population data.

Includes all reports received as of May 16, 2022.

Source: NYS Division of Criminal Justice Services, Uniform Crime/Incident-Based Reporting System
https://www.criminaljustice.ny.gov/crimnet/ojsa/countycrimestats.htm

Westchester County had the leading hospitalization rate due to assault (2.1 per 10,000). Putnam County had the lowest rate for all years reported. The seven counties of the M-H Region are generally lower than the NYS and NYS excluding NYC rates [see Figure 29].

Figure 29



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	3.6	3.3	1.1	1.4	3.2	1.9	3.1	2.8	4.5
2012	3.6	3.0	1.1	1.6	3.0	1.7	2.8	2.7	4.3
2013	3.0	2.6	1.0	1.5	2.4	1.6	2.6	2.6	3.9
2014								2.3	3.6
2015									
2016								2.2	3.2
2017	1.8	1.9	0.8	1.1	2.3	1.3	2.1	2.2	3.1
2018	2.0	1.9	0.6	1.1	2.4	1.4	2.1	2.2	3.1

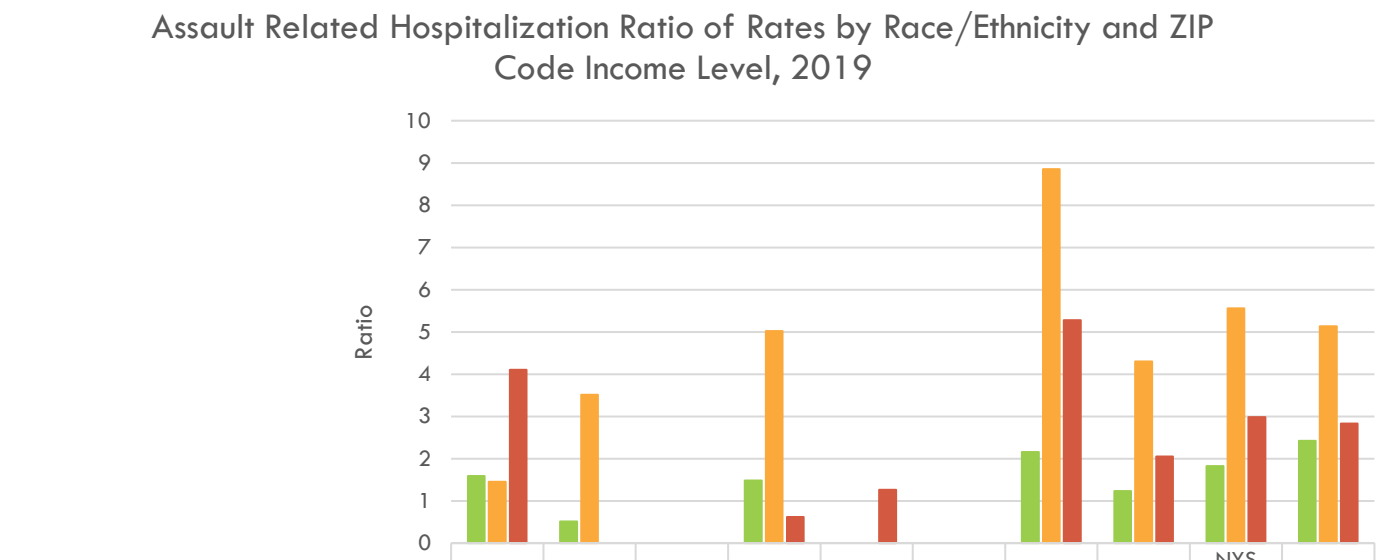
Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015, from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Three-year averages are used for counties and single-year rates are used for NYS and NYS excluding NYC.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hh17a

There is often a disparity seen in which populations are most affected by violent crime. Communities with lower socioeconomic status, along with racial and ethnic minorities, are more likely to experience violence.[72] When looking at assault related hospitalization by race and ethnicity and by income, there are significant disparities.

[72] US Department of Housing and Urban Development, Office of Policy Development and Research, 2016, https://www.huduser.gov/portal/periodicals/em/summer16/highlight2.html, accessed August 2022

For much of the M-H Region the following data should be interpreted with caution due to small data. For those counties with stable data, Hispanic and non-Hispanic Black residents experienced more assault related hospitalizations than non-Hispanic White residents. Westchester had the greatest differences which exceeded the M-H Region and NYS excluding NYC ratios. In Dutchess and Westchester Counties those that lived in low-income ZIP codes experienced more assault related hospitalizations and exceeded the M-H Region, NYS excluding NYC, and NYS ratios [see Figure 30].

Figure 30



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
Hispanic:White Non-Hispanic	1.6	0.5+	s	1.5+	s	s	2.2	1.2	1.8	2.4
Black Non-Hispanic:White Non-Hispanic	1.5+	3.5	s	5.0	s	s	8.9	4.3	5.6	5.1
Low-Income ZIP Codes:Non-Low-Income ZIP Codes	4.1	s	s	0.6+	1.3+	s	5.3	2.1	3.0	2.8

s: Data do not meet reporting criteria.
+: Fewer than 10 events in at least one of the numerators of the rates/percentages, therefore the ratio or rate difference is unstable.
Source: NYS Prevention Agenda Dashboard, 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fdashboard%2Fpa_dashboard&p=it&ind_id=pa6.2_0
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/dashboard/pa_dashboard&p=it&ind_id=pa6.1_0
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/dashboard/pa_dashboard&p=it&ind_id=pa6.3_0

ENVIRONMENTAL CONDITIONS

Three environmental conditions that negatively impact population health include air pollution, poor water quality, and extreme heat.[73] A study reported by the *United States Environmental Protection Agency* shows socially vulnerable populations, including racial and ethnic minorities, are disproportionately affected by environmental hazards.[74]

[73] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/environmental-conditions, accessed July 2022

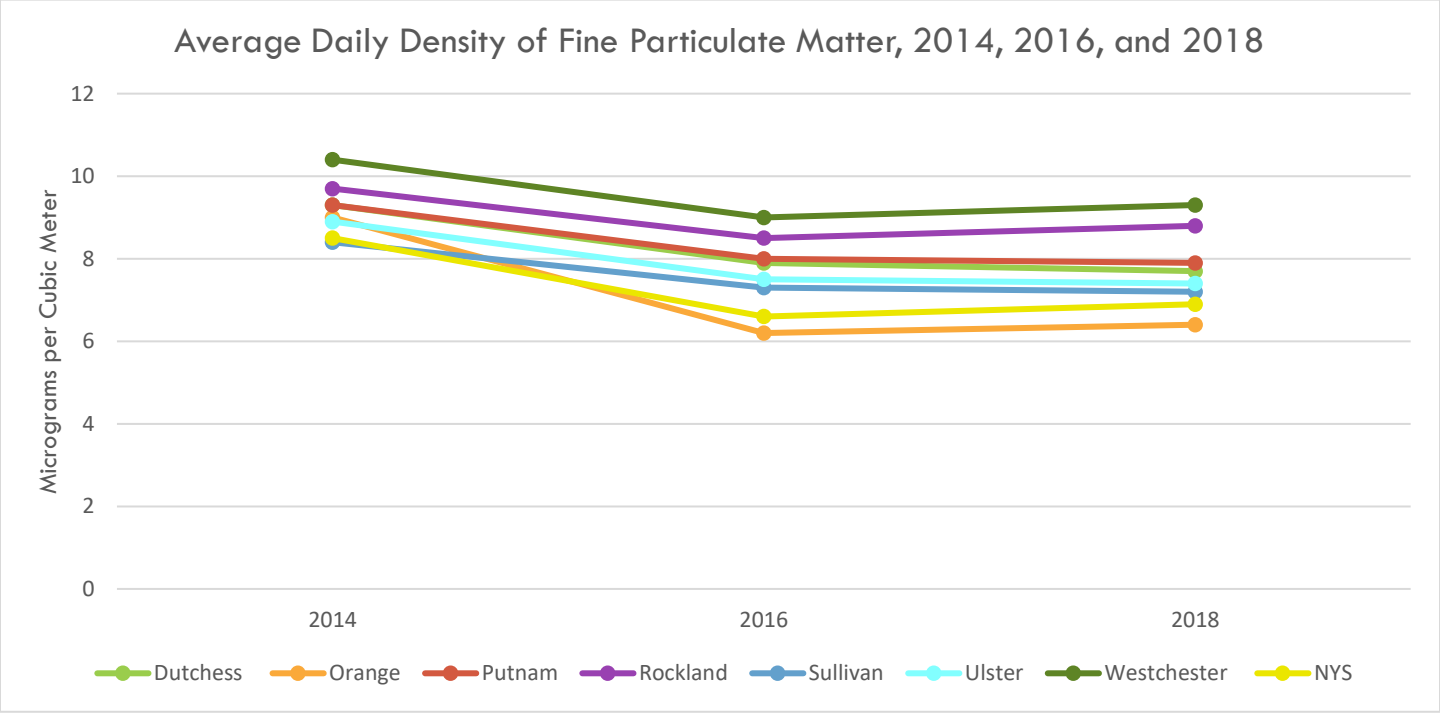
[74] United States Environmental Protection Agency, 2021, https://www.epa.gov/newsreleases/epa-report-shows-disproportionate-impacts-climate-change-socially-vulnerable, accessed July 2022

AIR POLLUTION

Air pollution has been linked to several poor health outcomes, particularly those related to the respiratory system. Negative consequences resulting from exposure to fine particulate matter in the air include, but are not limited to, decreased lung function, chronic bronchitis, and premature death.[75] Air particulate matter can come from a variety of sources, such as automobiles, industry, and forest fires.

Westchester County had the highest average daily density of fine particulate matter for the three years reported. Orange County had the lowest measure for the three years reported. In 2016 and 2018, Orange County had rates lower than NYS and all other counties within the M-H Region [see Figure 31].

Figure 31



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2014	9.3	9.0	9.3	9.7	8.4	8.9	10.4	8.5
2016	7.9	6.2	8.0	8.5	7.3	7.5	9.0	6.6
2018	7.7	6.4	7.9	8.8	7.2	7.4	9.3	6.9

Note: This is a measure of the average daily density of fine particulate matter. Fine particulate matter is defined as particles of air pollutants with an aerodynamic diameter less than 2.5 micrometers. The Environmental Public Health Tracking Network data come from the US Environmental Protection Agency's Air Quality System.
Source: University of Wisconsin Population Health Institute. County Health Rankings & Roadmaps 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/125/data

[75] University of Wisconsin Population Health Institute, County Health Rankings & Roadmaps, Robert Wood Johnson Foundation, 2022, https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/125/description, accessed August 2022

WATER QUALITY

There are many challenges when trying to maintain water quality. Sources of water contamination include:

- Sewage releases
- Naturally occurring chemicals and minerals (for example, arsenic, radon, and uranium)
- Local land use practices (for example, fertilizers, pesticides, livestock, and concentrated feeding operations)
- Manufacturing processes (for example, heavy metals and cyanide)
- Malfunctioning on-site wastewater treatment systems (for example, septic systems)[76]

Runoff can pose a risk to water quality and the health of the people exposed to it. When it rains, as water flows over impervious surfaces, such as pavement, it can pick up contaminants. Pollution can originate over large land areas or from a single point, such as an industrial pipe. Runoff can pick up sediment, nutrients, bacteria, pesticides, or petroleum byproducts from sources such as farms, waste, and roadways.[77] "The presence of certain contaminants in our water can lead to health issues, including gastrointestinal illness, reproductive problems, and neurological disorders. Infants, young children, pregnant women, the elderly, and people with weakened immune systems may be especially at risk for illness."[78]

FLUORIDATION

Community water fluoridation is an effective intervention for preventing tooth decay. CDC named community water fluoridation one of 10 great public health achievements of the 20th century.[79] Studies have found that rural communities are less likely to have adequately fluoridated water when compared with urban communities.[80] Rural populations are more likely to rely on untreated domestic wells than their urban counterparts and their communities may find investing in fluoridation more cost prohibitive.[81]

In the M-H Region, Westchester County had the highest percentage of residents who obtain water from a community water system with optimally fluoridated water at 85.6%. Westchester County exceeded the NYS and NYS excluding NYC levels. The other counties of the M-H Region had levels that were below the NYS and NYS excluding NYC levels. Rockland County did not have stable data to interpret [see Figure 32].

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[76] Centers for Disease Control and Prevention, 2020, https://www.cdc.gov/healthywater/drinking/public/water_quality.html, accessed August 2022

[77] US Geological Survey, Water Science School, 2018, https://www.usgs.gov/special-topic/water-science-school/science/runoff-surface-and-overland-water-runoff?qt-science_center_objects=0#qt-science_center_objects, accessed August 2022

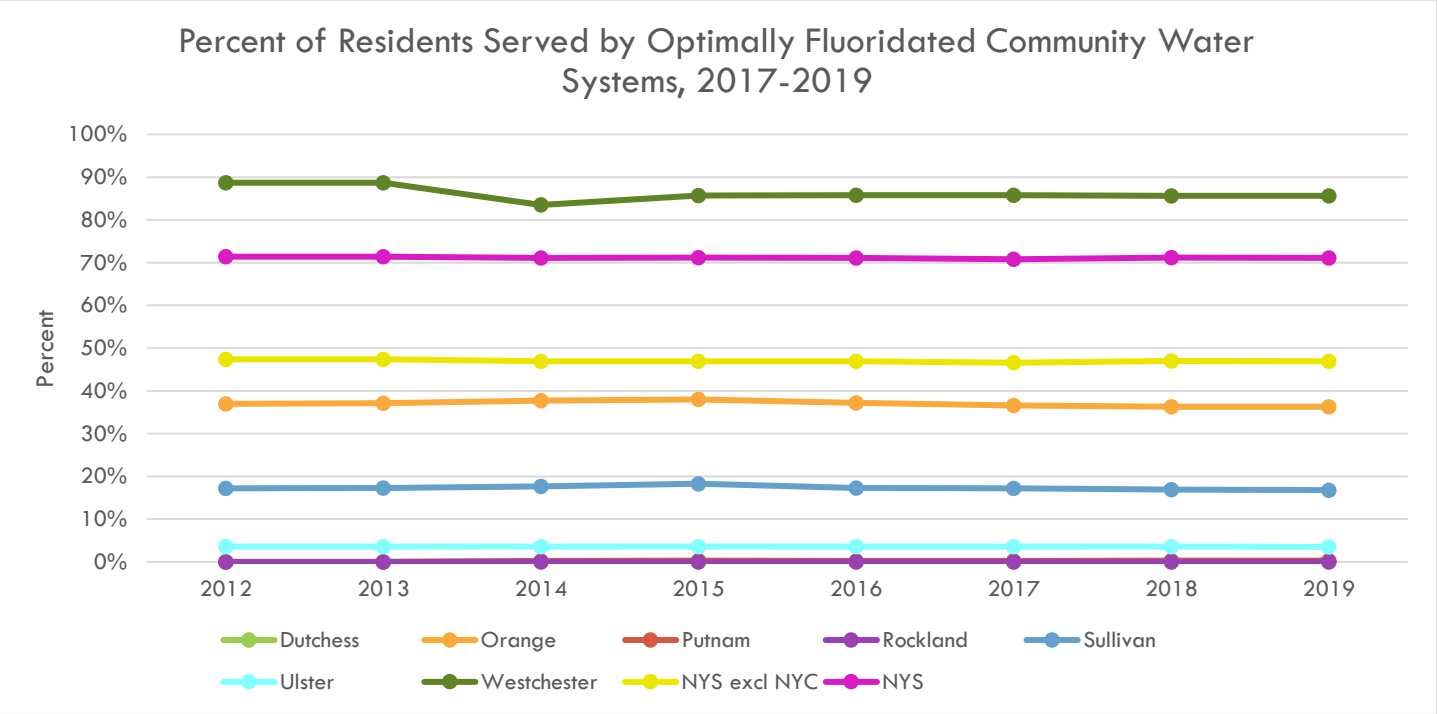
[78] Centers for Disease Control and Prevention, 2020, https://www.cdc.gov/healthywater/drinking/public/water_quality.html, accessed August 2022

[79] Centers for Disease Control and Prevention, 2020, https://www.cdc.gov/fluoridation/index.html, accessed August 2022

[80] Rural Health Information Hub, https://www.ruralhealthinfo.org/toolkits/oral-health/2/community-water-fluoridation-model, accessed August 2022

[81] Rural Health Information Hub, https://www.ruralhealthinfo.org/toolkits/oral-health/2/community-water-fluoridation-model, accessed August 2022

Figure 32



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2012	0.0%	37.0%	0.0%*	0.0%*	17.2%	3.6%	88.7%	47.4%	71.4%
2013	0.0%	37.1%	0.0%*	0.0%*	17.3%	3.6%	88.7%	47.4%	71.4%
2014	0.1%	37.7%	0.2%	0.0%*	17.7%	3.6%	83.5%	46.9%	71.1%
2015	0.1%	38.0%	0.3%	0.0%*	18.3%	3.6%	85.7%	46.9%	71.2%
2016	0.1%	37.2%	0.2%	0.0%*	17.3%	3.6%	85.8%	46.9%	71.1%
2017	0.1%	36.6%	0.2%	0.0%*	17.2%	3.6%	85.8%	46.6%	70.8%
2018	0.1%	36.3%	0.3%	0.0%*	16.9%	3.6%	85.6%	47.0%	71.2%
2019	0.1%	36.3%	0.3%	0.0%*	16.8%	3.5%	85.6%	46.9%	71.1%

**: Fewer than 10 events in the numerator, therefore the rate/percentage is unstable.*
Note: A community water system is a public water system that serves the same people year-round. Most residences including homes, apartments, and condominiums in cities, towns, and mobile home parks are served by community water systems. This is a measure of the number of residents served by community water systems with optimal fluoride levels per 100 residents served by community water systems.
Source: NYS Prevention Agenda Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/dashboard/pa_dashboard&p=it&ind_id=pa670

LEAD POISONING

Lead affects every system of the body, and no safe blood lead level exists. Children are especially vulnerable to the negative impacts of lead exposure which can lead to slowed growth and development, damage to the brain and nervous system, behavioral problems, and hearing and speech problems.[82]

Lead exposure can occur from ingesting, coming in contact with, or breathing in lead dust or lead fumes.[83] Sources of lead can include lead-based paints in homes built before 1978, consumer products such as certain

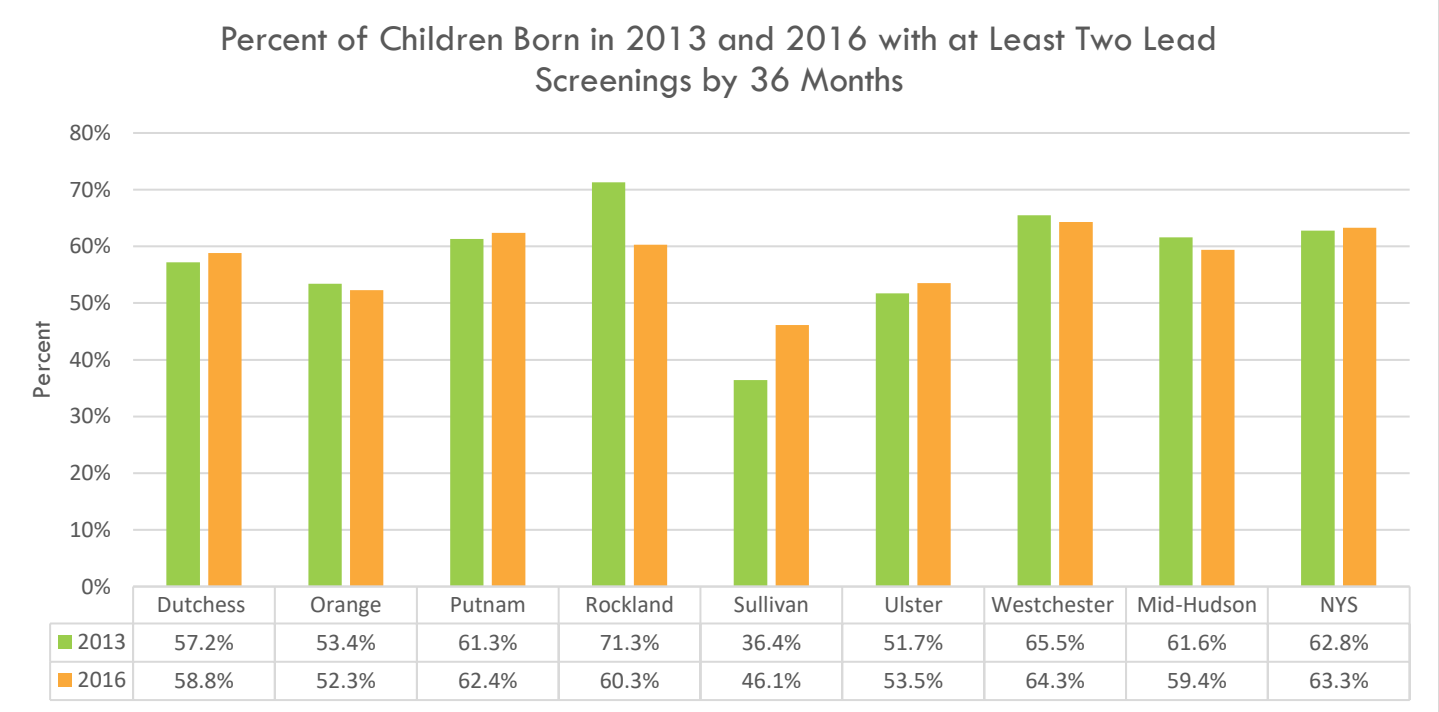
[82] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/nceh/lead/prevention/health-effects.htm, accessed August 2022

[83] Centers for Disease Control and Prevention, The National Institute for Occupational Safety and Health, 2021, https://www.cdc.gov/niosh/topics/lead/exposure.html, accessed August 2022

jewelry or toys, aviation gas, working with stained glass, and water pipes that contain lead.[84] For children, lead-based paint is the most common source of lead exposure.[85] Populations at higher risk for lead exposure include children from low-income households, children less than six years old, immigrant and refugee children from less developed countries, pregnant people, and adults working in industries that expose them to lead.[86]

NYS requires health care providers to obtain a blood lead level for all children at age one and again at age two.[87] Westchester County had the highest testing rate in the Mid-Hudson Region with 64.3% of children born in 2016 tested. Sullivan County had the lowest testing rate at 46.1%. Only Rockland and Westchester Counties exceeded NYS' rate in 2013 and only Westchester exceeded NYS' rate in 2016 [see Figure 33].

Figure 33



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
2013	57.2%	53.4%	61.3%	71.3%	36.4%	51.7%	65.5%	61.6%	62.8%
2016	58.8%	52.3%	62.4%	60.3%	46.1%	53.5%	64.3%	59.4%	63.3%

Note: This is a measure of the percentage of children in a single birth cohort tested at least twice for lead before 36 months of age.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Cg27

NYS Public Health Law (§ 1370) *and regulations* (Part 67 of Title 10 of the New York Codes, Rules, and Regulations) states that elevated blood lead levels in a child equal 5 mcg/dL or higher. Primary health care providers refer patients with elevated blood lead levels to local health departments for environmental management.[88]

[84] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/nceh/lead/prevention/sources.htm, accessed August 2022

[85] United States Environmental Protection Agency, 2022, https://www.epa.gov/lead/what-most-significant-source-childhood-lead-exposure-residence#:~:text=Answer%3A%20The%20scientific%20literature%20suggests%20that%20nationally%20lead-contaminated,home.%20This%20dust%20may%20accumulate%20to%20unsafe%20levels, accessed August 2022

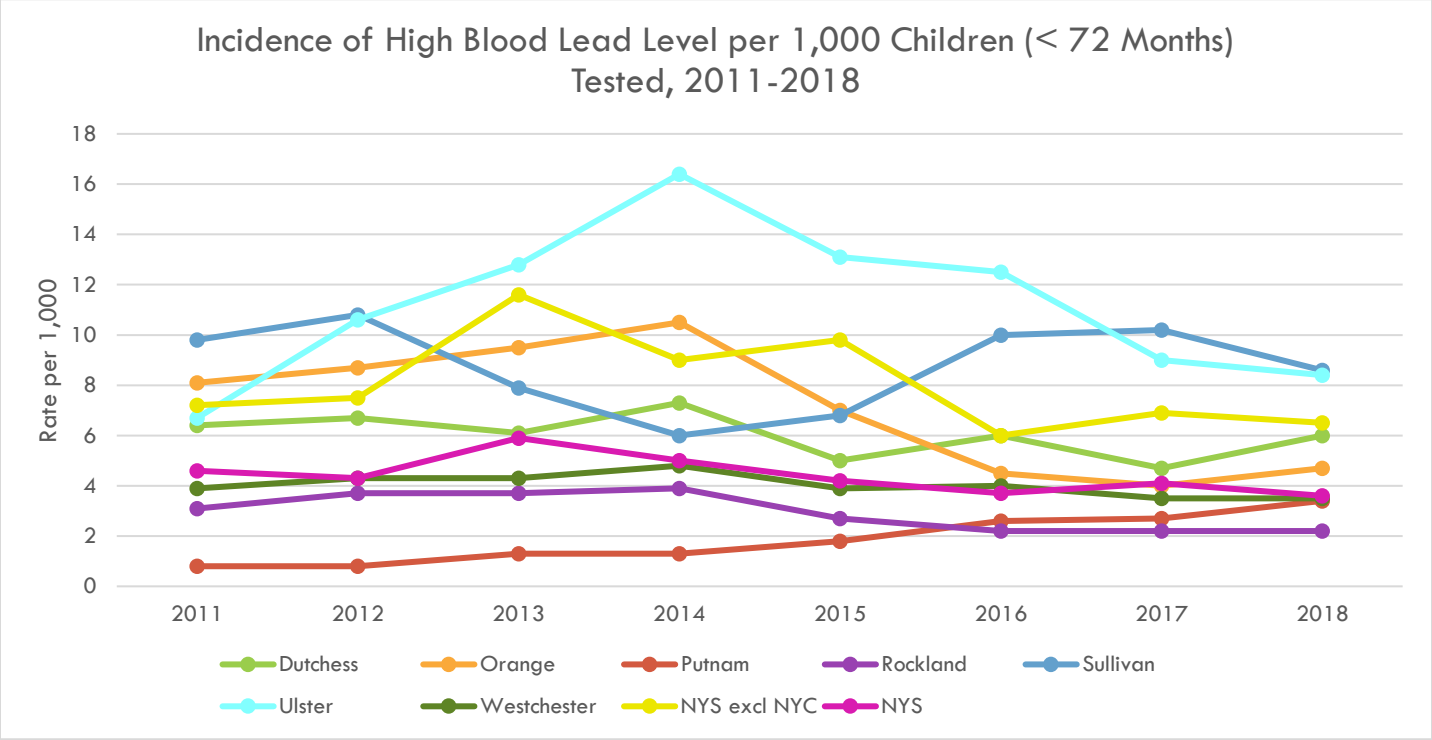
[86] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/nceh/lead/prevention/populations.htm, accessed August 2022

[87] New York State Department of Health, 2022, https://www.health.ny.gov/environmental/lead/, accessed August 2022

[88] NYS New York Codes, Rules and Regulations, 2019, https://regs.health.ny.gov/content/section-67-12-lead-screening-and-follow-children-health-care-providers, accessed August 2022

At 8.6 per 1,000 population, Sullivan County had the highest rate of confirmed blood lead levels higher than 8.0 mcg/dL, which was over double that of NYS (3.6 per 1,000 population) [see Figure 34].

Figure 34



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	6.4	8.1	0.8*	3.1	9.8	6.7	3.9	7.2	4.6
2012	6.7	8.7	0.8*	3.7	10.8	10.6	4.3	7.5	4.3
2013	6.1	9.5	1.3*	3.7	7.9	12.8	4.3	11.6	5.9
2014	7.3	10.5	1.3*	3.9	6.0	16.4	4.8	9.0	5.0
2015	5.0	7.0	1.8*	2.7	6.8	13.1	3.9	9.8	4.2
2016	6.0	4.5	2.6*	2.2	10.0	12.5	4.0	6.0	3.7
2017	4.7	4.0	2.7*	2.2	10.2	9.0	3.5	6.9	4.1
2018	6.0	4.7	3.4	2.2	8.6	8.4	3.5	6.5	3.6

**: Fewer than 10 events in the numerator, therefore the rate/percentage is unstable.*
Note: This includes children newly identified with a confirmed elevated blood lead level of 10 µg/dL or greater per 1,000 children among children less than 72 months tested in the given time frame.
Three-year averages for counties and single-year estimates for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Cg28

QUALITY OF HOUSING

According to Healthy People 2030, housing quality refers to the physical condition of a person's home as well as the quality of the social and physical environment in which the home is located, including aspects of air quality, home safety, space per individual, and the presence of mold, asbestos, or lead. Poor housing quality is associated with negative health outcomes including poor mental health, chronic disease, and injury.[89]

Housing, especially during the current housing crisis, is expensive. In addition to inflated rents and mortgages, poor quality housing may cost more to heat, lack air conditioning, possess inadequate plumbing systems, and lack proper kitchen facilities. Fluctuating temperatures can make temperature regulation challenging, further exacerbating poor health outcomes. For those trying to lead healthy lifestyles, housing that lacks a stove or refrigerator makes storing and cooking fresh fruits and vegetables more difficult. It can also have implications on the storage of medications, as some must be kept in cool temperatures. Additionally, inadequate plumbing can make personal and environmental hygiene challenging. Low-income families may be more likely to experience poor quality housing, highlighting social class disparities in housing.[90]

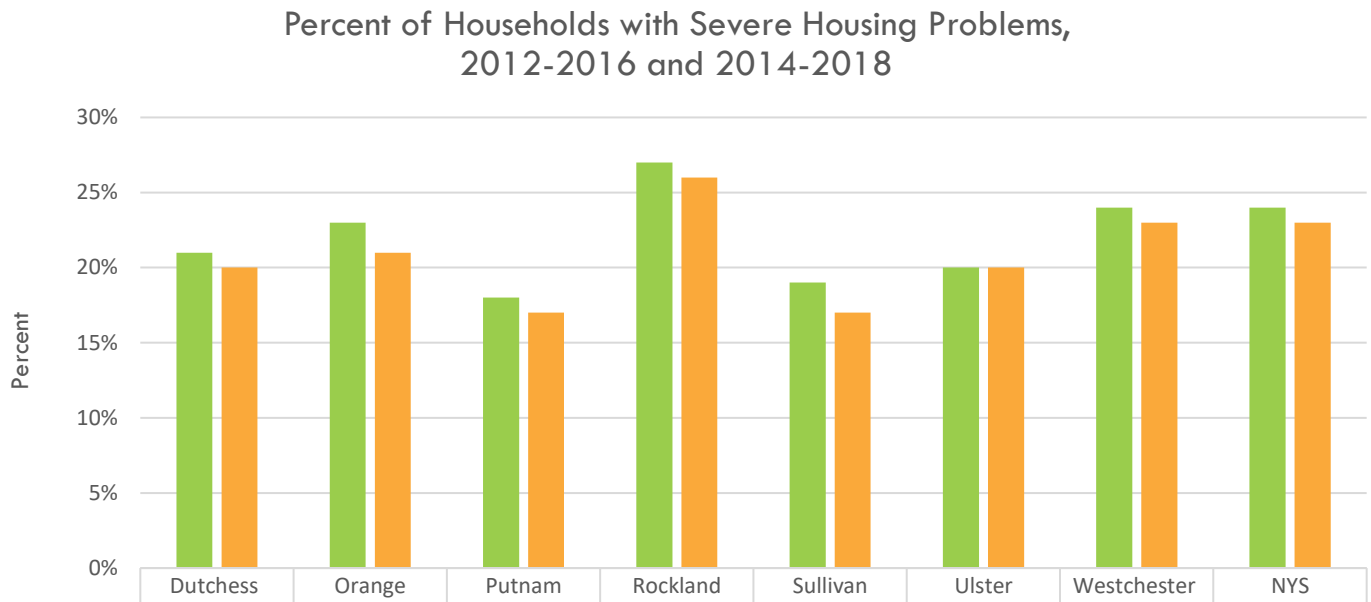
For this measure severe housing problems is the percentage of households with one or more of the following housing problems: lack of complete kitchen facilities, lack of complete plumbing facilities, overcrowding, and severely cost burdened households.

Rockland County had the highest percentage (26.0%) of households with severe housing problems, three percent higher than that of NYS (23.0%). Putnam and Sullivan Counties had the lowest percentage (17.0% and 17.0%, respectively) of households with severe housing problems [see Figure 35].

[89] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/quality-housing, accessed August 2022

[90] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/quality-housing, accessed September 2022

Figure 35



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2012-2016	21.0%	23.0%	18.0%	27.0%	19.0%	20.0%	24.0%	24.0%
2014-2018	20.0%	21.0%	17.0%	26.0%	17.0%	20.0%	23.0%	23.0%

Note: The US Census Bureau gathers data called the Comprehensive Housing Affordability Strategy, and these data are shared with the US Department of Housing and Urban Development for reporting purposes. Incomplete kitchen facilities are defined as a unit which lacks a sink with running water, a stove or range, or a refrigerator. Incomplete plumbing facilities is defined as lacking hot and cold piped water, a flush toilet, or a bathtub/shower. Overcrowding is defined as more than one person per room. Severe cost burden is defined as monthly housing costs, including utilities, that exceed 50% of monthly income. Graph reflects the percentage of households with at least one of these four housing problems.
Source: University of Wisconsin Population Health Institute. County Health Rankings & Roadmaps 2022
https://www.countyhealthrankings.org/app/new-york/2022/measure/factors/136/data

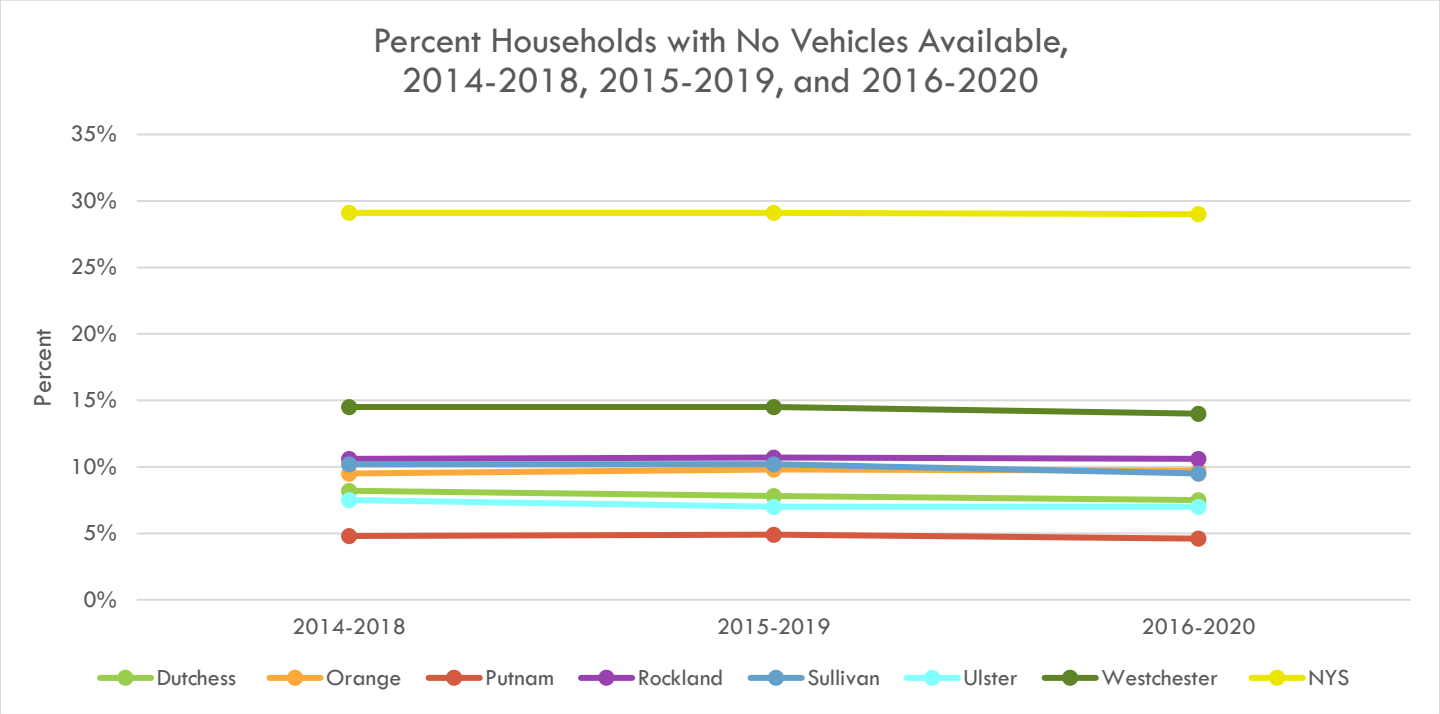
TRANSPORTATION

Transportation can include walking, driving, biking, or utilizing public transportation, such as subways and buses. Access to transportation can affect all aspects of life including the ability to find or keep employment, the quantity and quality of food that can be accessed, and access to health care. Studies have shown that those with access to a car are less likely to miss appointments or delay care when compared to those relying on other forms of transportation.[91]

In the M-H Region, Westchester County had the highest percentage of households with no available vehicles at 14.0%. Putnam County had the lowest percentage of households with no available vehicles at 4.6%. All counties within the M-H Region were below the NYS rate [see Figure 36].

[91] Journal of Community Health, National Library of Medicine, National Center for Biotechnology Information, 2014, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4265215/, accessed August 2022

Figure 36



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2014-2018	8.2%	9.5%	4.8%	10.6%	10.2%	7.5%	14.5%	29.1%
2015-2019	7.8%	9.8%	4.9%	10.7%	10.2%	7.0%	14.5%	29.1%
2016-2020	7.5%	9.7%	4.6%	10.6%	9.5%	7.0%	14.0%	29.0%

Note: The American Community Survey asks respondents how many automobiles, vans, and trucks of one-ton capacity or less are kept at home for use by members of the household.

Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-Year Estimates, Table DP04 https://data.census.gov/cedsci/table?q=dp04&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119&tid=ACSDP5Y2020.DP04

MODES OF TRANSPORTATION

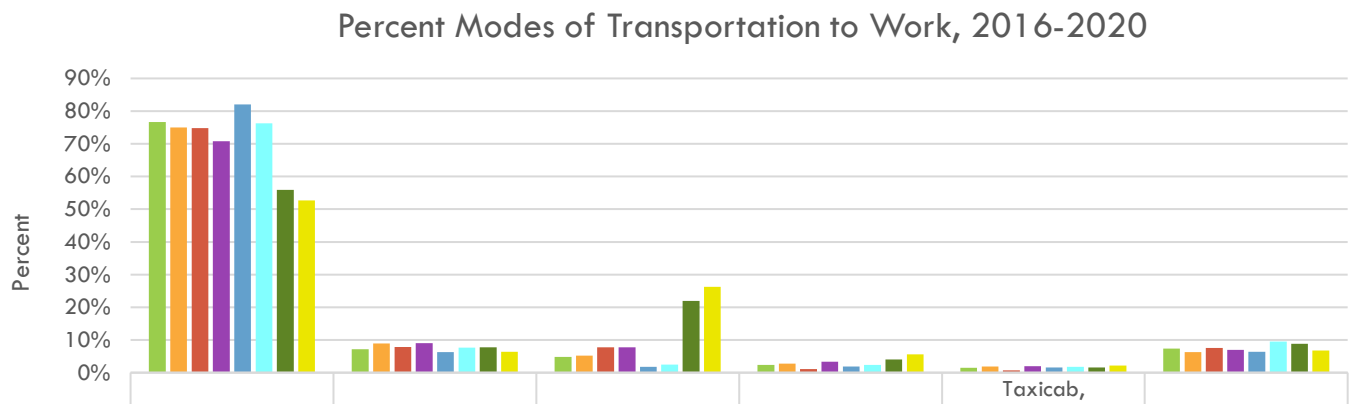
In addition to privately-owned vehicles, modes of transportation can include walking, mass public transportation, or biking. Pros to choosing mass public transportation, walking, and biking include protecting the environment by producing far less air pollution than cars and engaging in physical activity.[92] However, these modes require individuals to rely more heavily on proper infrastructure, investment, and city planning to make travel safe and effective. Car-dependent cities and communities make it more difficult to use alternative modes of transportation to complete necessary daily tasks like going to the grocery store or getting to school, due to lack of safe sidewalks and public transportation options.[93] The transportation method in which people most often get to work can be an indicator of how car-dependent an area is or how conducive it is to alternative modes of transportation.

[92] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/objectives-and-data/browse-objectives/transportation, accessed August 2022

[93] Elsevier Ltd., ScienceDirect, 2020, https://reader.elsevier.com/reader/sd/pii/S2590198220301494?token=CF722B942BA01129C596B52298FF8C7D1F1F4F21256458ED5630257A6DACF91D844AAC3FC8413BCC277B984F0630B7C3&originRegion=us-east-1&originCreation=20220804131701, accessed August 2022

The majority of residents in the M-H Region report driving alone to work as their most common means of commuting. Sullivan County had the highest percentage of commuters driving alone to work at 82.0%. Westchester County had a significantly larger share of commuters using public transportation than the rest of the M-H Region at 21.9%, as well as the lowest percentage of commuters driving alone to work at 55.9%. M-H Region residents were less likely to use public transportation or walk to work compared to NYS [see Figure 37].

Figure 37



	Drove alone	Carpooled	Public transportation	Walked	Taxicab, motorcycle, bicycle, or other means	Worked at home
Dutchess	76.7%	7.2%	4.8%	2.4%	1.5%	7.4%
Orange	75.0%	8.9%	5.2%	2.8%	1.9%	6.3%
Putnam	74.8%	7.9%	7.8%	1.1%	0.7%	7.6%
Rockland	70.8%	9.0%	7.8%	3.4%	2.0%	7.0%
Sullivan	82.0%	6.3%	1.8%	1.9%	1.6%	6.4%
Ulster	76.3%	7.7%	2.5%	2.4%	1.8%	9.5%
Westchester	55.9%	7.8%	21.9%	4.0%	1.6%	8.8%
NYS	52.7%	6.4%	26.3%	5.6%	2.2%	6.8%

Note: The American Community Survey asks respondents how they usually got to work last week. For respondents who use multiple transportation modes they are restricted to the single method of transportation used for the longest distance.
Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-Year Estimates, Table B08141
https://data.census.gov/cedsci/table?q=b08141&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119&tid=ACSDT5Y2020.B08141

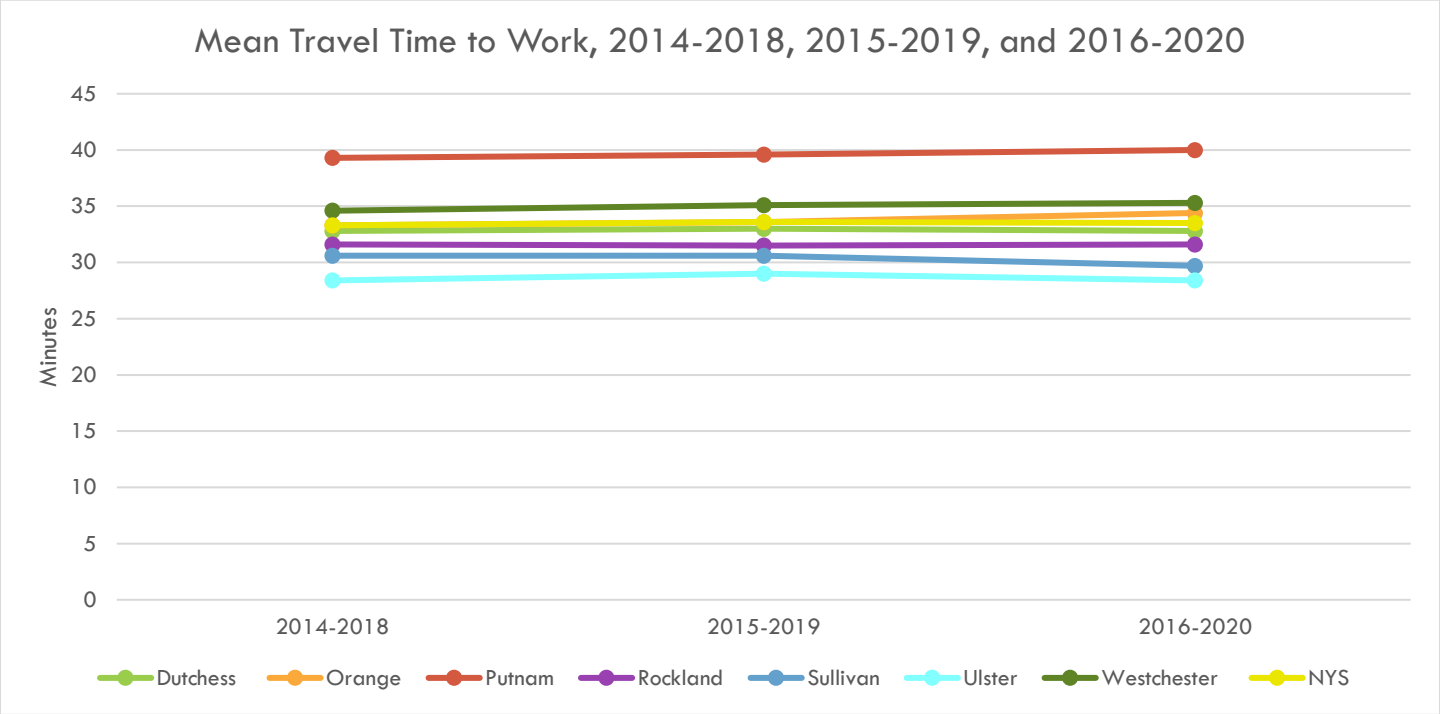
AVERAGE COMMUTE TIME

Average commute time, whether long or short, can be attributed to several factors. Long commute times can indicate a lack of job opportunities in an area, slow transit options, and a higher transportation cost burden on households and individuals.[94] It can also negatively impact the community as it contributes to pollution.

Putnam, Westchester, and Orange Counties had the longest mean commute times in the M-H Region at 40.0 minutes, 35.3 minutes, and 34.4 minutes, respectively, falling above the mean commute time of NYS (33.5 minutes). The remaining counties in the M-H Region had similar commute times ranging from 28.4 to 32.8 minutes [see Figure 38].

[94] Harvard Business School, 2021, https://hbswk.hbs.edu/item/commuting-kills-productivity-and-your-best-talent-suffers-most, accessed August 2022

Figure 38



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2014-2018	32.8	33.3	39.3	31.6	30.6	28.4	34.6	33.3
2015-2019	33.0	33.6	39.6	31.5	30.6	29.0	35.1	33.6
2016-2020	32.8	34.4	40.0	31.6	29.7	28.4	35.3	33.5

Note: The American Community Survey asks respondents in the workforce how many minutes it usually takes them to get from home to work. The travel time refers to a one-way trip on a typical day. This includes time spent waiting for public transportation, picking up passengers in carpools, and time spent in other activities related to getting to work.

Source: U.S. Census Bureau; American Community Survey, 2020 American Community Survey 5-Year Estimates, Table DP03
https://data.census.gov/cedsci/table?q=dp03&g=0400000US36_0500000US36027,36071,36079,36087,36105,36111,36119&tid=ACSDP5Y2020.DP03

INFRASTRUCTURE

Well-maintained infrastructure for transportation is key to economic growth, and access to goods and services.[95] Roads and bridges in poor condition can cause increased vehicle maintenance costs due to wear and tear, increased travel time and congestion, and can cause safety concerns.[96]

NYS Bridge Inspectors are required to evaluate, assign a condition score, and document the condition of up to 47 structural elements, including rating 25 components of each span of a bridge, in addition to general components common to all bridges. The NYS Department of Transportation condition rating scale ranges from 1 to 7, with 7 being in new condition and 4 or less being in poor condition.

New York State Department of Transportation's data on bridge conditions can be found in the *Mid-Hudson Region Community Health Assessment, 2019-2021*.

[95] Millennium Challenge Corporation, https://www.mcc.gov/sectors/sector/transportation-infrastructure, accessed August 2022

[96] US Department of Transportation, 2017, https://www.transportation.gov/content/improving-americas-transportation-infrastructure-road-forward, accessed August 2022

MID-HUDSON REGION COMMUNITY HEALTH SURVEY

INTRODUCTION

The Mid-Hudson Region Community Health Survey is a key component of the 2022 Community Health Assessment (CHA), and its main primary data collection source. The survey instrument was developed collaboratively by local health departments in the seven counties of New York's Mid-Hudson Region and The Siena College Research Institute (SCRI) to further explore regional health and well-being and inform future health improvement efforts. The 52-question survey was designed to assess overall quality of life, social determinants of health, perception of health and well-being, health behaviors, access and utilization of health services, and COVID-19 pandemic impacts. The 2022 survey is the second iteration of this project and contains many of the same questions previously offered in 2018 to allow for assessment of changes over a timeframe that corresponds to the COVID-19 pandemic. This cycle, survey results are particularly critical for the CHA as a supplement to secondary data sources whose availability, timeliness, and in some cases, validity were impacted by the pandemic.

METHODOLOGY AND DESIGN

The Siena College Research Institute (SCRI), on behalf of the seven local health departments (LHDs) of the Mid-Hudson Region (M-H Region), conducted a public opinion survey of 5,699 residents from March 14, 2022 to May 22, 2022. New York State's (NYS) M-H Region is comprised of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester Counties. Residents aged 18 and older were interviewed from the M-H Region to ensure representative county-wide samples. The margin of error for the total sample of 5,699 is +/- 2.1% including the design effects resulting from weighting with a 95% confidence interval. This means that in 95 out of every 100 samples of the same size and type, the results we obtain would vary by no more than plus or minus 2.1 percentage points from the result we would get if we could interview every member of the population. The overall sample of 5,699 was weighted by age, gender, reported race/ethnicity, income and county using the *2015-2020 American Community Survey* 5-year estimates to ensure statistical representativeness.

Respondents were contacted via landline telephone, cell phone, an online panel, and online recruitment from each county at various in-person events and other community partnerships to enhance representation and meet budget constraints. The design of the landline sample was conducted to ensure the selection of both listed and unlisted telephone numbers, using random digit dialing (RDD). The cell phone sample was drawn from a sample of dedicated wireless telephone exchanges from within each of the M-H Region counties. Respondents were screened for residence in NYS and specified counties. Data from all four sources were combined and weighted as one universe to provide a representative sample of M-H Region residents.

SCRI made calls between 1pm and 9pm Monday through Thursday, and between 2pm and 8pm on Sundays. Landline telephone numbers were purchased from ASDE Survey Sampler and cell phone numbers were purchased from Dynata (formerly Survey Sampling International). Up to seven calls were placed to each phone number to establish if the phone number was in service. Telephone surveys were conducted in English or Spanish.

The online sample was provided by Lucid, a market research platform that runs an online exchange for survey respondents. The samples drawn from this exchange matched a set of demographic quotas on age, gender, and region. Respondents were sent from Lucid directly to survey software operated by the SCRI. All respondents that took the survey online completed an attention check prior to taking the survey. Additional attention checks were

placed in the survey to ensure proper attention was being paid throughout the entire survey. Online panel surveys were conducted in English. The online recruitment from each county included distributing the survey URL to community partners, promoting the survey on social media, and providing access to the survey at community events. The online recruitment survey was conducted in English and Spanish.

In 2018, SCRI conducted a similar survey for the M-H Region. In that iteration, respondent data was collected via RDD dual-frame telephone interviews and augmented through the use of the Lucid panel. In 2018, each county's oversample of ZIP codes with residents with the lowest levels of income were included in the unweighted samples.

In both 2018 and 2022, each county estimate was similarly weighted to the most current demographic estimates of the county's population by age, gender, reported race/ethnicity, and income. As such, and despite sampling design differences, the final weighted estimates by county and the final weighted regional estimates from 2018 and 2022 can be fairly compared to one another.

NATURE OF THE SAMPLE

A total of 5,699 surveys were collected with an average of 814 surveys collected per county. Weighted proportions of demographic categories are presented below.

Table 34

Respondent Demographic Breakdown								
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**Mid-Hudson**
TOTAL COUNT	943	996	777	765	641	647	930	5,699
Gender								
Male	48%	48%	49%	46%	50%	48%	47%	46%
Female	49%	49%	48%	50%	47%	50%	52%	51%
Age								
18 to 34	27%	29%	23%	28%	25%	26%	26%	26%
35 to 49	24%	24%	25%	25%	27%	22%	23%	25%
50 to 64	26%	24%	27%	23%	24%	26%	27%	26%
65 and older	21%	20%	23%	20%	23%	24%	22%	21%
Ethnicity								
White	73%	63%	79%	61%	75%	80%	55%	55%
Non-White	24%	33%	17%	35%	24%	18%	43%	43%

Note: The responses 'Don't know' and 'Refused' are not included in the above table therefore percentages may not add up to 100%.

RESULTS

Questions are listed as they appeared on the Survey Script [see Appendix I]. If a question was asked in the 2018 survey and the 2022 survey, a figure is included comparing the responses by year. For the 2022 survey, figures are provided comparing the responses for each county.

PERCEPTION OF COMMUNITY

Survey Question 1: *I'm going to read you a series of statements that some people make about the area around where they live, that is, their community. For each, tell me if that statement is completely true of your community, somewhat true, not very true, or not at all true for your community.* ***There are enough jobs that pay a living wage.***

Figure 39

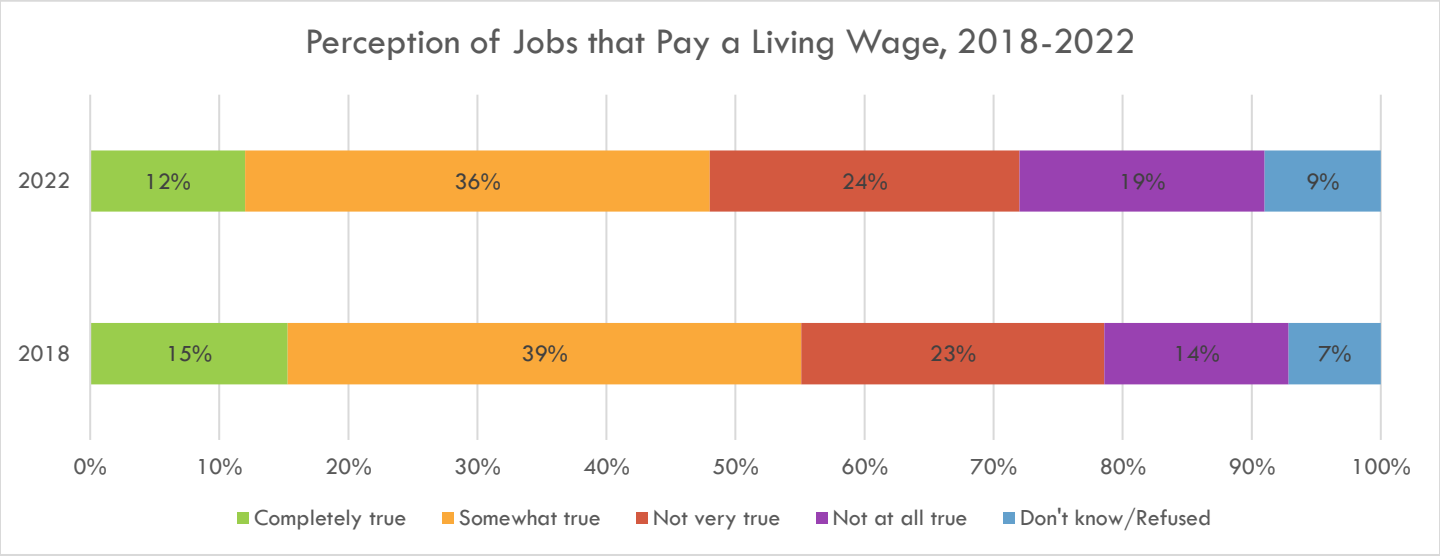
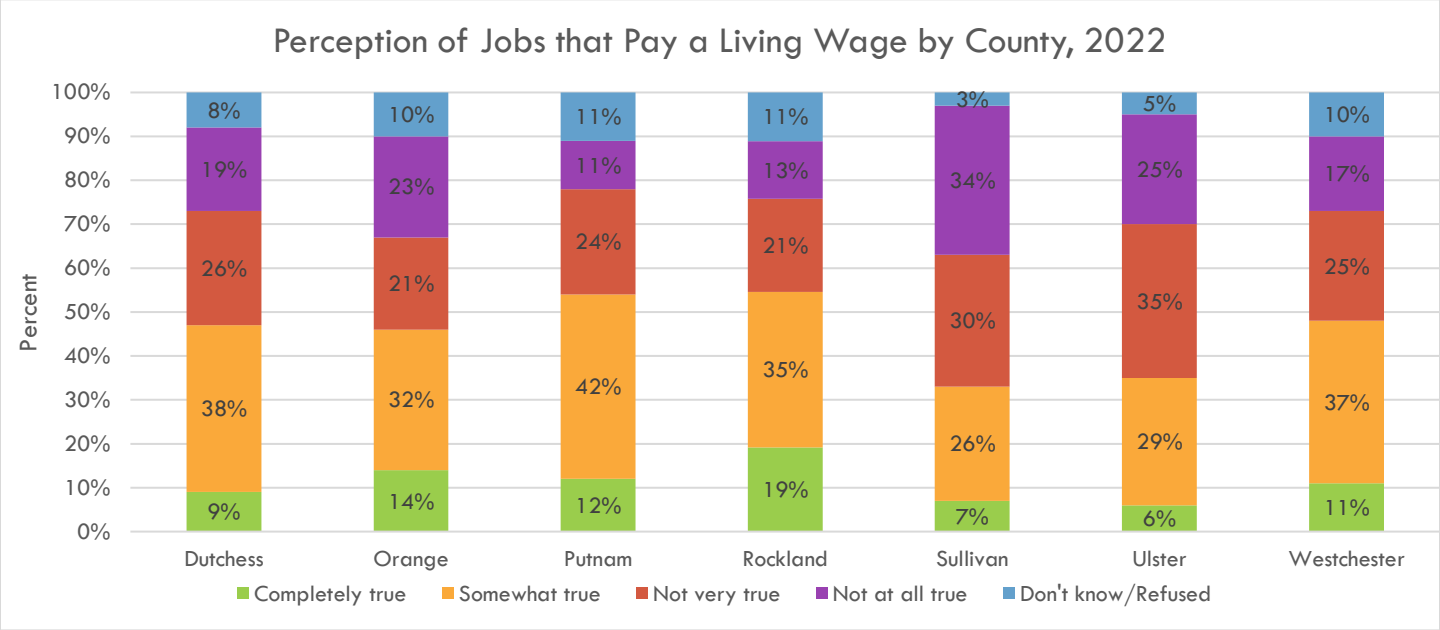


Figure 40



Survey Question 2: *I'm going to read you a series of statements that some people make about the area around where they live, that is, their community. For each, tell me if that statement is completely true of your community, somewhat true, not very true, or not at all true for your community.* ***Most people are able to access affordable food that is healthy and nutritious.***

Figure 41

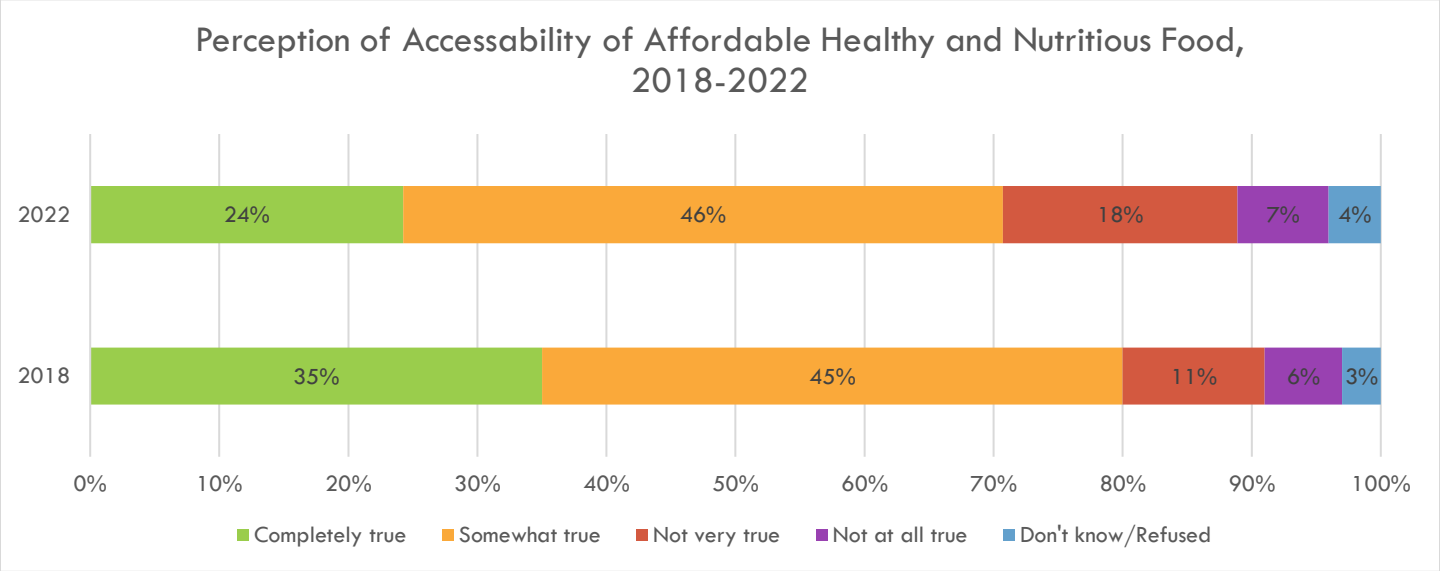
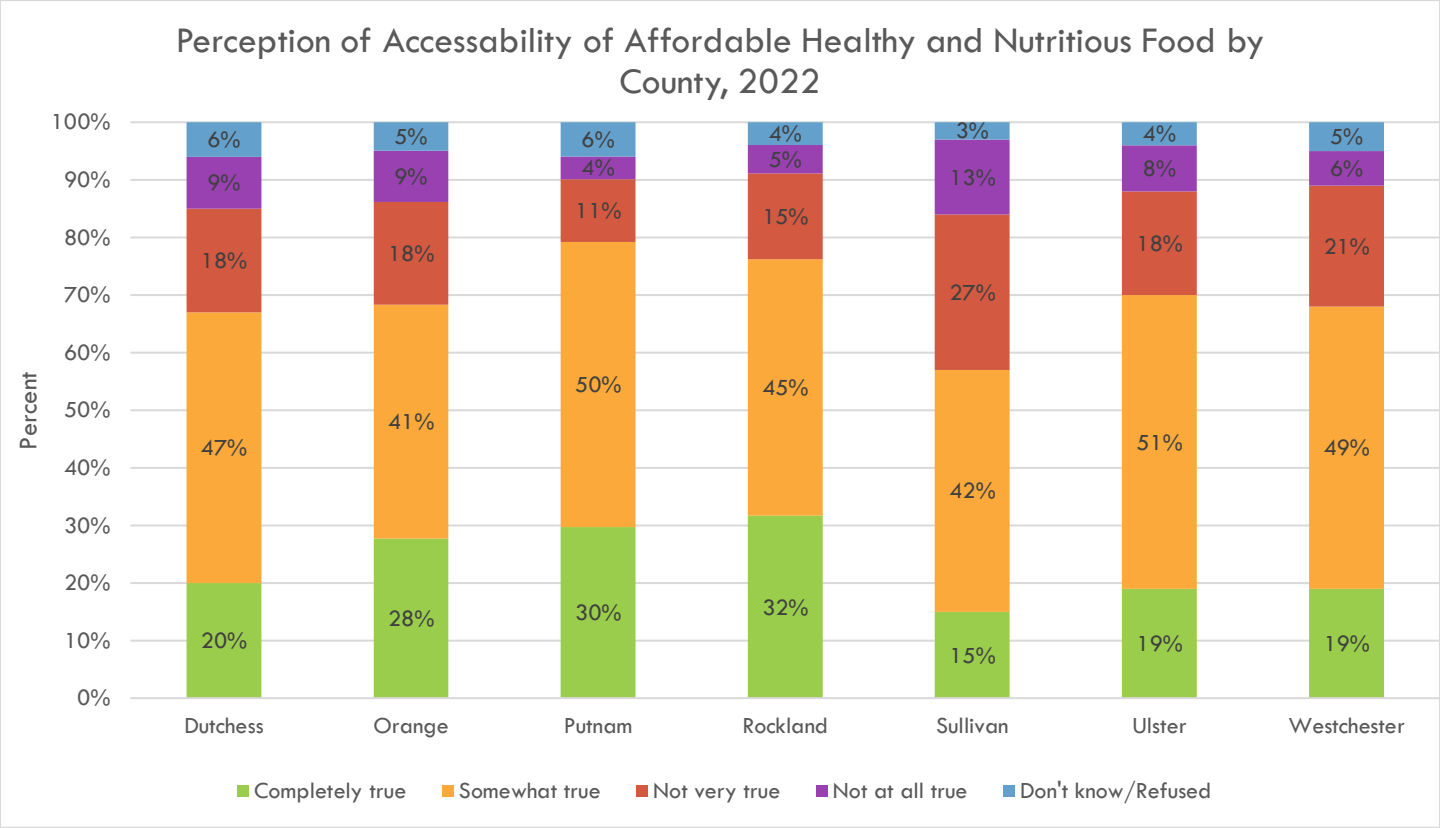


Figure 42



Survey Question 3: *I'm going to read you a series of statements that some people make about the area around where they live, that is, their community. For each, tell me if that statement is completely true of your community, somewhat true, not very true, or not at all true for your community.* ***People may have a hard time finding a quality place to live due to the high cost of housing.***

Figure 43

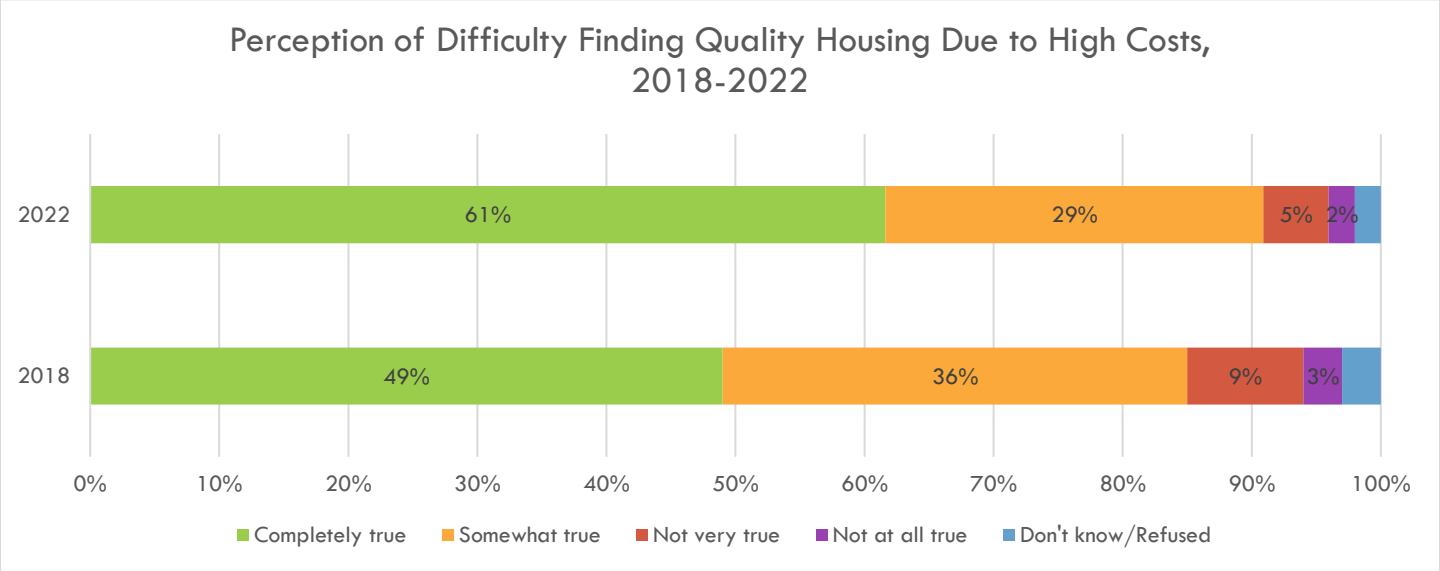
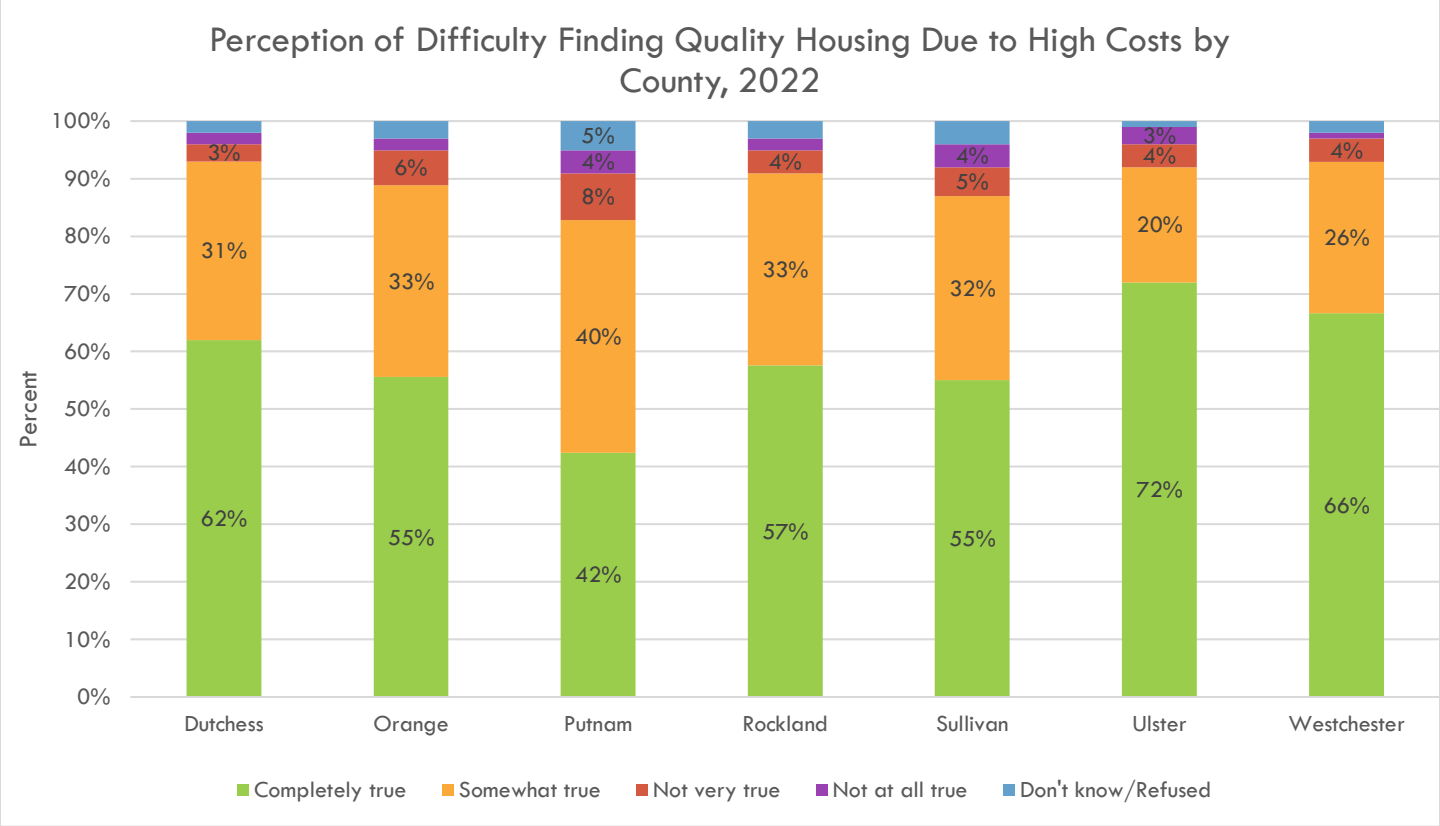


Figure 44



Survey Question 4: *I'm going to read you a series of statements that some people make about the area around where they live, that is, their community. For each, tell me if that statement is completely true of your community, somewhat true, not very true, or not at all true for your community.* ***Parents struggle to find affordable, high-quality childcare.***

Figure 45

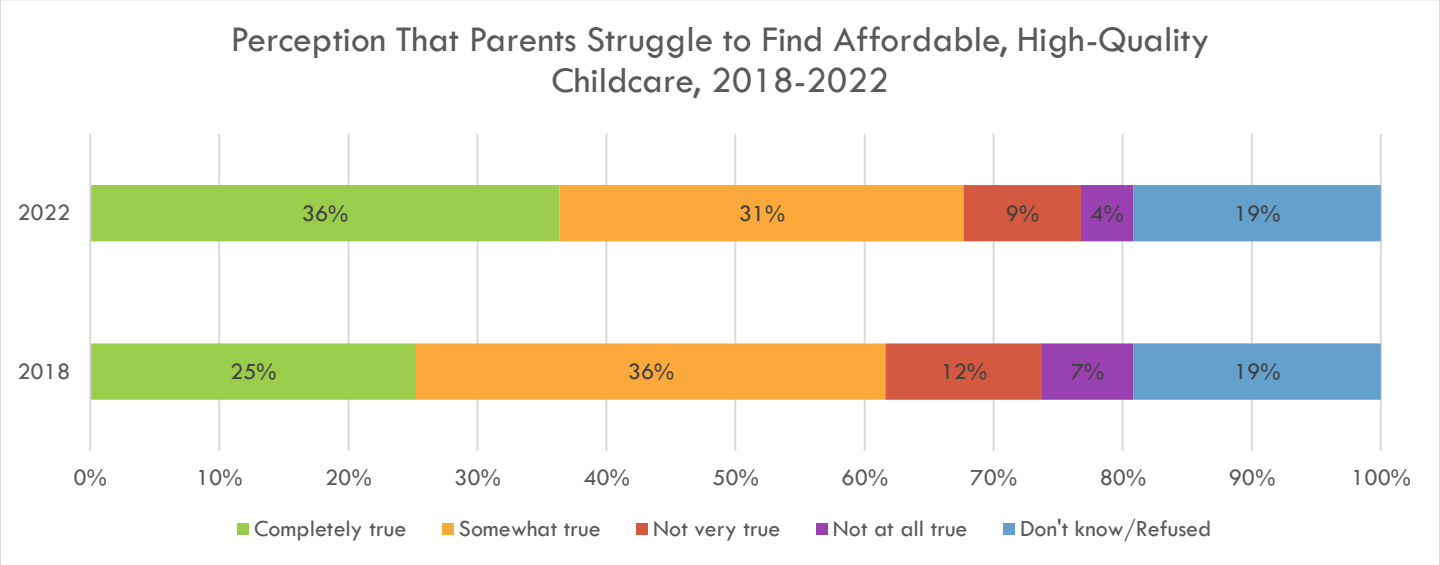
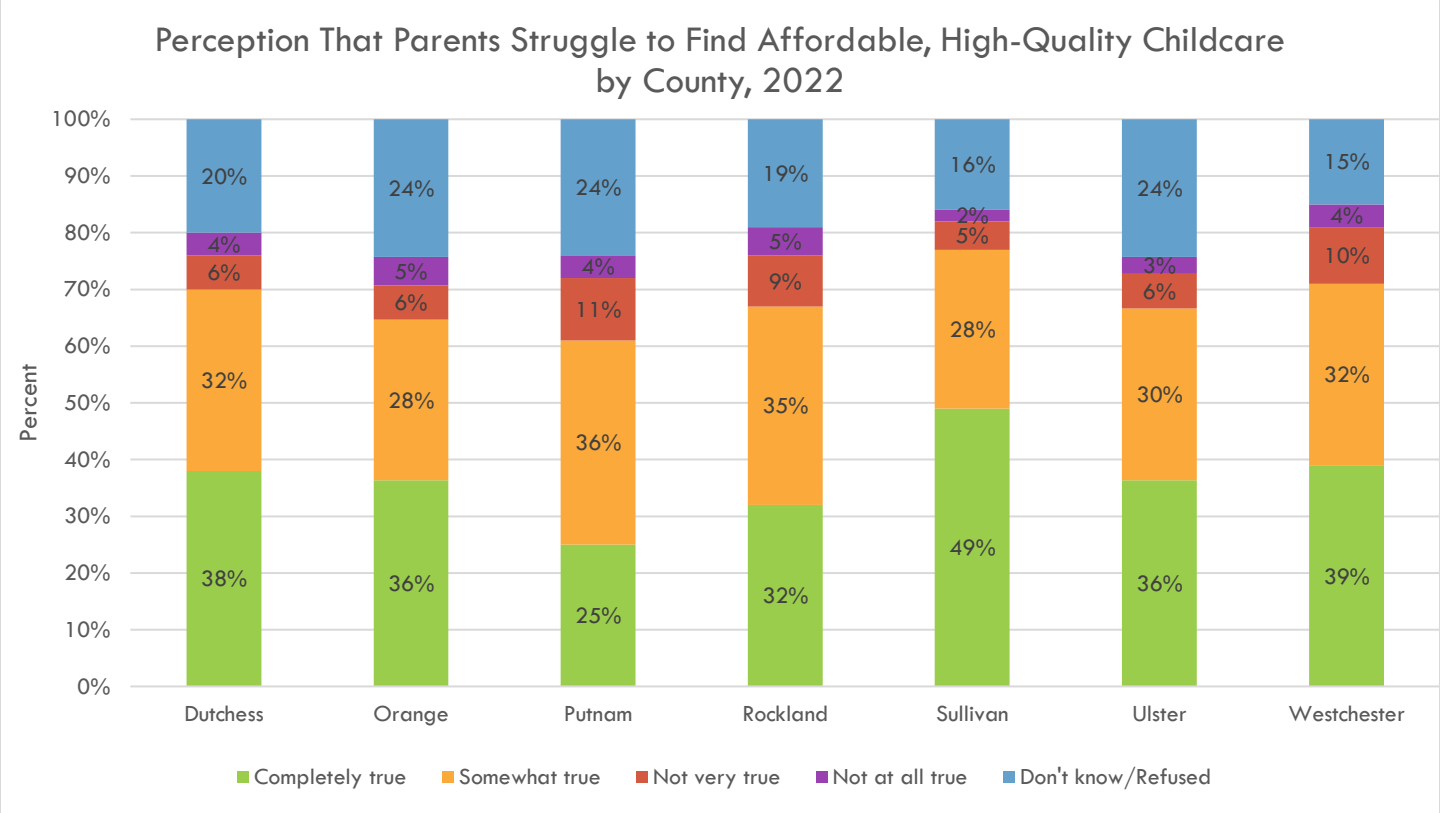


Figure 46



Survey Question 5: *I'm going to read you a series of statements that some people make about the area around where they live, that is, their community. For each, tell me if that statement is completely true of your community, somewhat true, not very true, or not at all true for your community.* ***There are sufficient, quality mental health providers.***

Figure 47

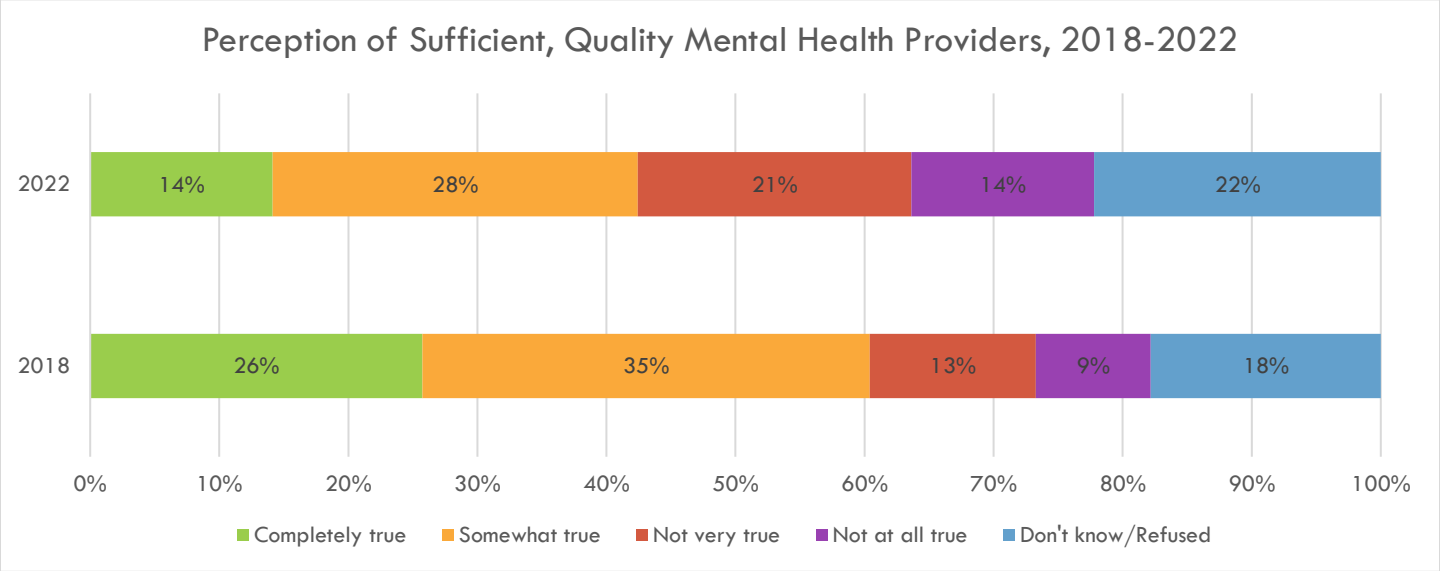
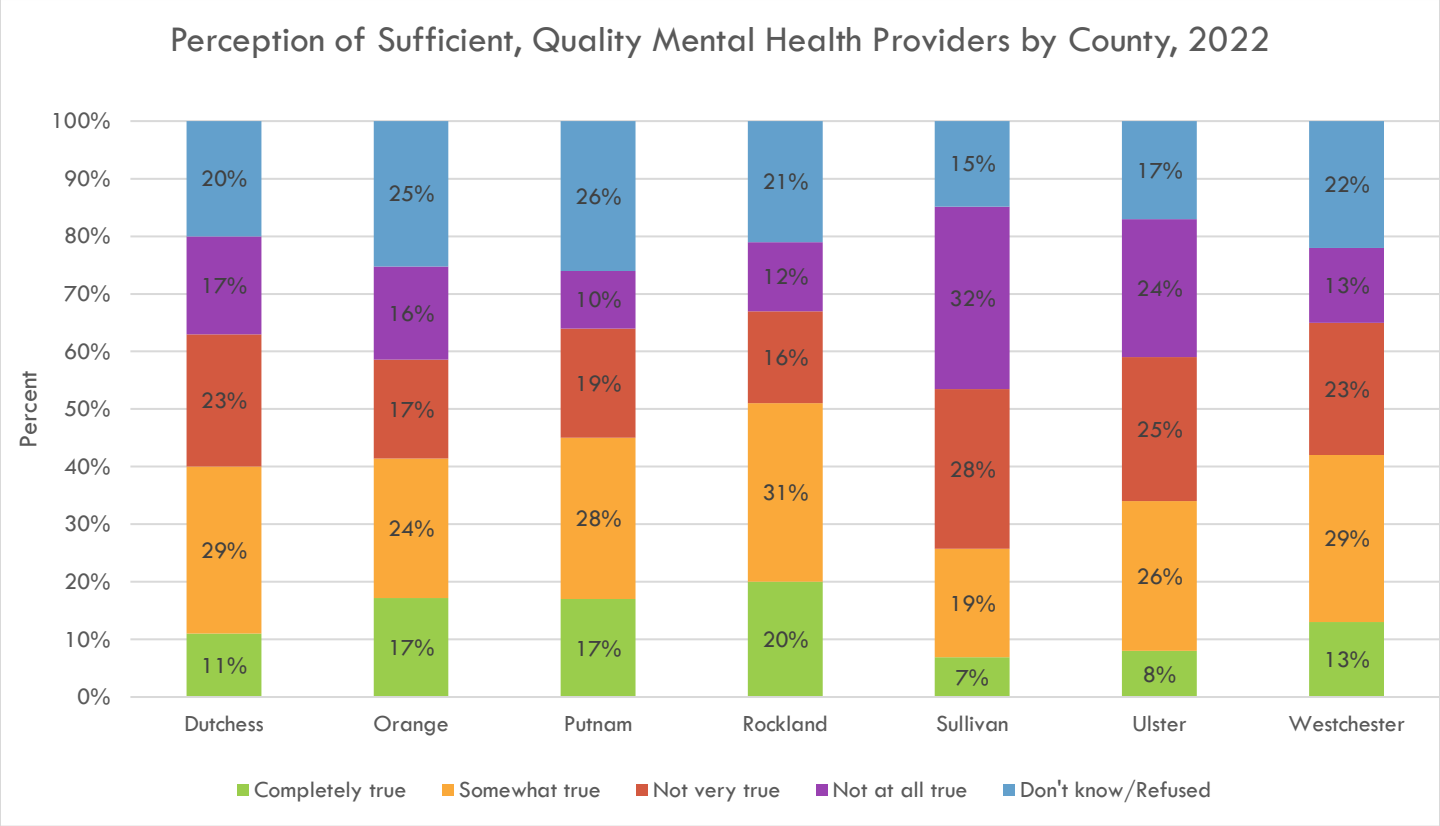


Figure 48



Survey Question 6: *I'm going to read you a series of statements that some people make about the area around where they live, that is, their community. For each, tell me if that statement is completely true of your community, somewhat true, not very true, or not at all true for your community.* ***Local government and/or local health departments, do a good job keeping citizens aware of potential public health threats.***

Figure 49

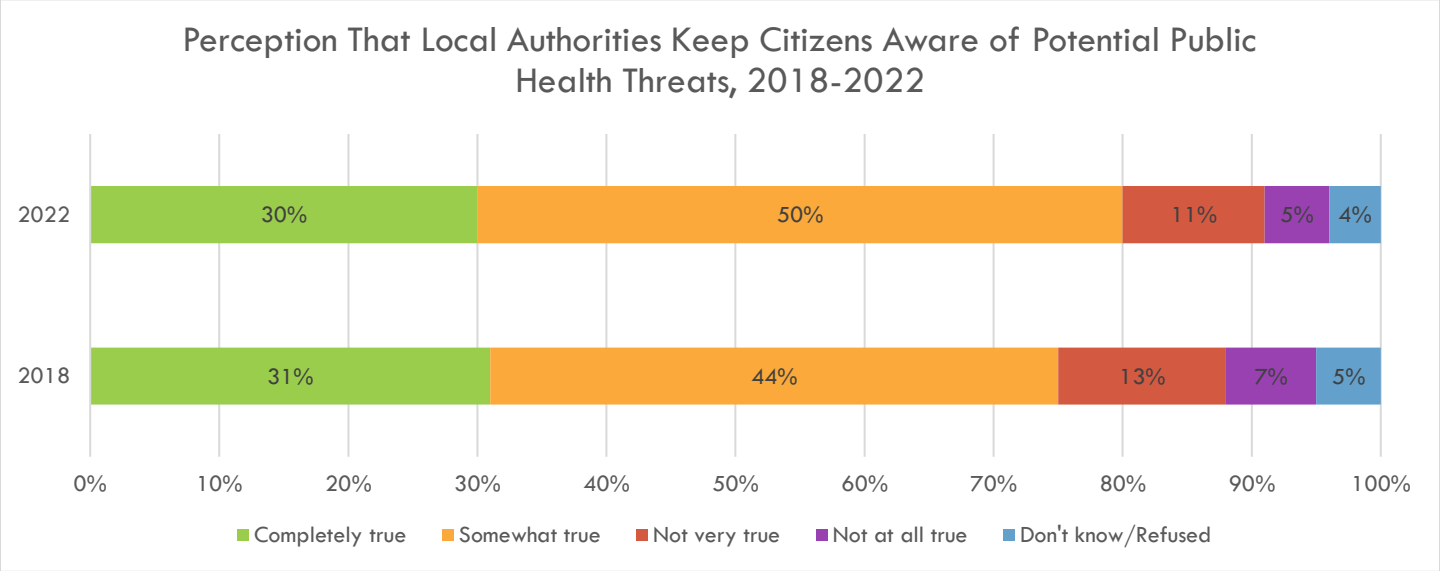
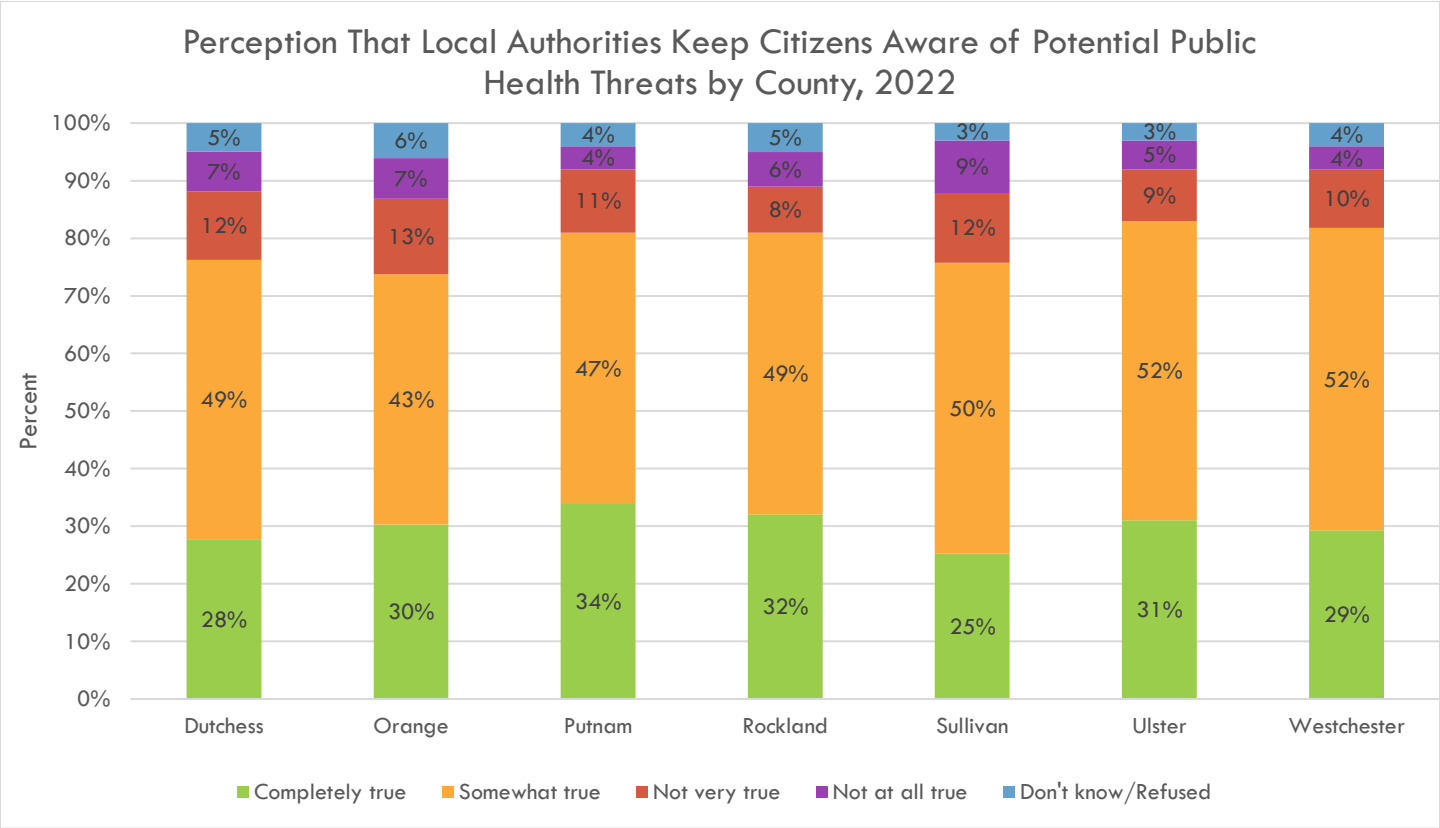


Figure 50



Survey Question 7: *I'm going to read you a series of statements that some people make about the area around where they live, that is, their community. For each, tell me if that statement is completely true of your community, somewhat true, not very true, or not at all true for your community.* ***There are places in this community where people just don't feel safe.***

Figure 51

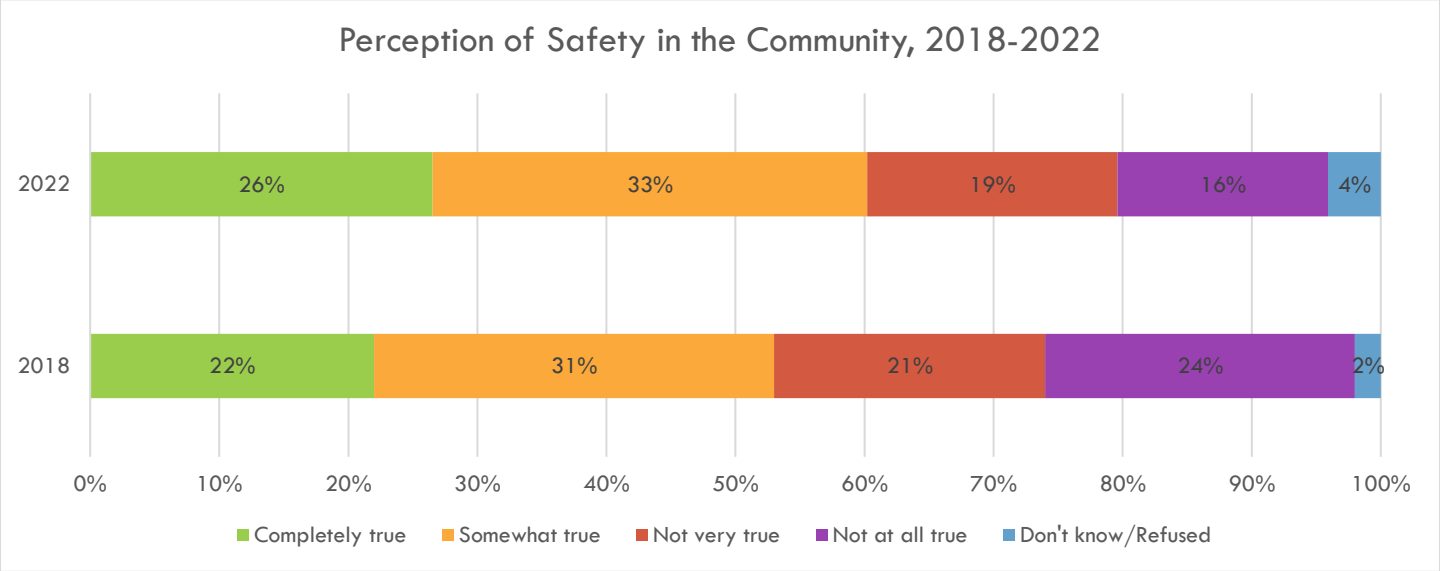
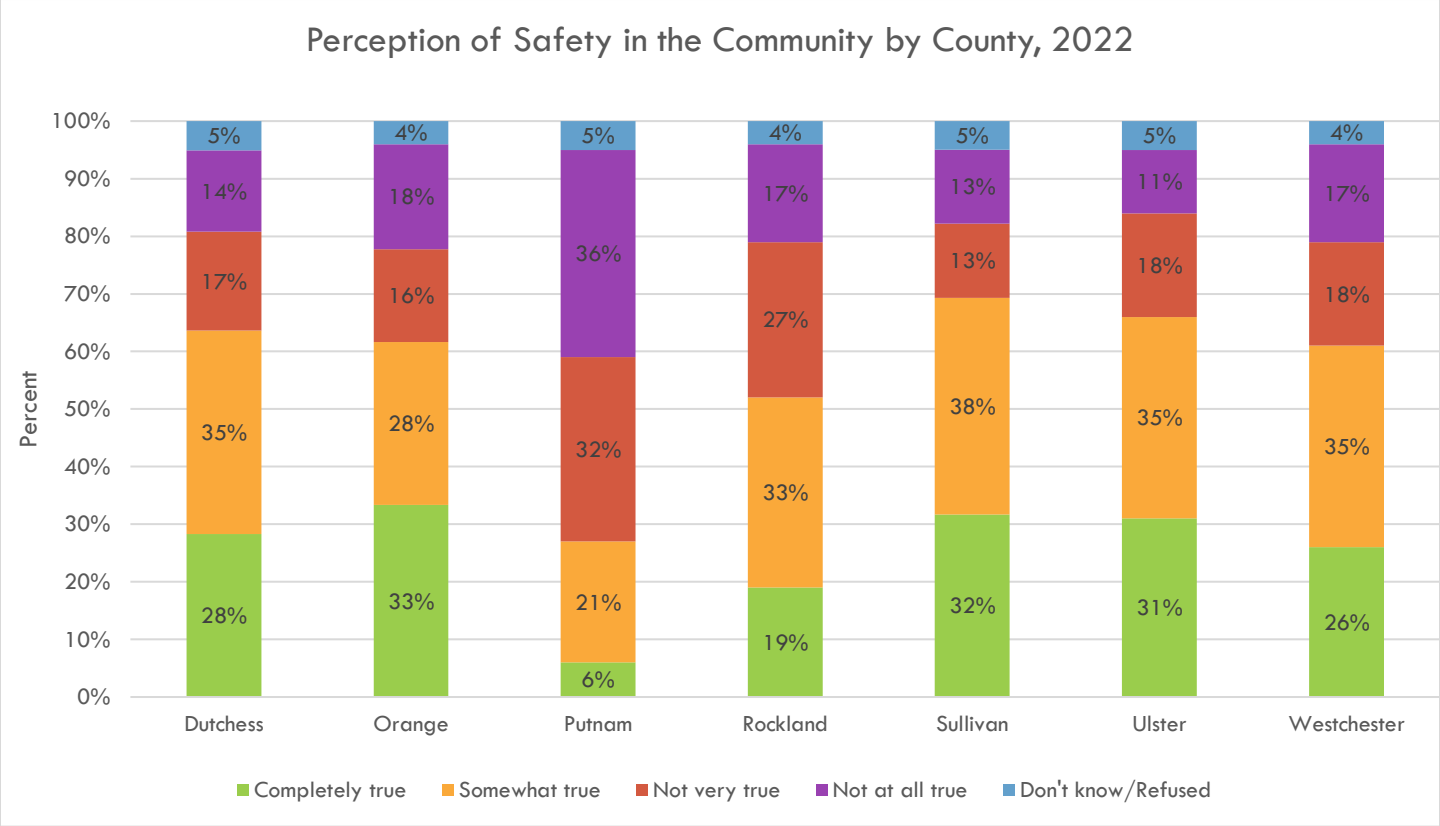


Figure 52



Survey Question 8: *I'm going to read you a series of statements that some people make about the area around where they live, that is, their community. For each, tell me if that statement is completely true of your community, somewhat true, not very true, or not at all true for your community.* ***People can get to where they need using public transportation.***

Figure 53

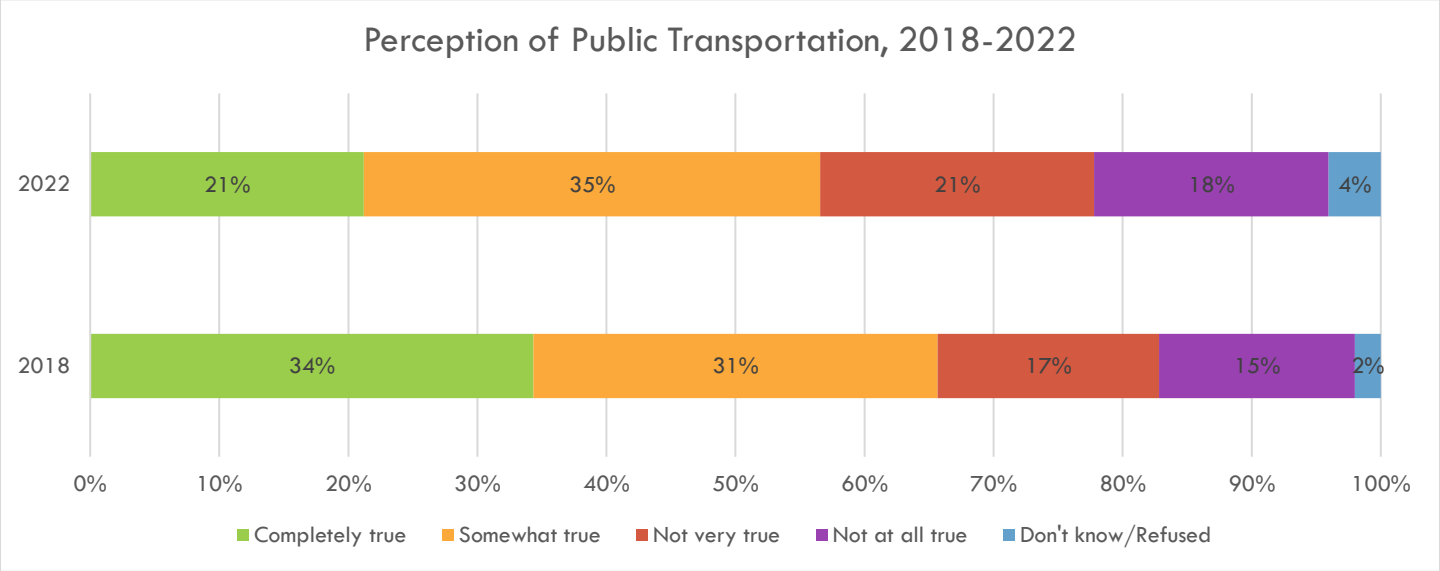
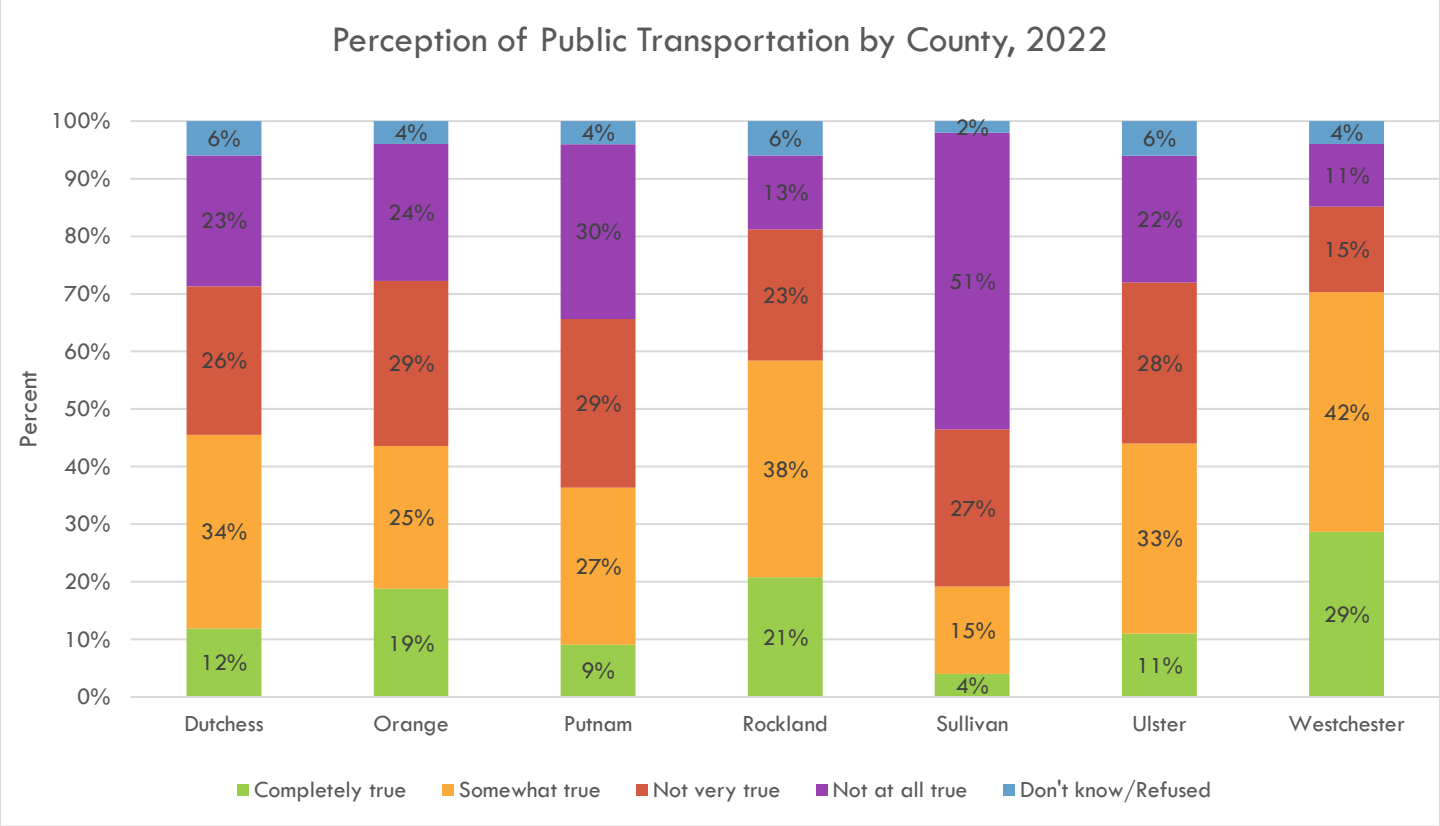


Figure 54



Survey Question 9: *Overall, how would you rate the quality of information you receive from county agencies during public emergencies, such as weather events or disease outbreaks? Would you say it is excellent, good, fair, or poor?*

Figure 55

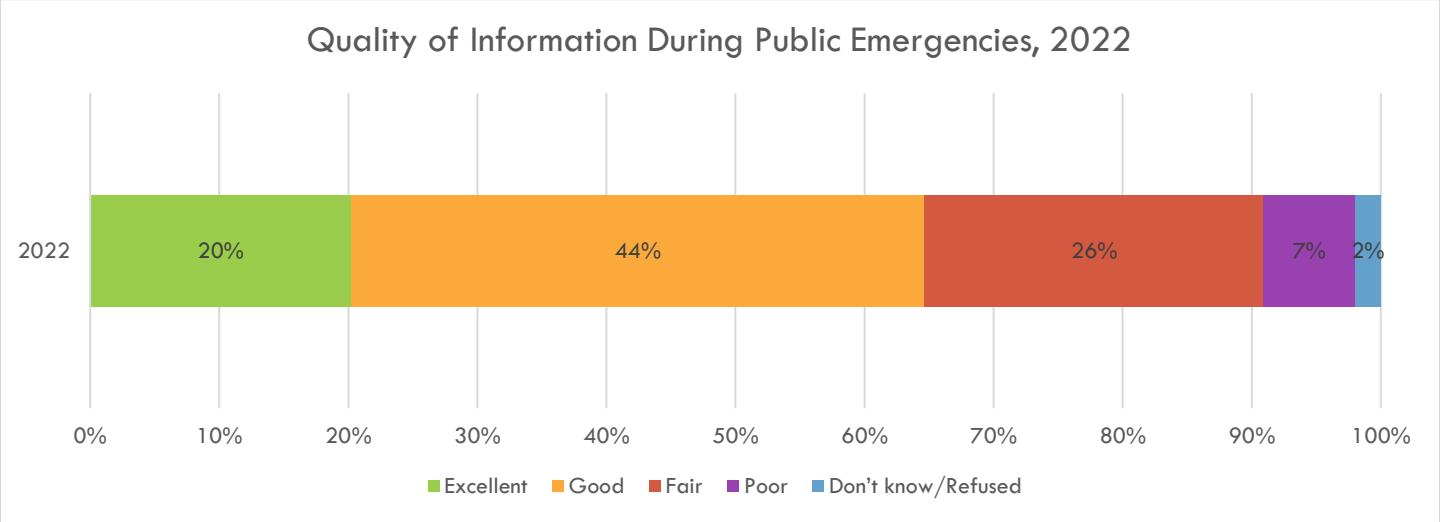
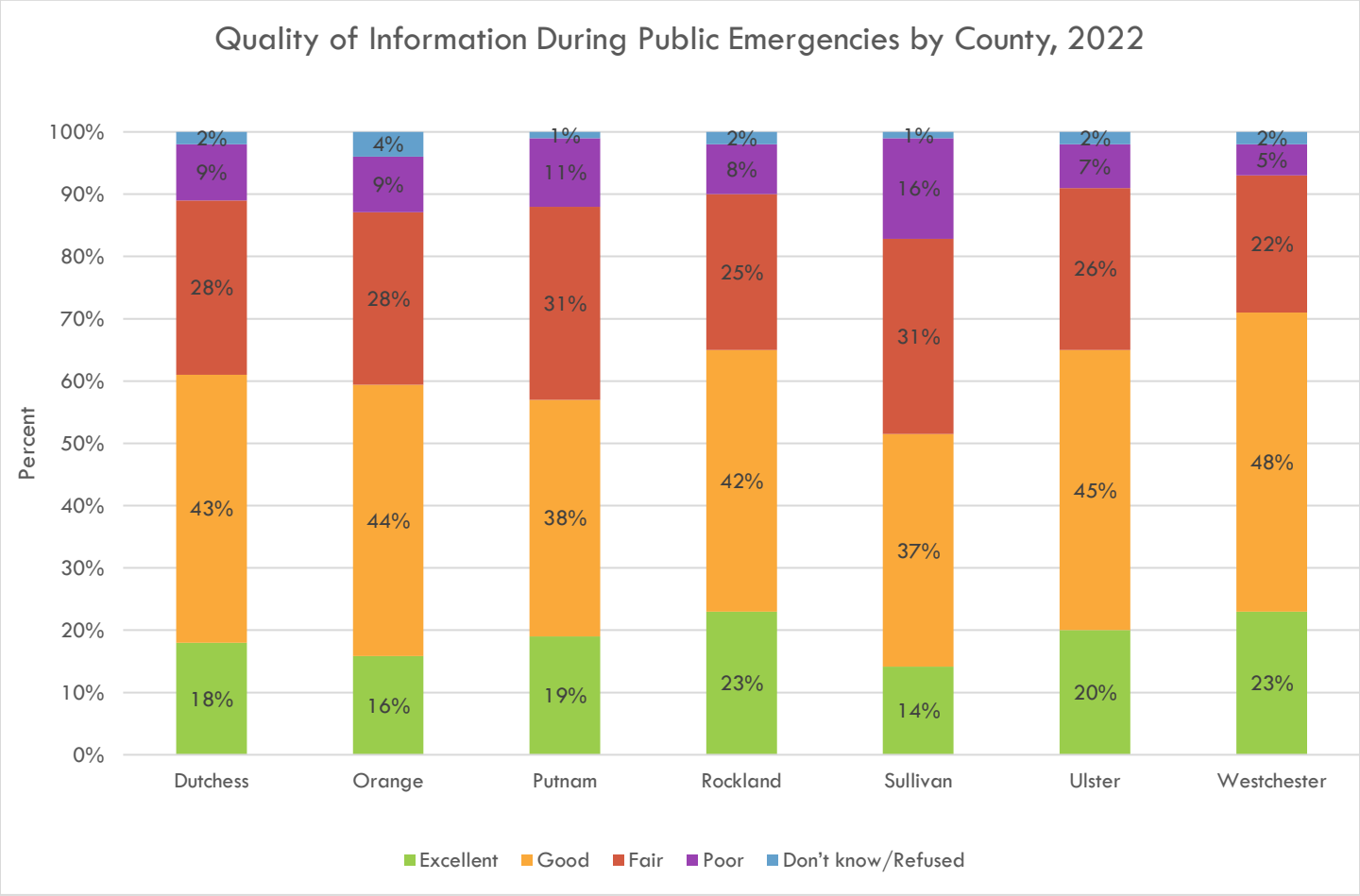


Figure 56



PERCEPTION OF HEALTH

Survey Question 10: *In general, how would you rate your physical health? Would you say that your physical health is excellent, good, fair, or poor? (2018 Survey Question: In general, how would you rate your health? Would you say that your health is excellent, good, fair, or poor?)*

Figure 57

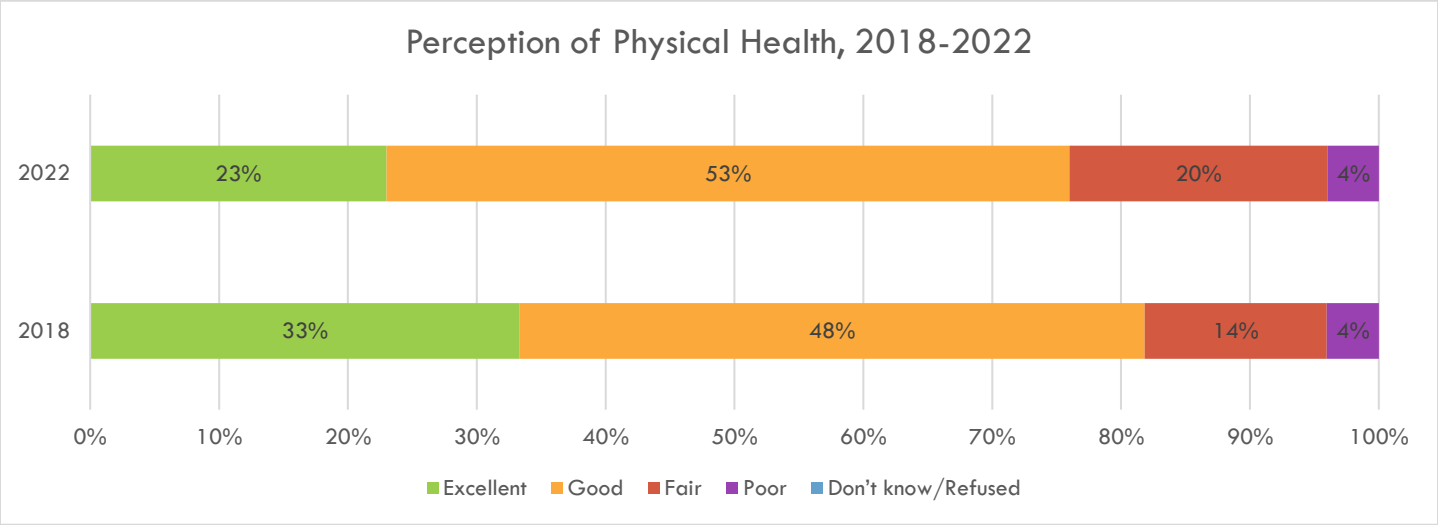
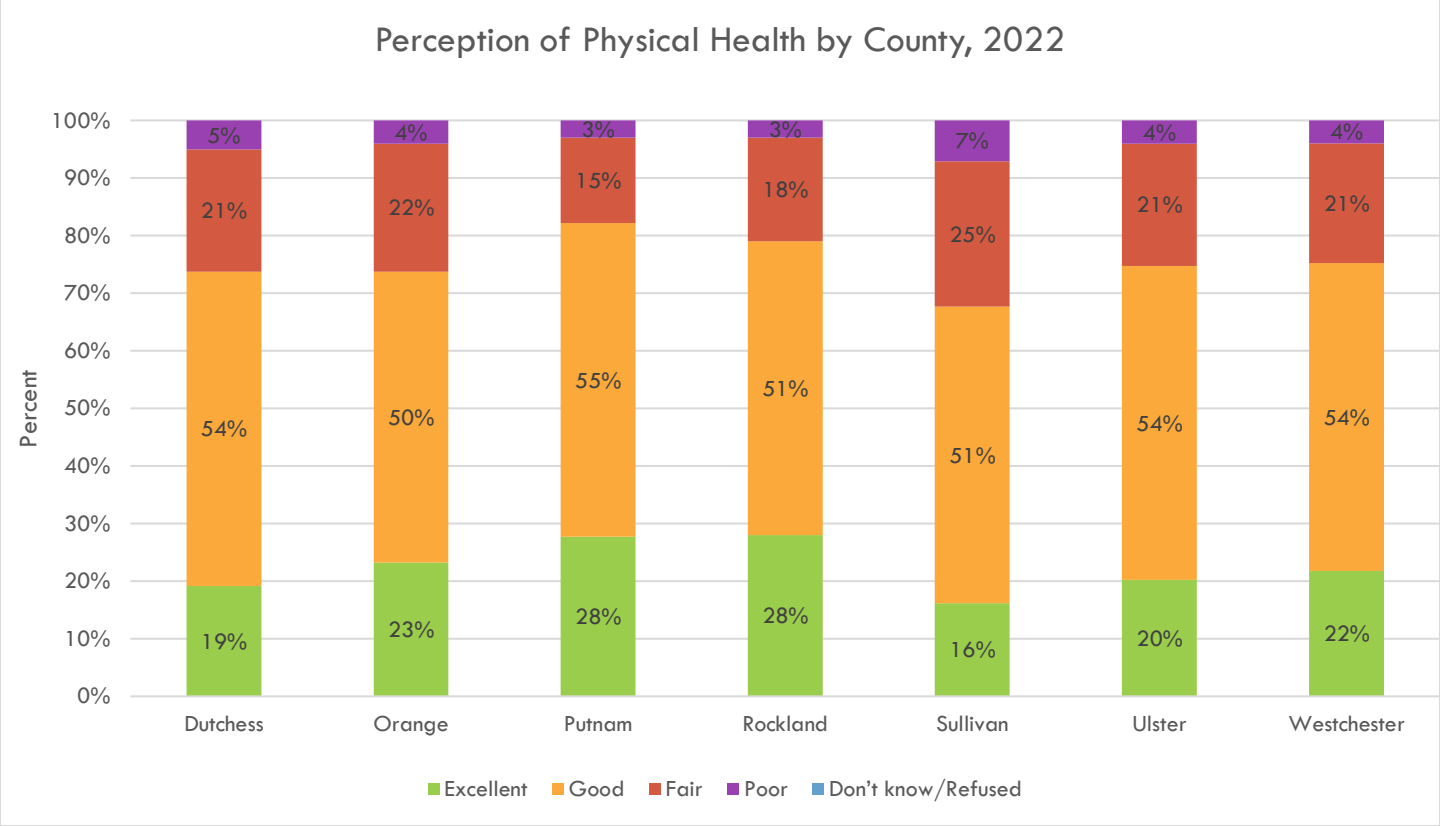


Figure 58



Survey Question 11: *Mental health involves emotional, psychological, and social wellbeing. How would you rate your overall mental health? Would you say that your mental health is excellent, good, fair, or poor?*

Figure 59

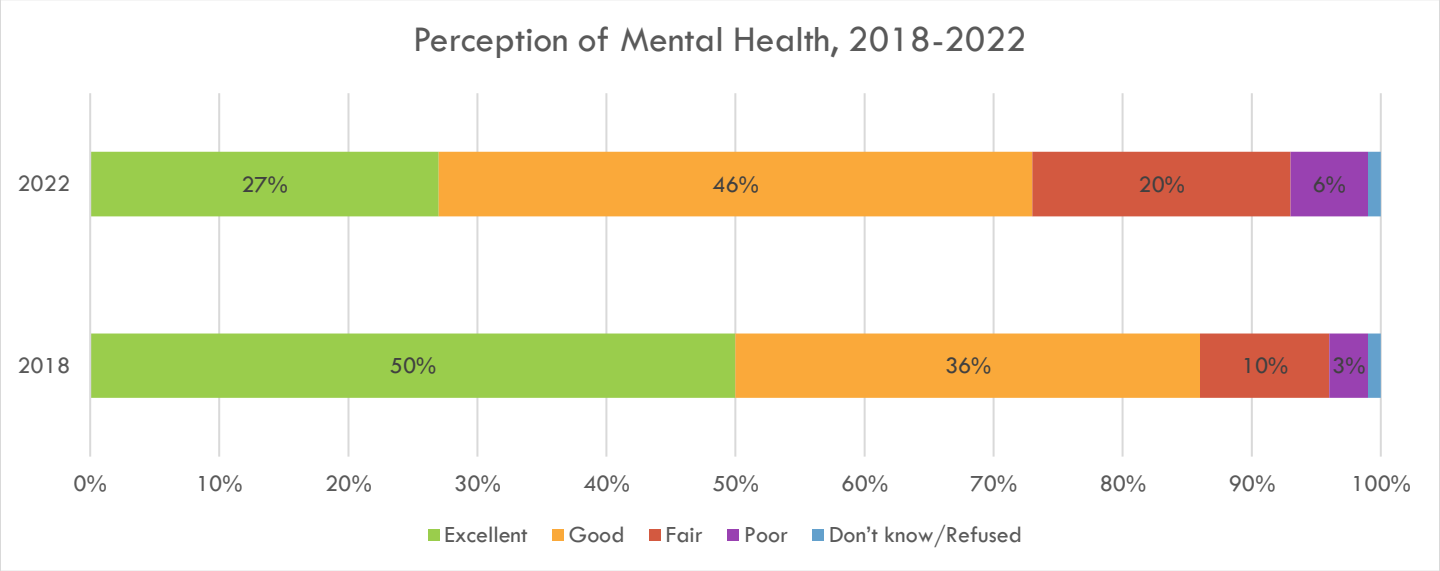
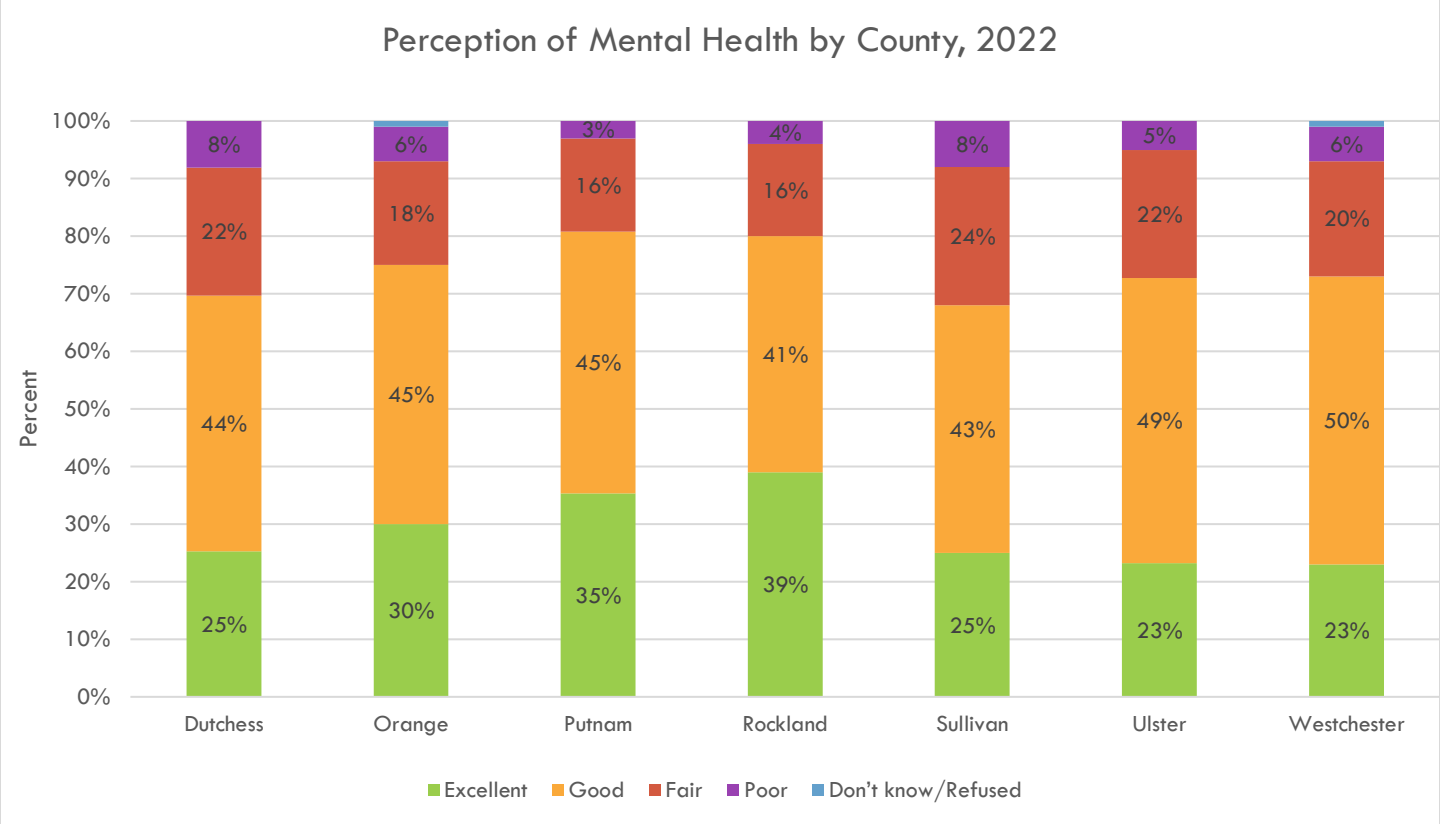


Figure 60



HEALTH BEHAVIORS

Survey Question 12: *Thinking back over the past 12 months, for each of the following statements I read, tell me how many days in an AVERAGE WEEK you did each.* ***Over the past 12 months how many days in an average week did you eat a balanced, healthy diet?***

Figure 61

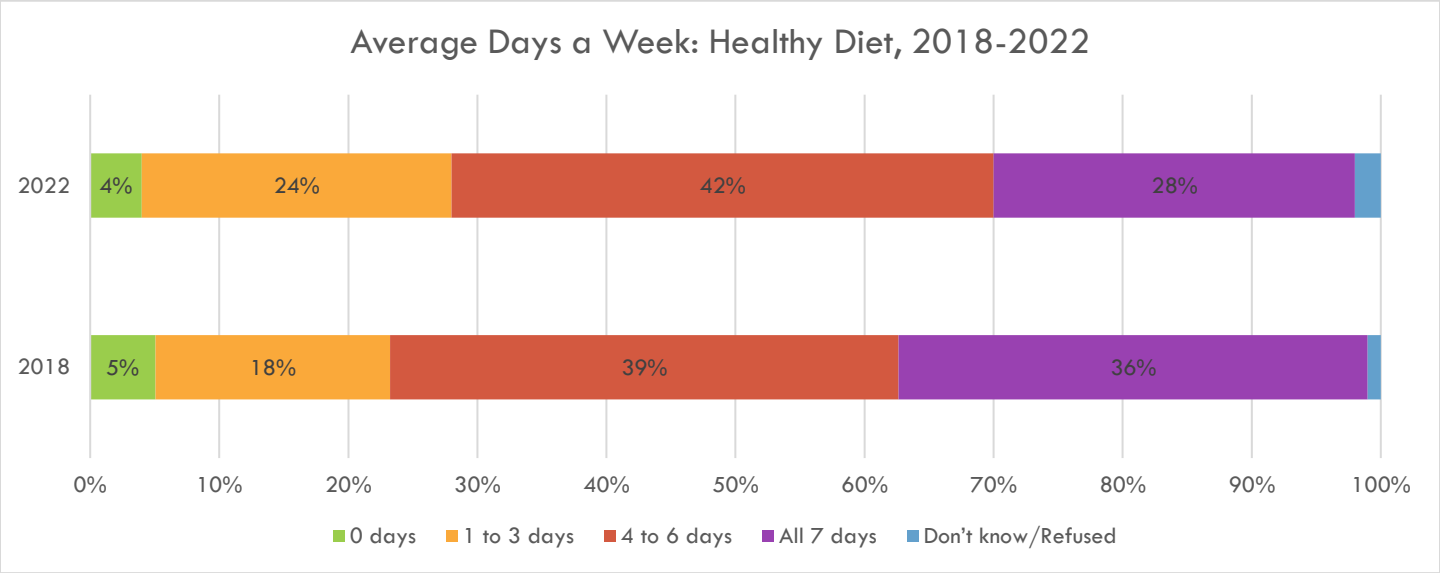
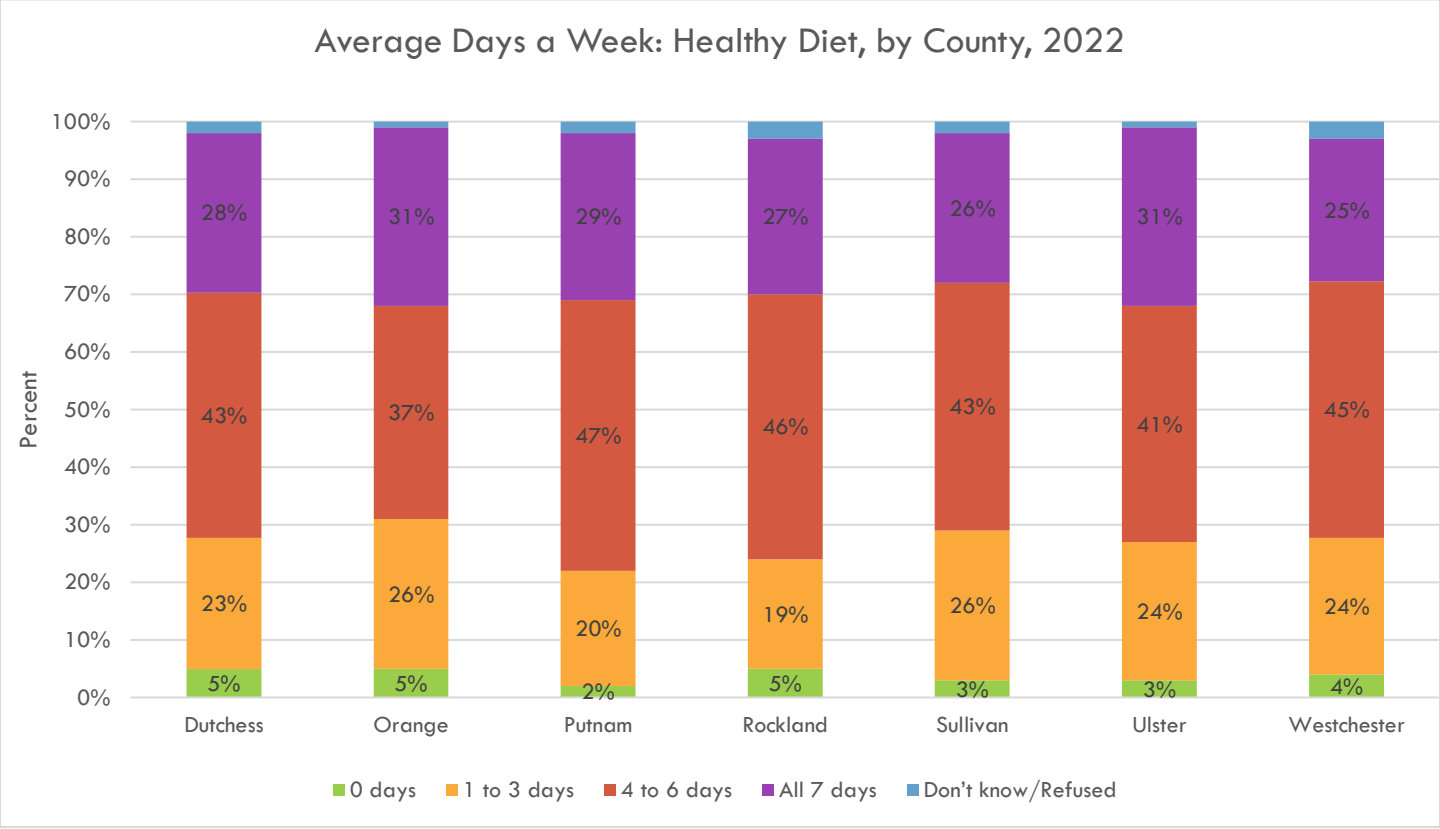


Figure 62



Survey Question 13: *Thinking back over the past 12 months, for each of the following statements I read, tell me how many days in an AVERAGE WEEK you did each.* ***Over the past 12 months how many days in an average week did you exercise for 30 minutes or more a day?***

Figure 63

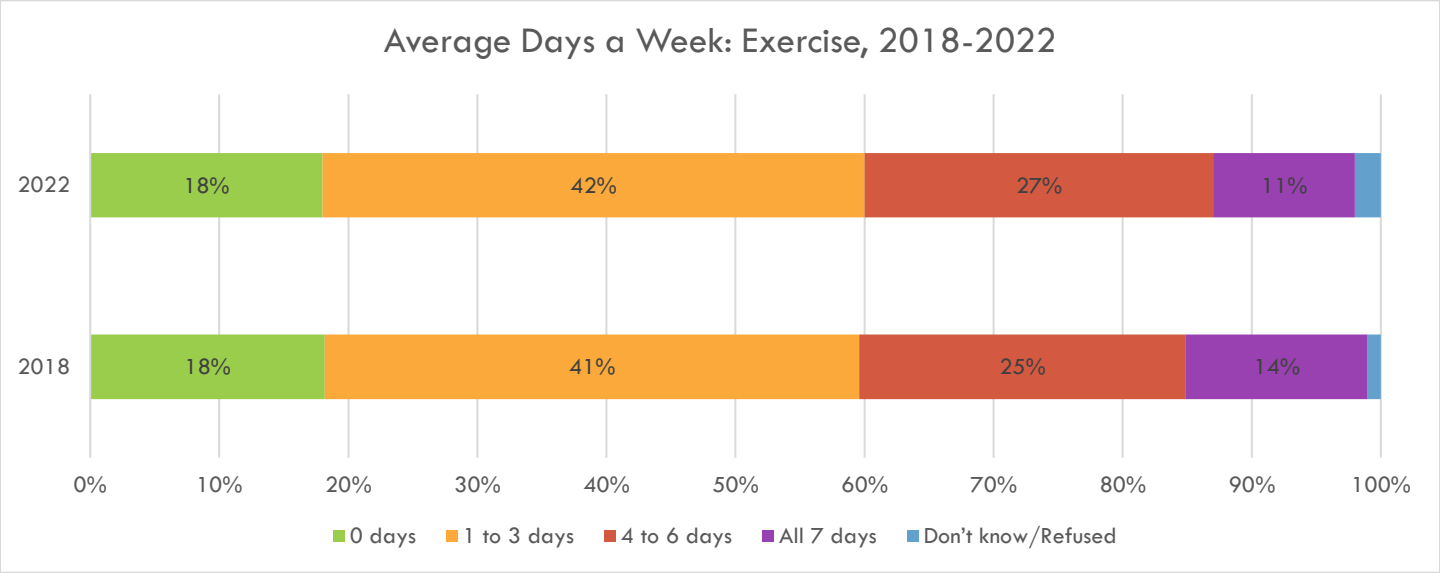
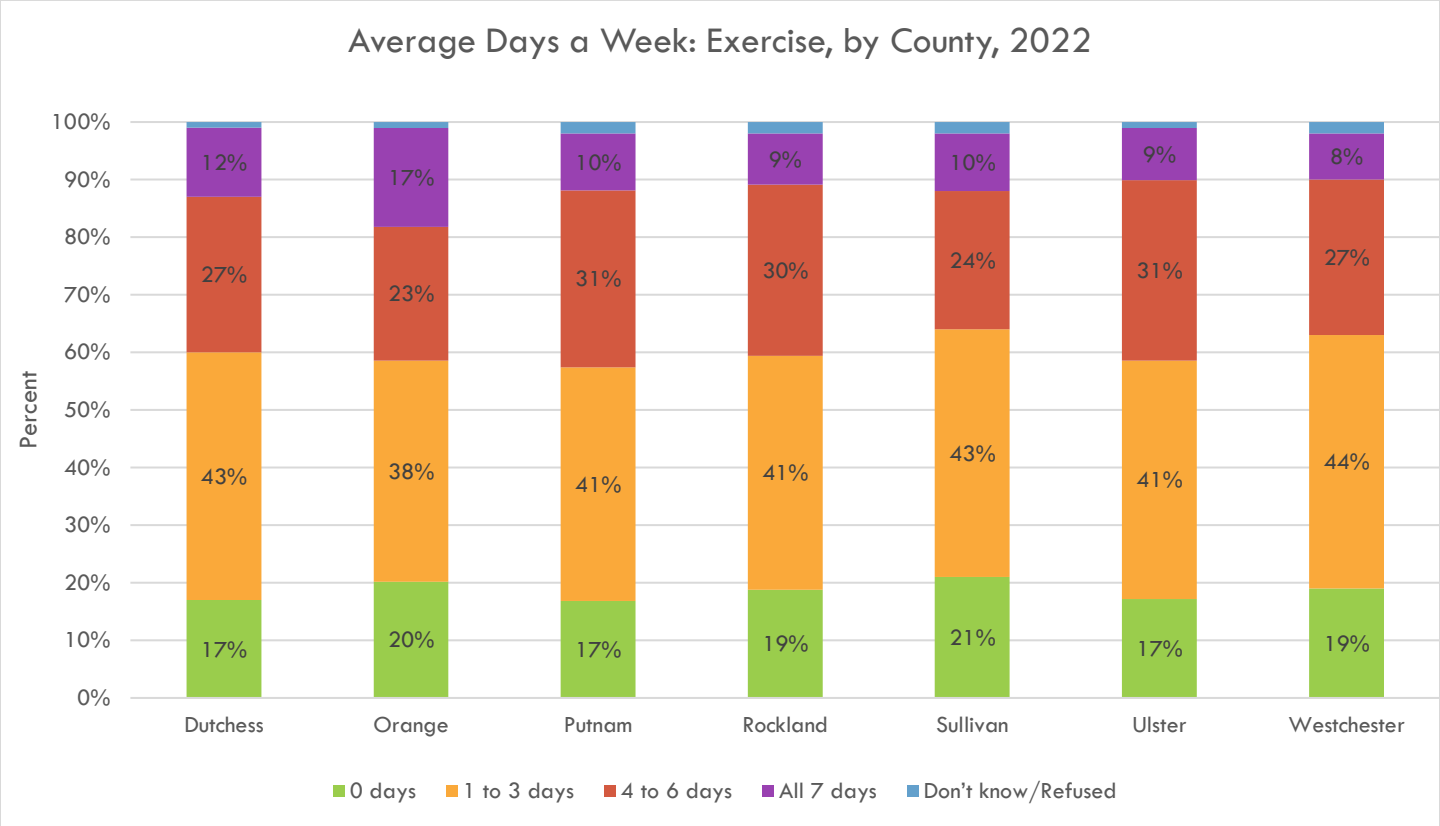


Figure 64



Survey Question 14: *Thinking back over the past 12 months, for each of the following statements I read, tell me how many days in an AVERAGE WEEK you did each.* ***Over the past 12 months how many days in an average week did you get 7 to 9 hours of sleep in a night?***

Figure 65

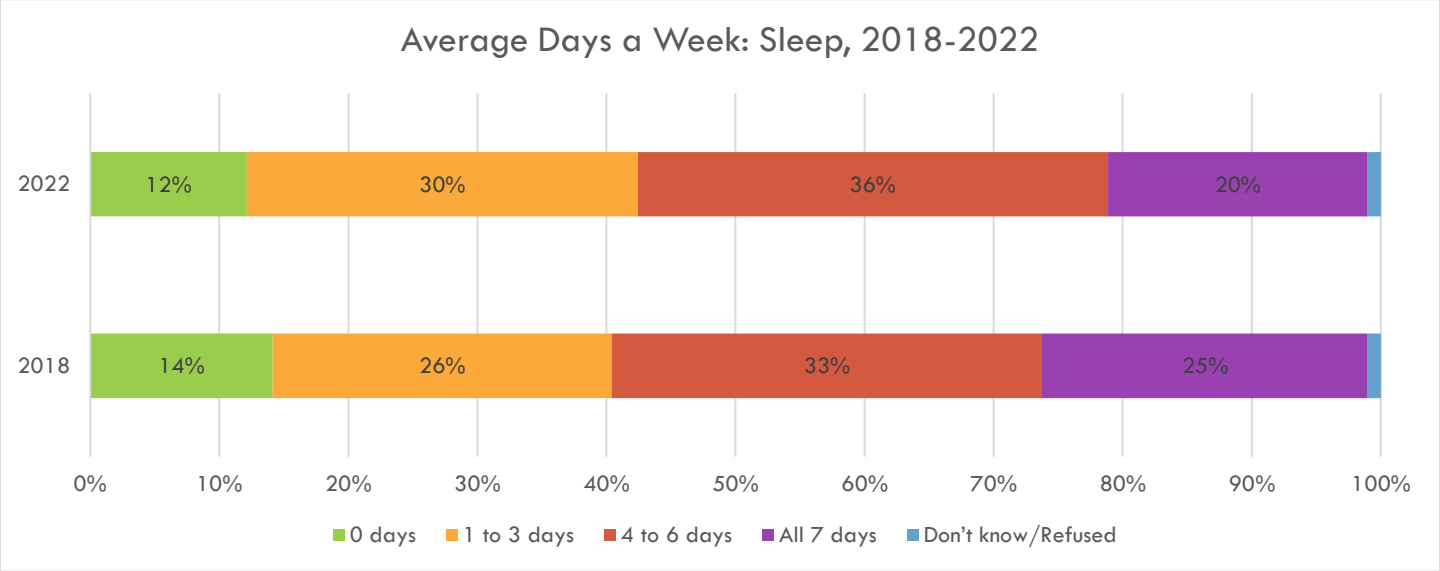
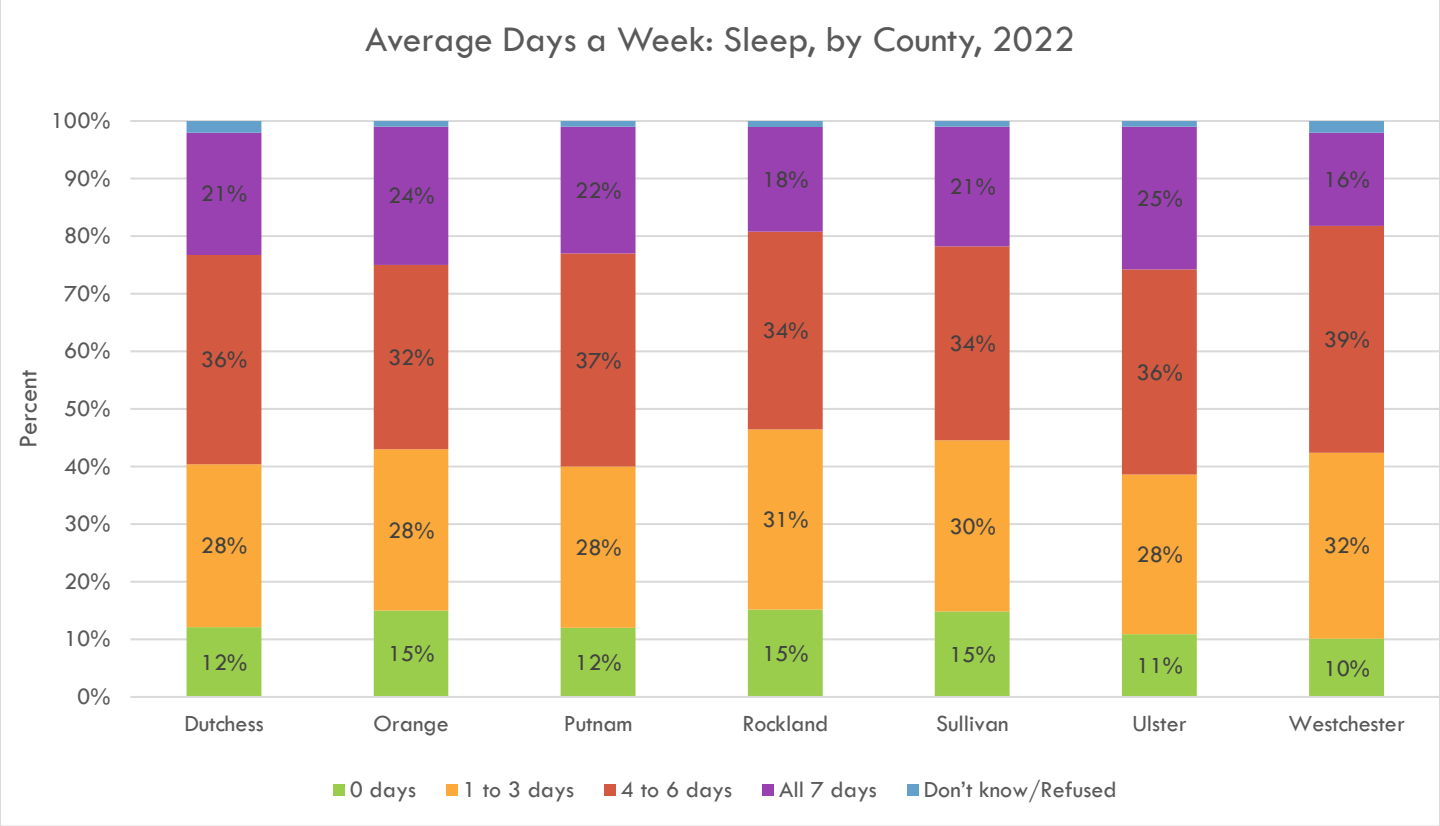


Figure 66



Survey Question 15: *On an average day, how stressed do you feel?*

Figure 67

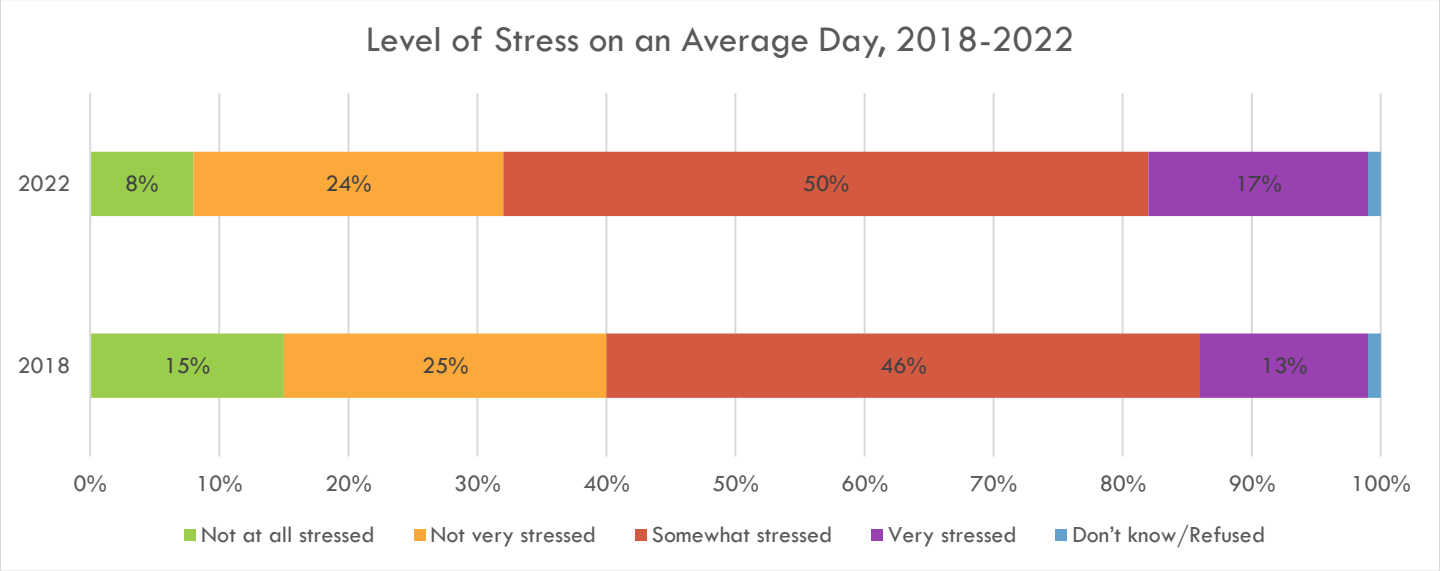
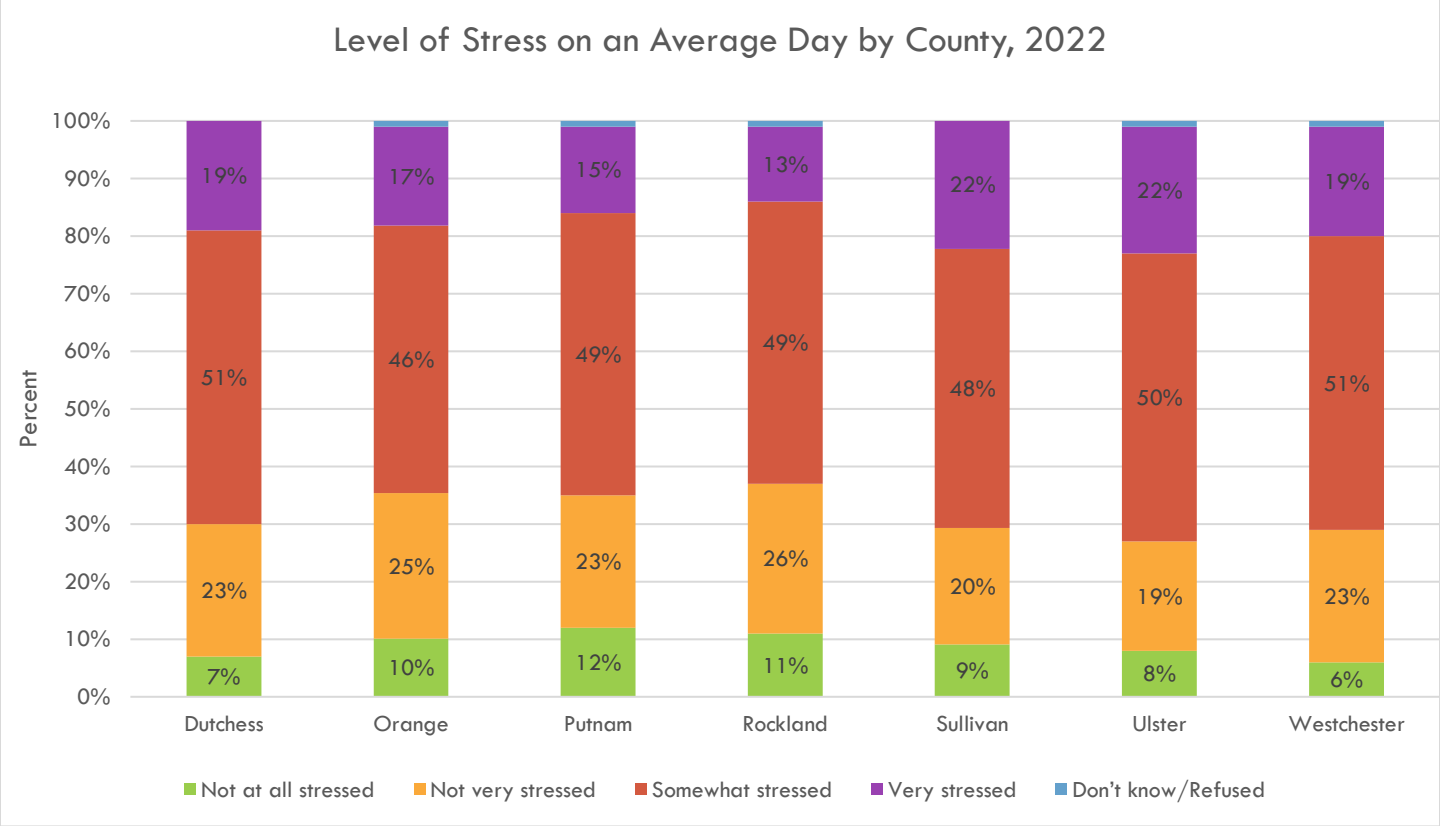


Figure 68



Survey Question 16: *In your everyday life, how often do you feel that you have quality encounters with friends, family, and neighbors that make you feel that people care about you?*

Figure 69

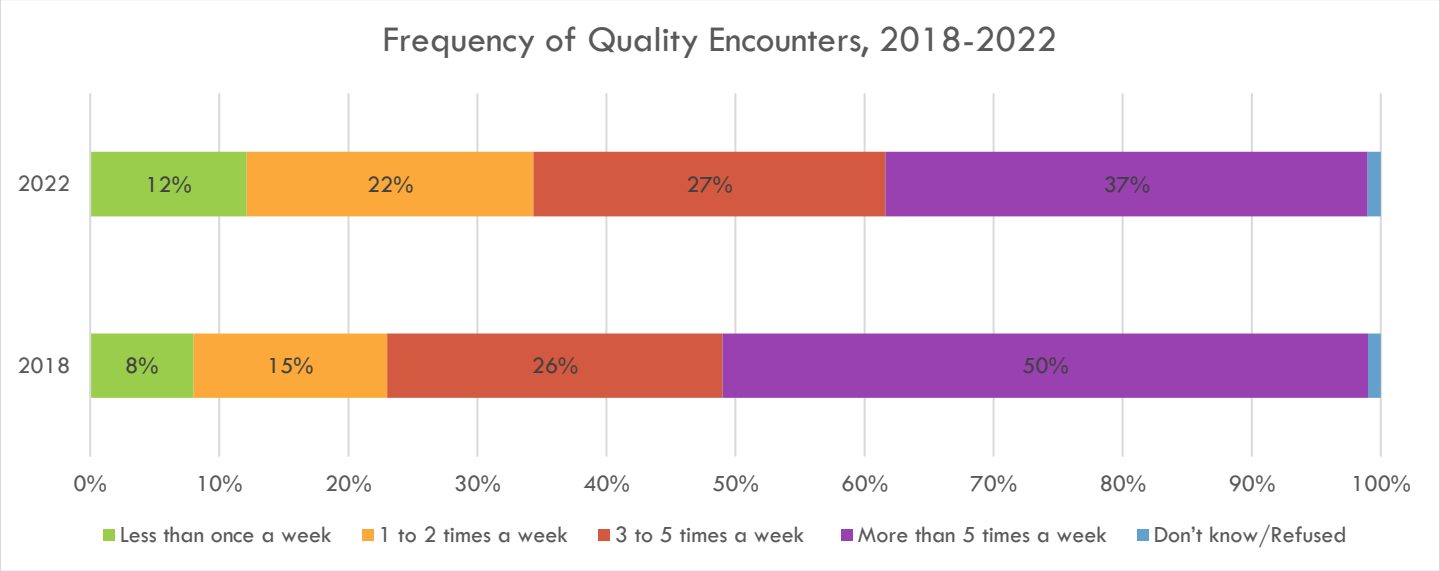
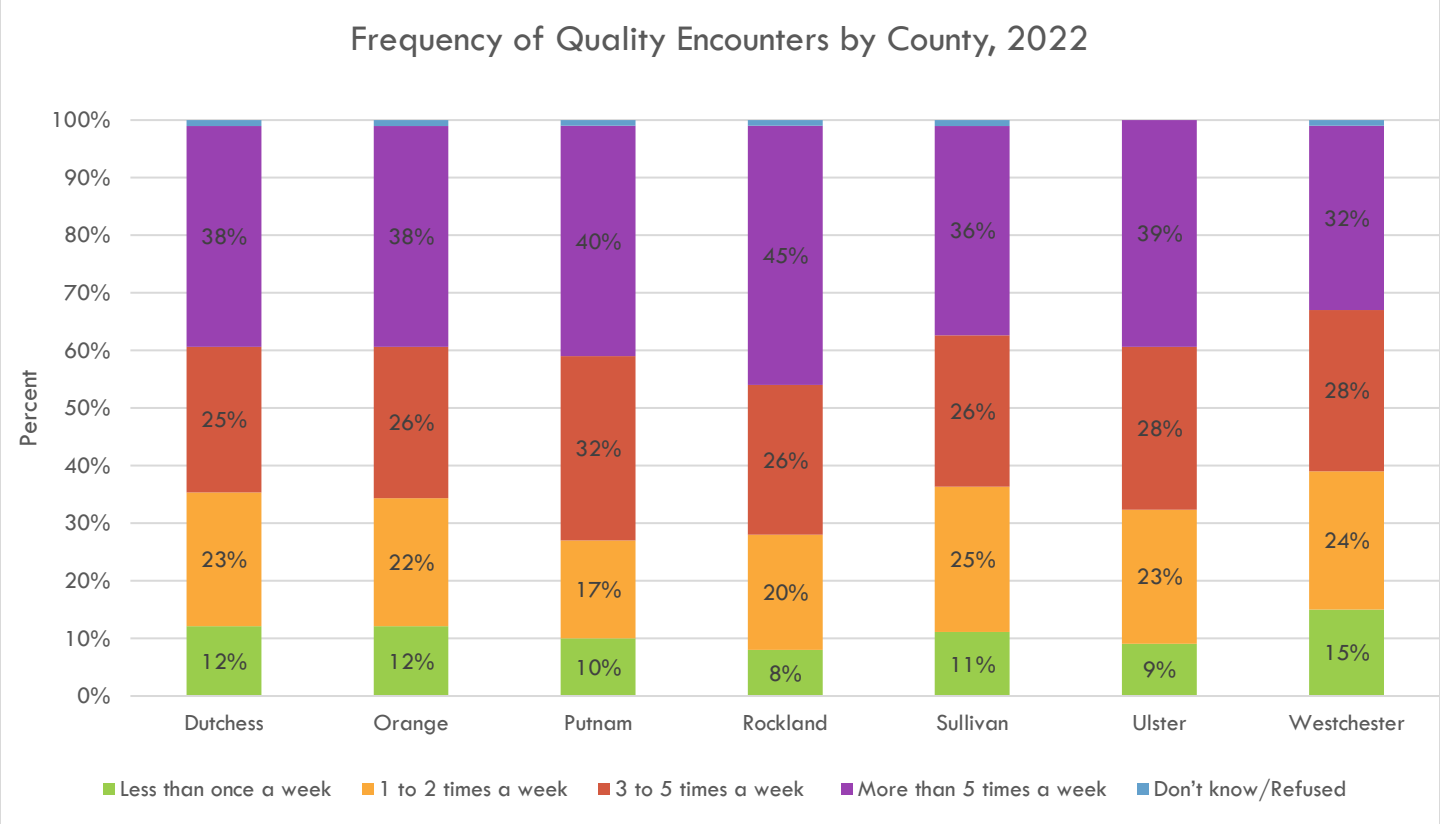


Figure 70



Survey Question 17: *How frequently in the past year, on average, did you drink alcohol?*

Figure 71

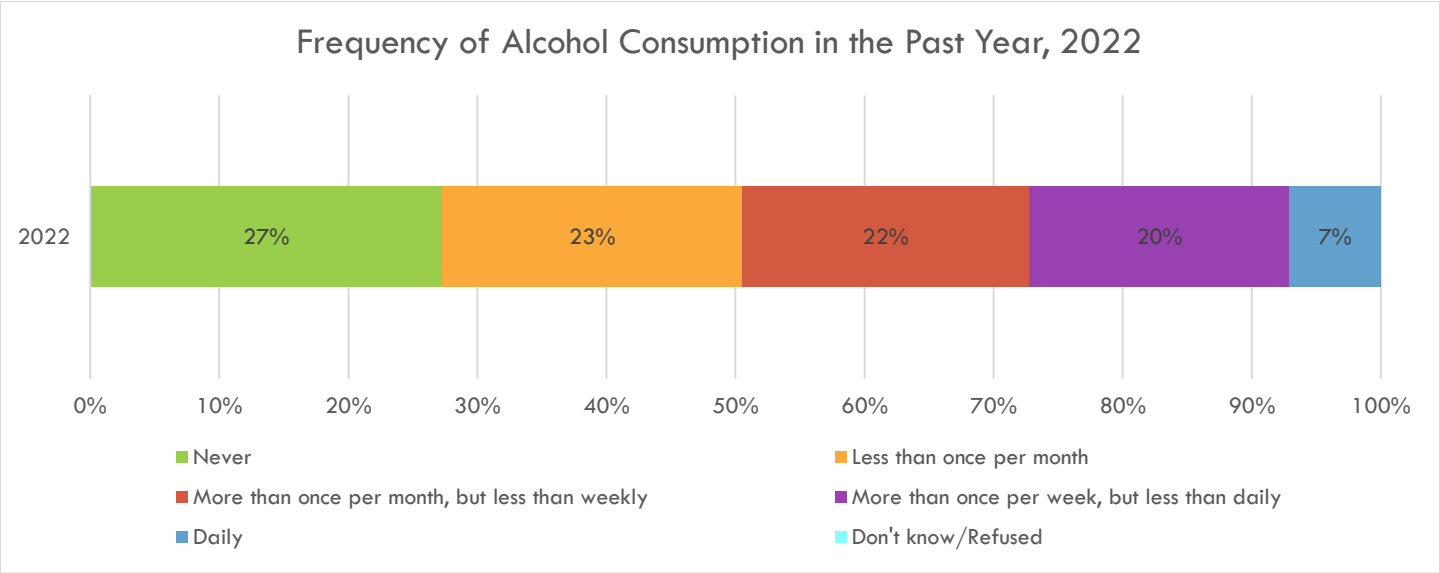
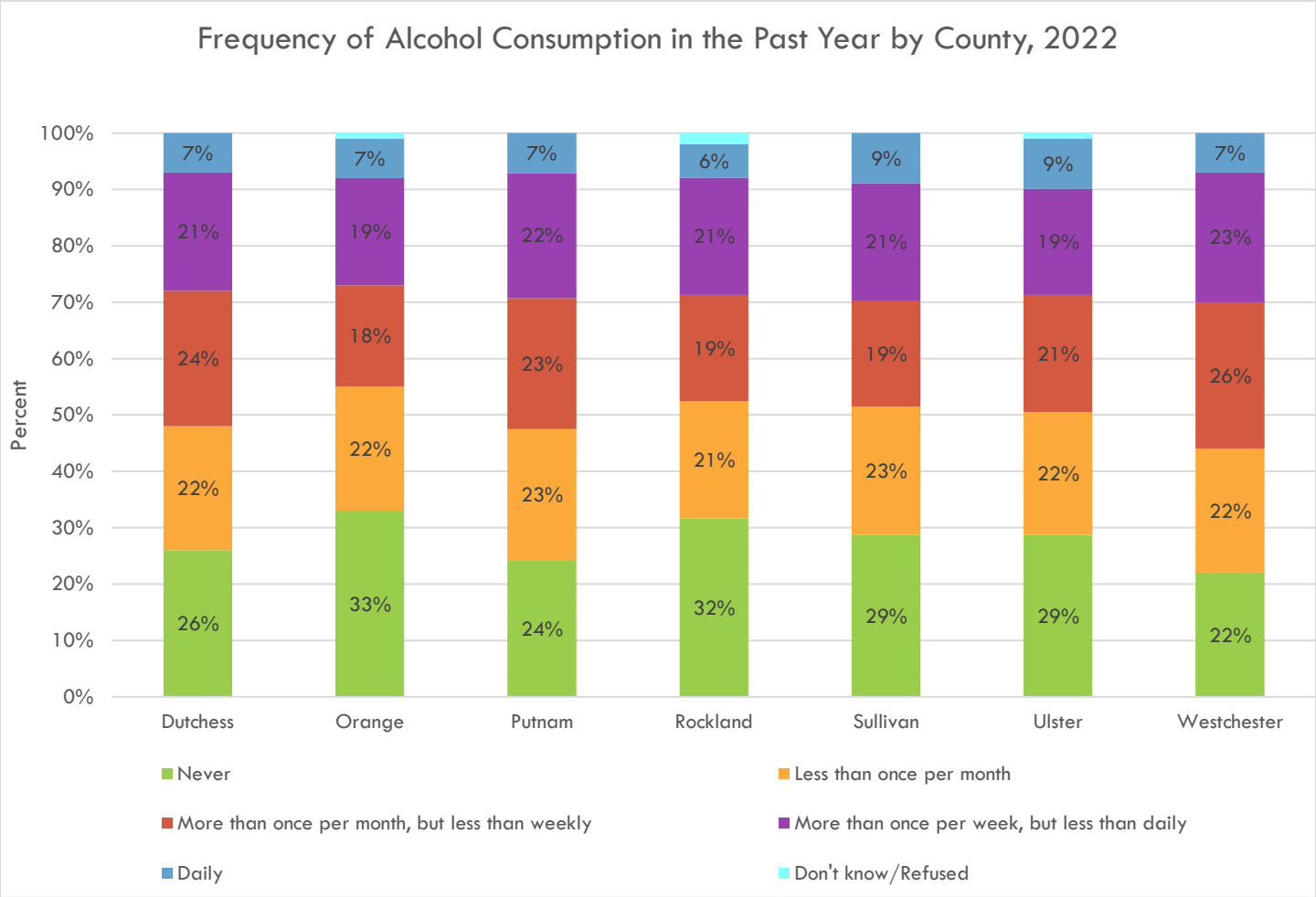
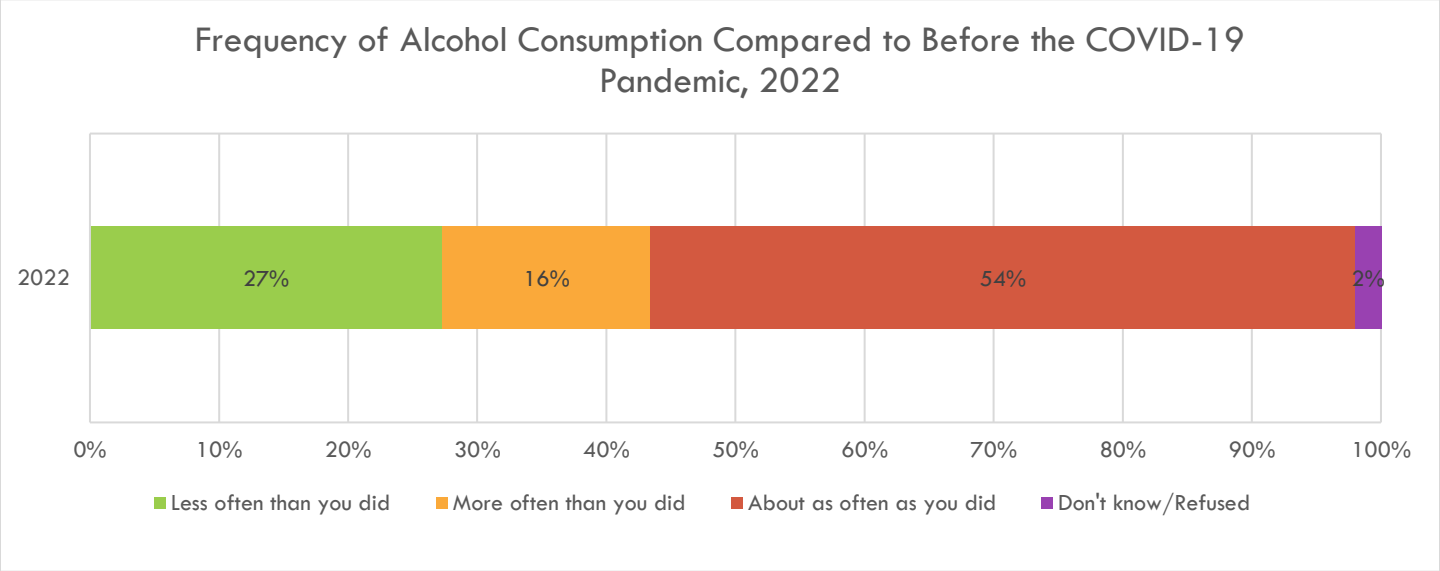


Figure 72



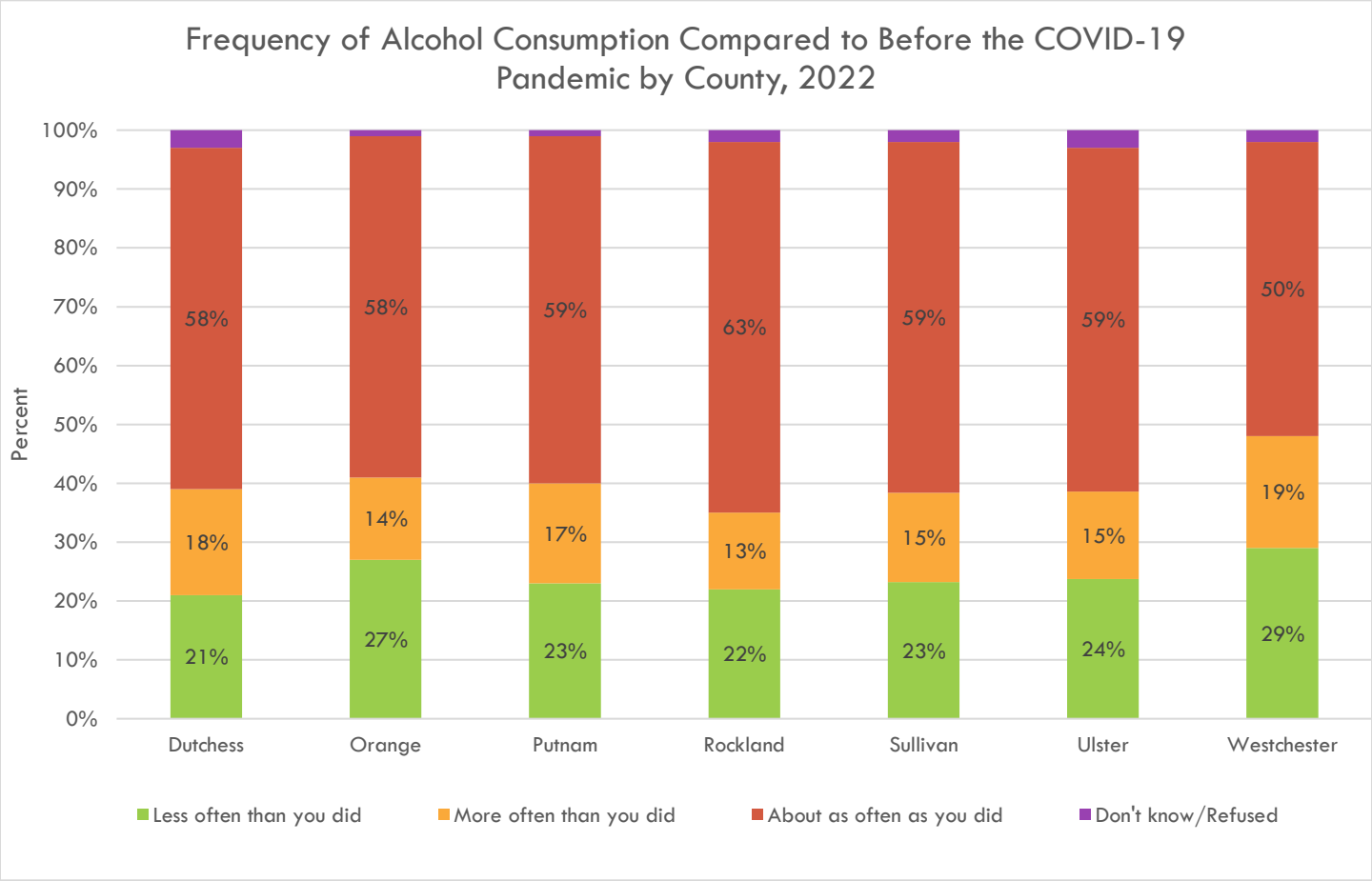
Survey Question 18: *(If drank in alcohol in the past year) Do you currently drink alcohol less often than you did before the COVID-19 pandemic, more often than you did before the pandemic, or about as often as you did before the pandemic?*

Figure 73



Note: The chart above depicts the proportion amongst respondents that reported drinking alcohol in the past year, as per question 17.

Figure 74



Note: The chart above depicts the proportion amongst respondents that reported drinking alcohol in the past year, as per question 17.

Survey Question 19: *How frequently in the past year have you used a drug, whether it was a prescription medication or not, for non-medical reasons? (2018 Survey Question: How frequently in the past year have you used an illegal drug or used a prescription medication for non-medical reasons?)*

Figure 75

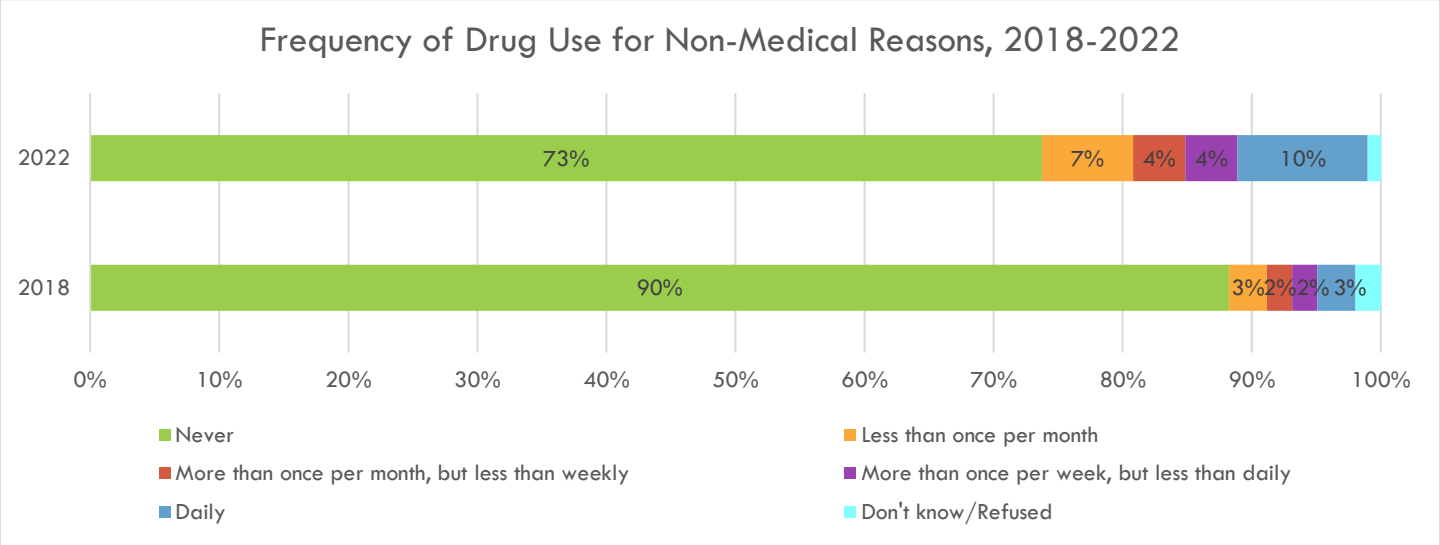
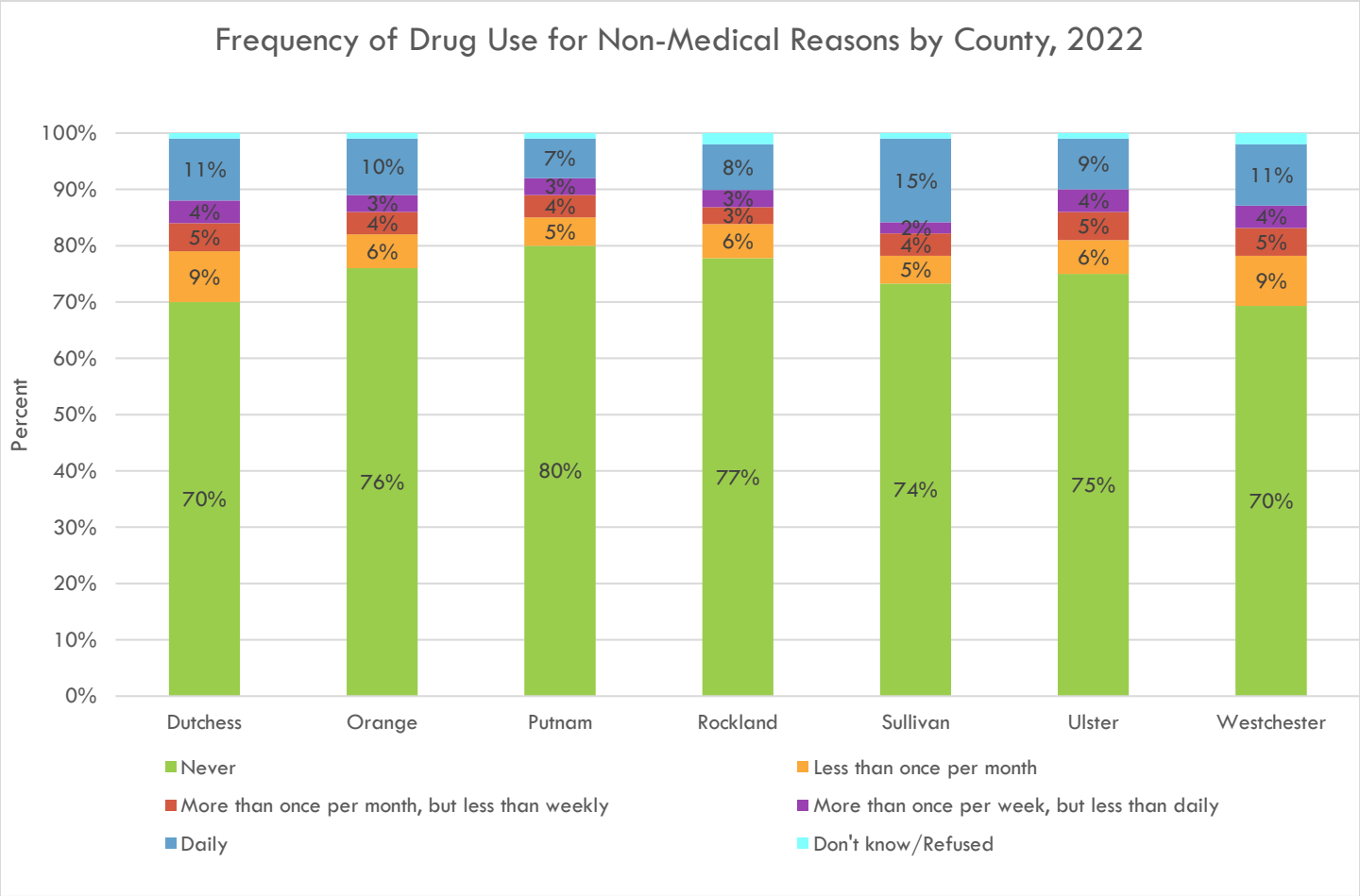
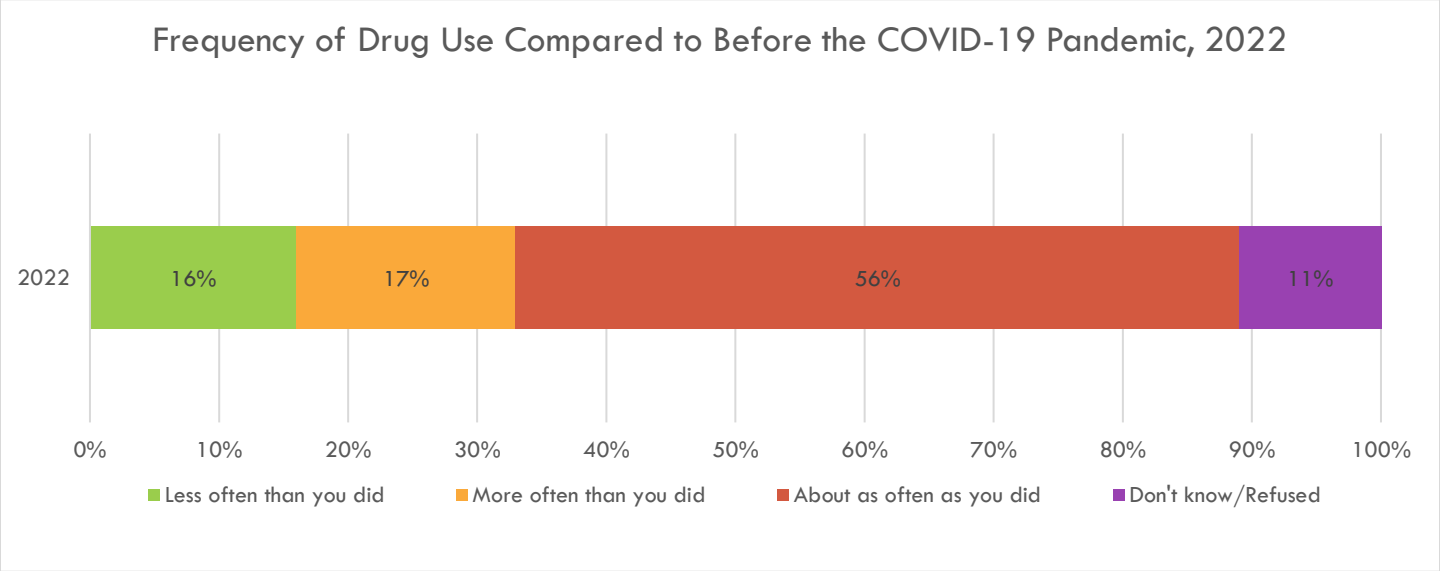


Figure 76



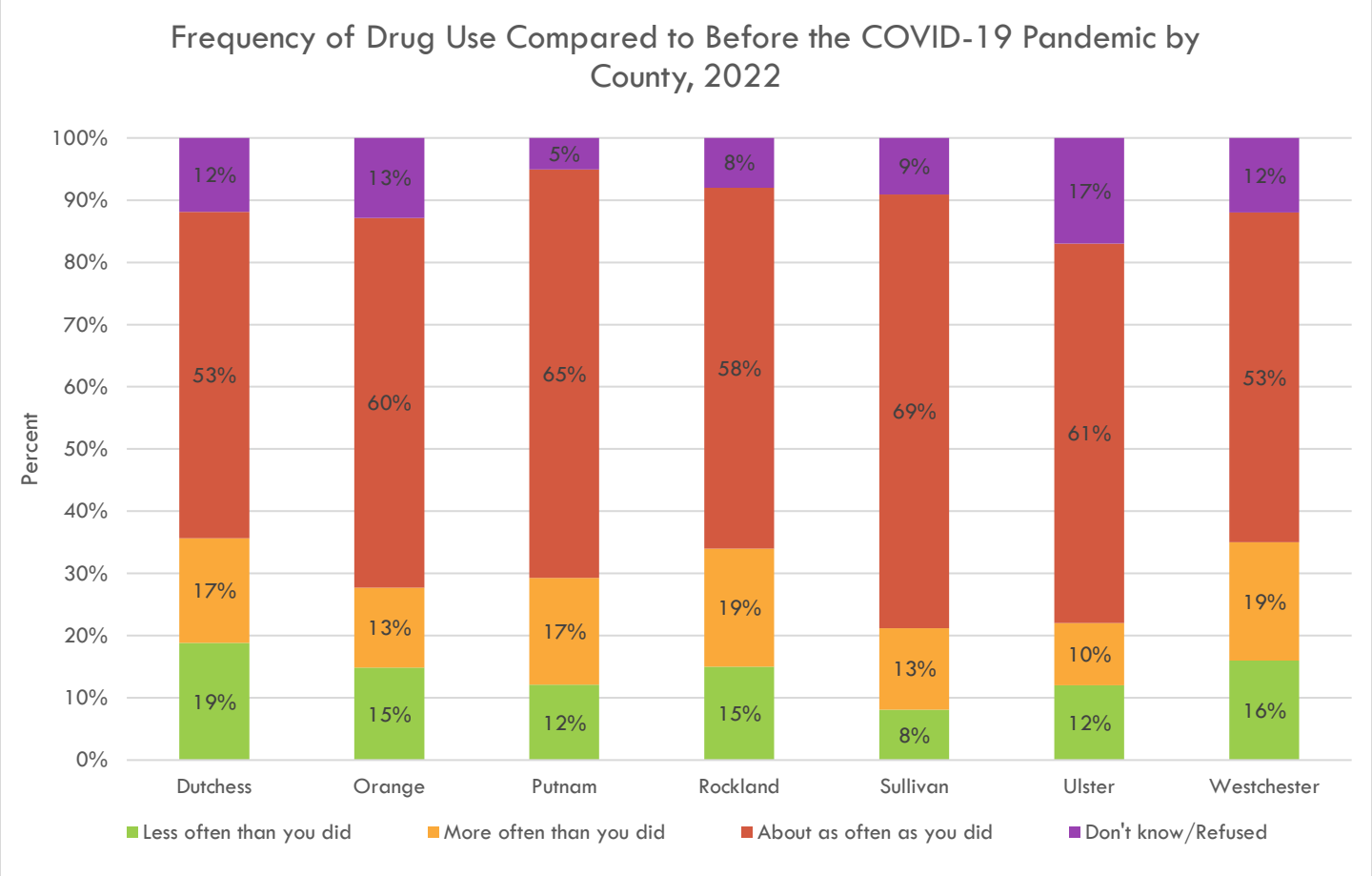
Survey Question 20: *(If used a drug for non-medical reasons in the past year) Do you currently use any type of drug less often than you did before the COVID-19 pandemic, more often than you did before the pandemic, or about as often as you did before the pandemic?*

Figure 77



Note: The chart above depicts the proportion amongst respondents that reported non-medical drug use in the past year, as per question 19.

Figure 78



Note: The chart above depicts the proportion amongst respondents that reported non-medical drug use in the past year, as per question 19.

ACCESS TO RESOURCES

Survey Question 21**: In the past 12 months, have you or any other member of your household been unable to get any of the following when it was really needed? Please answer yes or no for each item.* ***Food

Figure 79

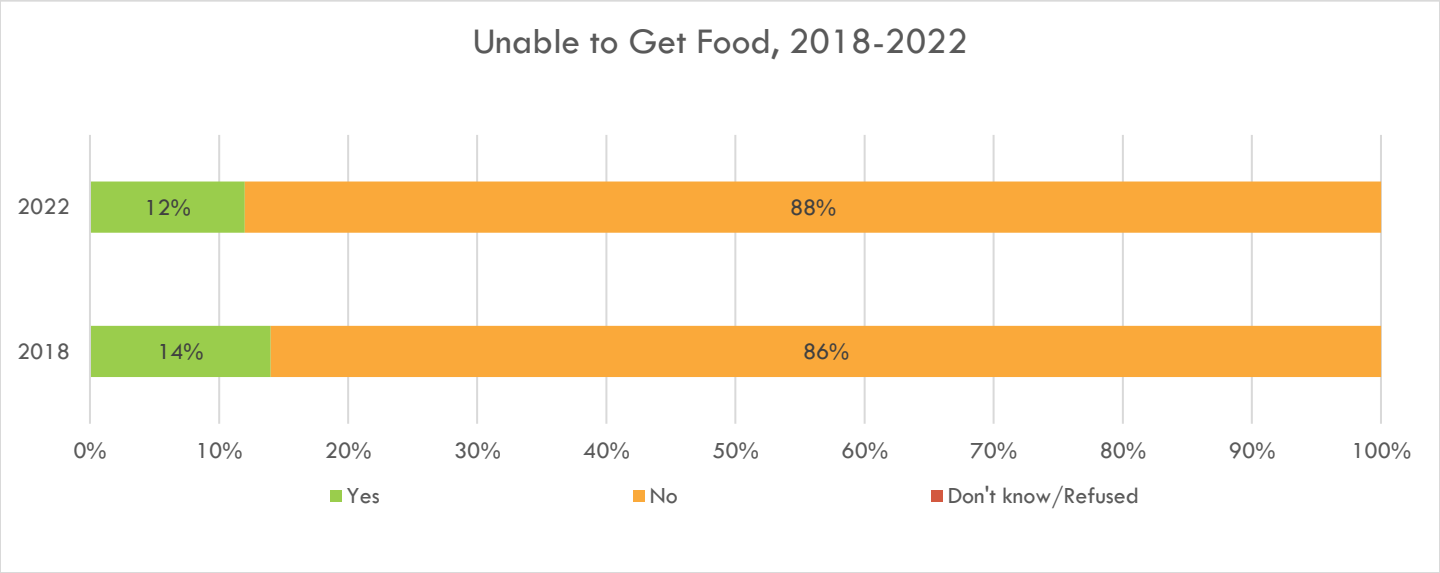
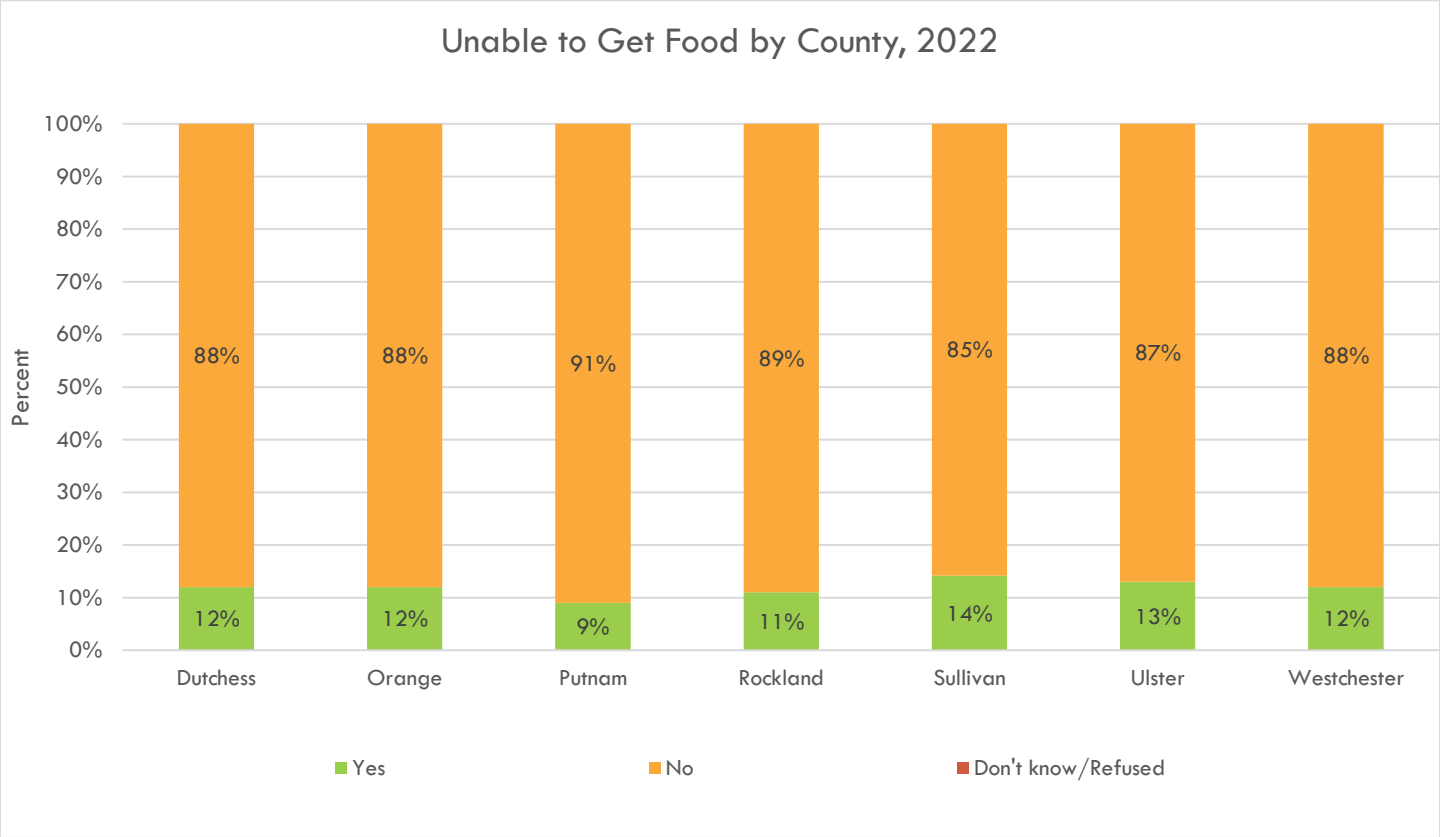


Figure 80



Survey Question 22: *In the past 12 months, have you or any other member of your household been unable to get any of the following when it was really needed? Please answer yes or no for each item.* ***Utilities, including heat and electric***

Figure 81

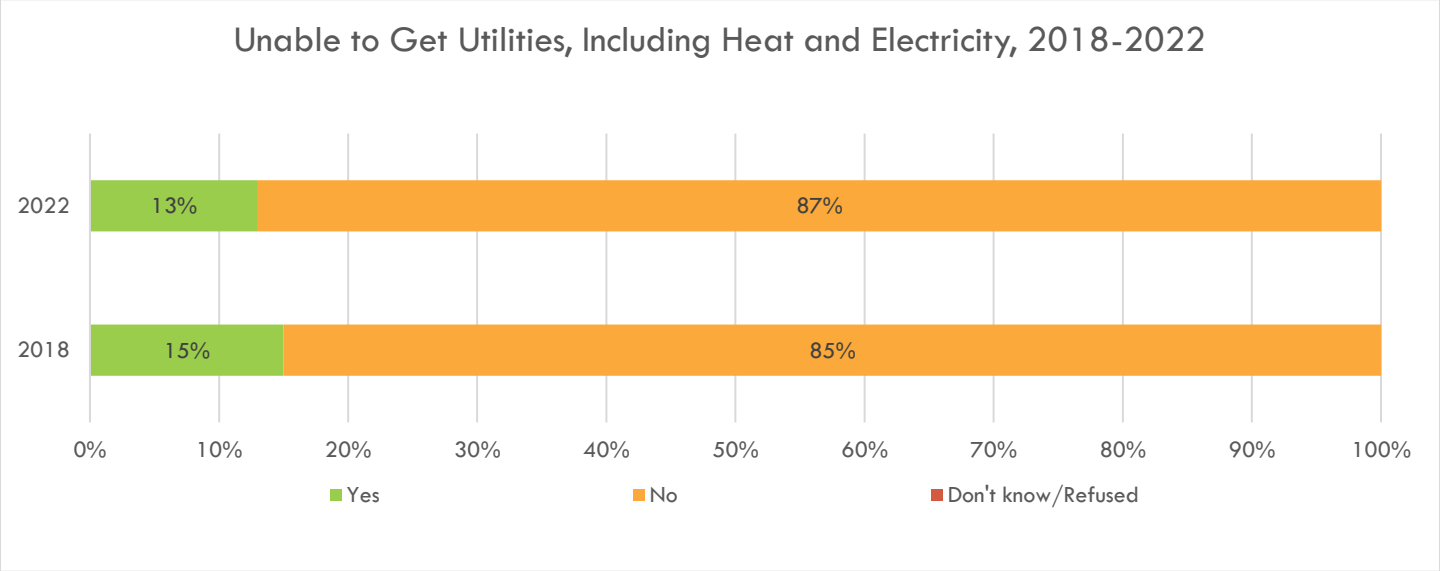
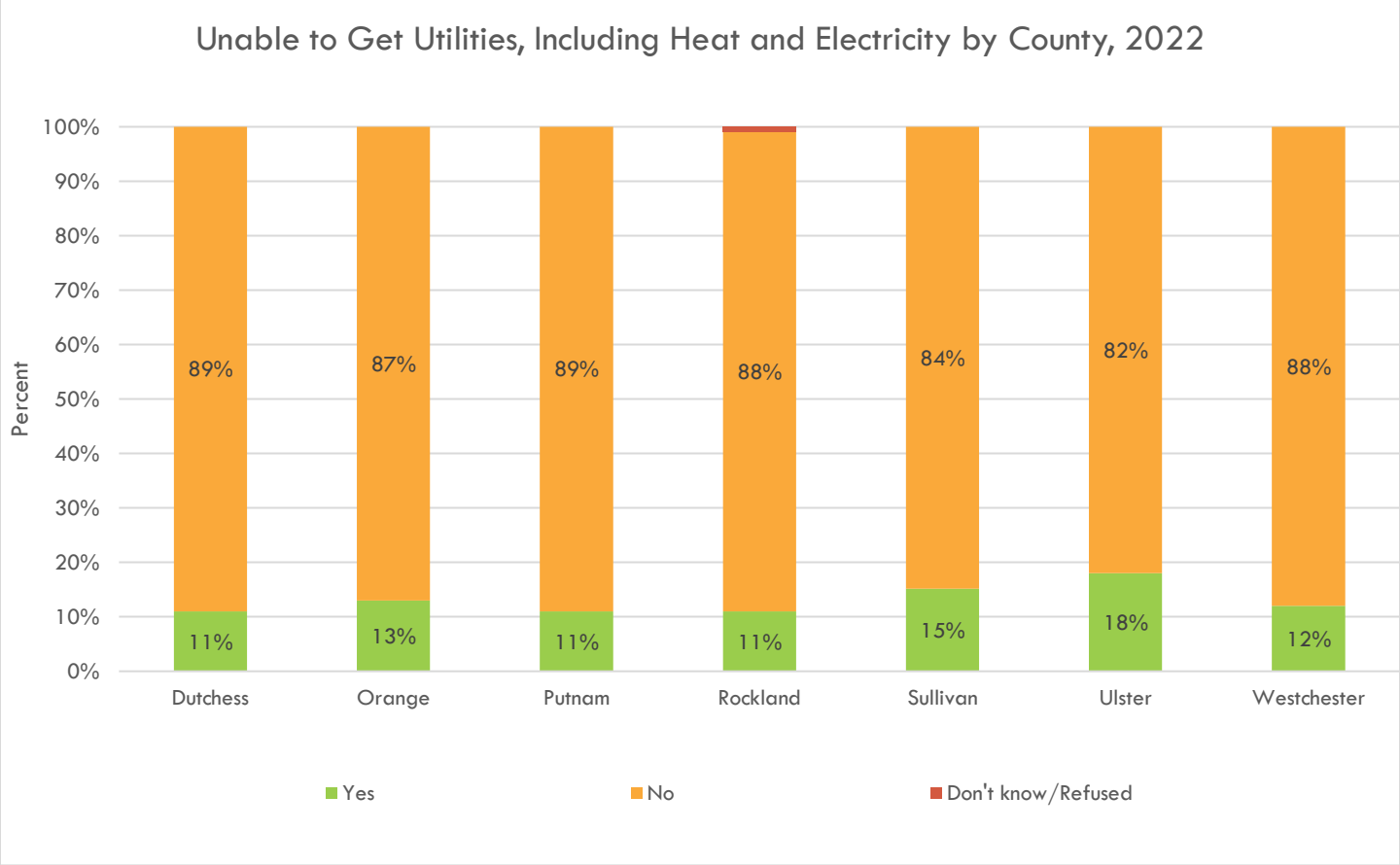


Figure 82



Survey Question 23: *In the past 12 months, have you or any other member of your household been unable to get any of the following when it was really needed? Please answer yes or no for each item.* ***Medicine***

Figure 83

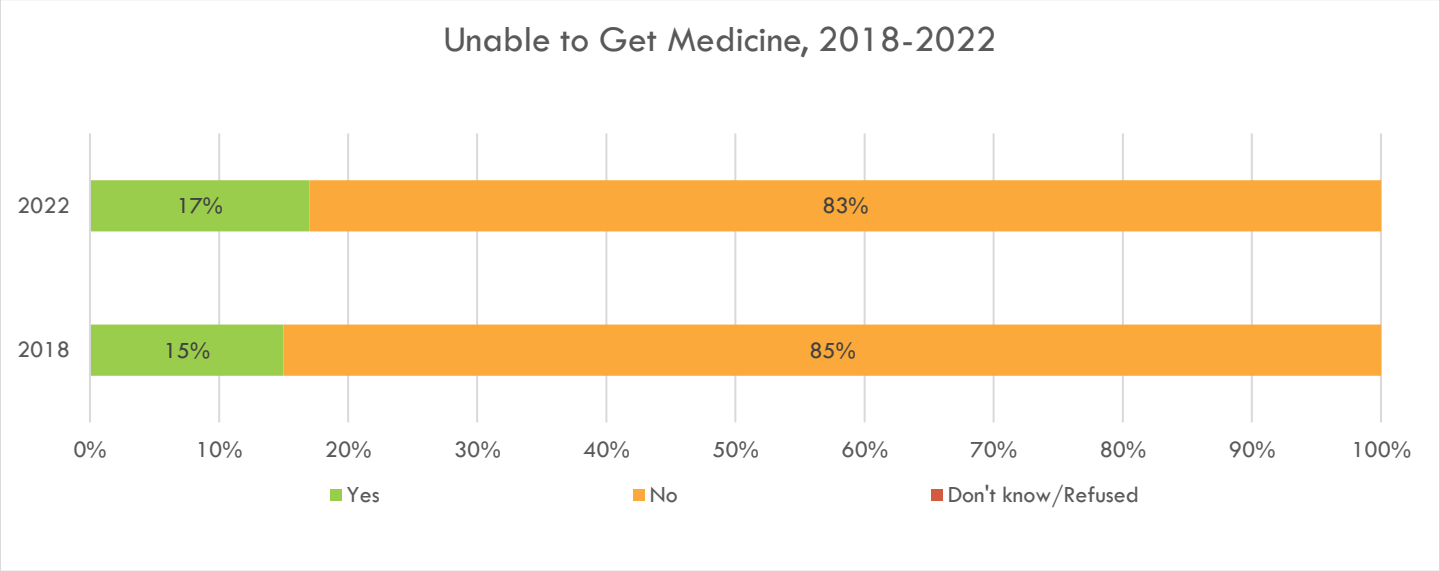
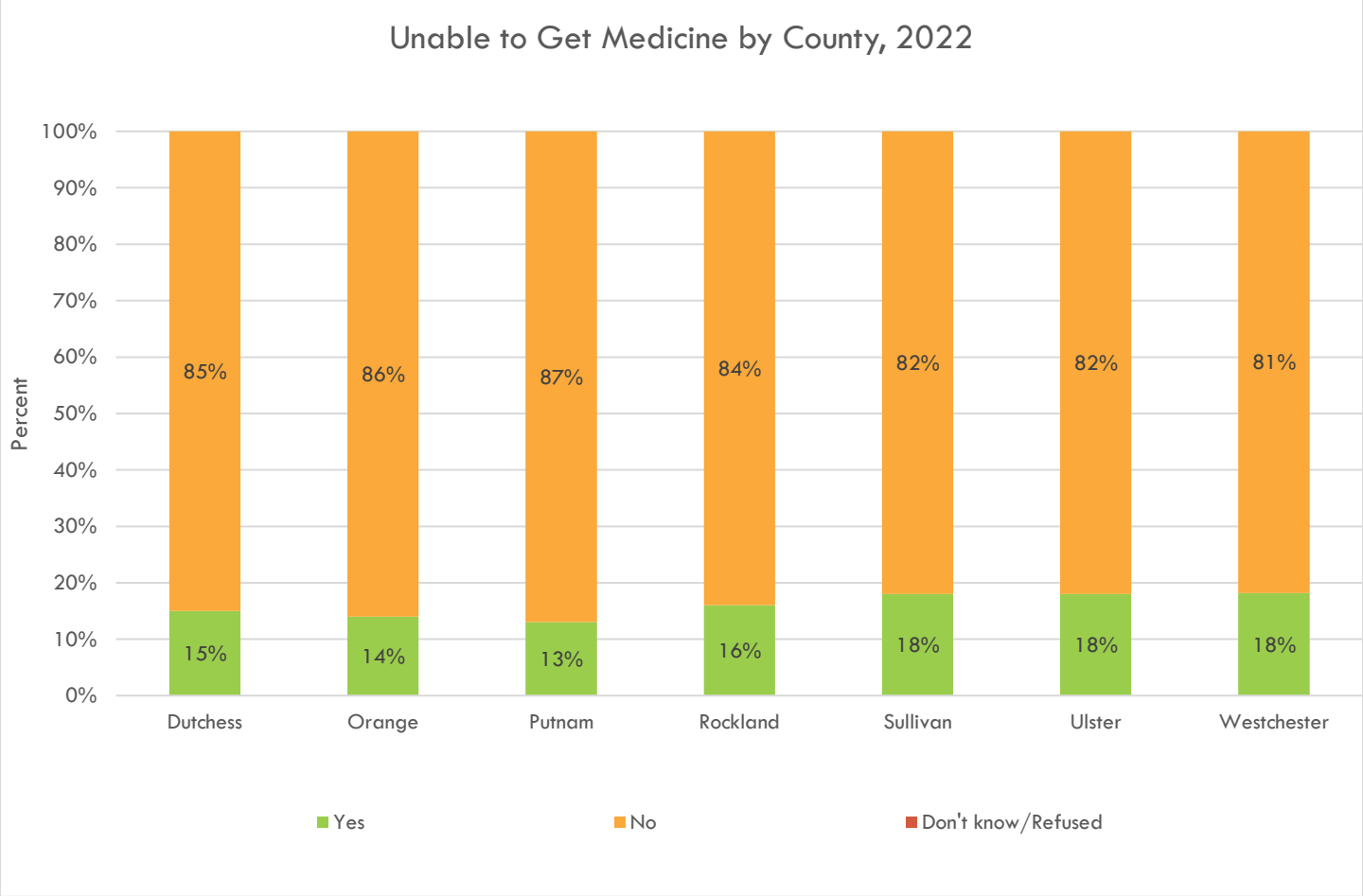


Figure 84



Survey Question 24: *In the past 12 months, have you or any other member of your household been unable to get any of the following when it was really needed? Please answer yes or no for each item.* ***Any healthcare, including dental or vision***

Figure 85

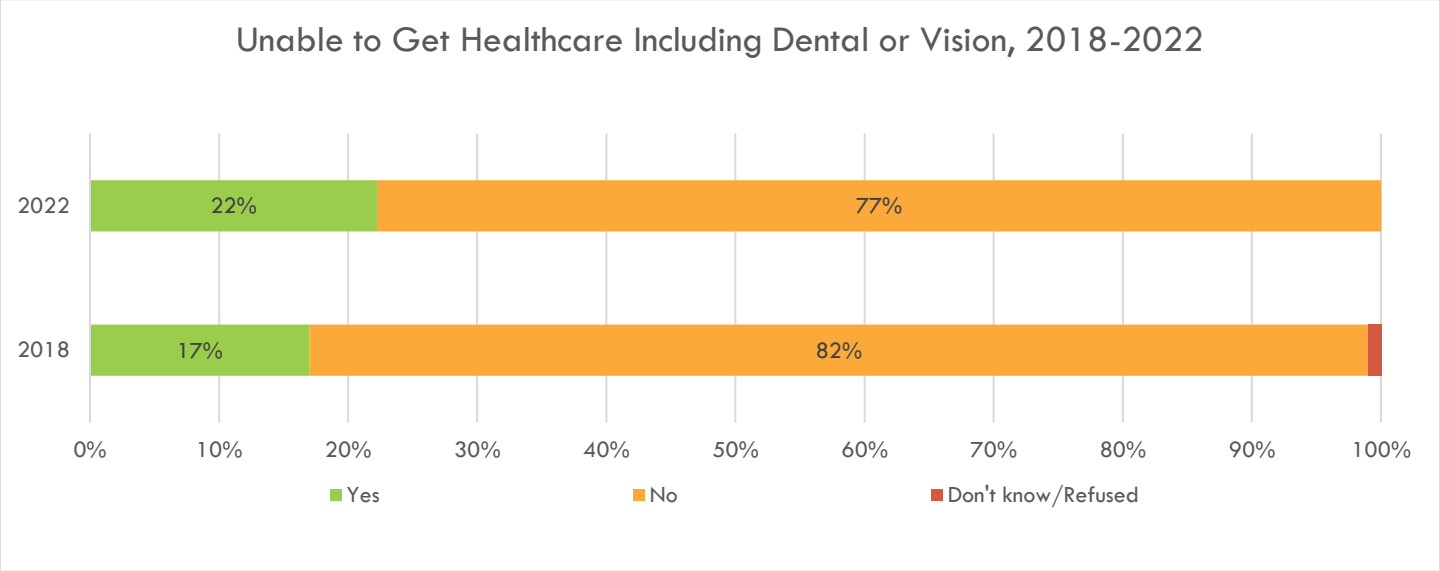
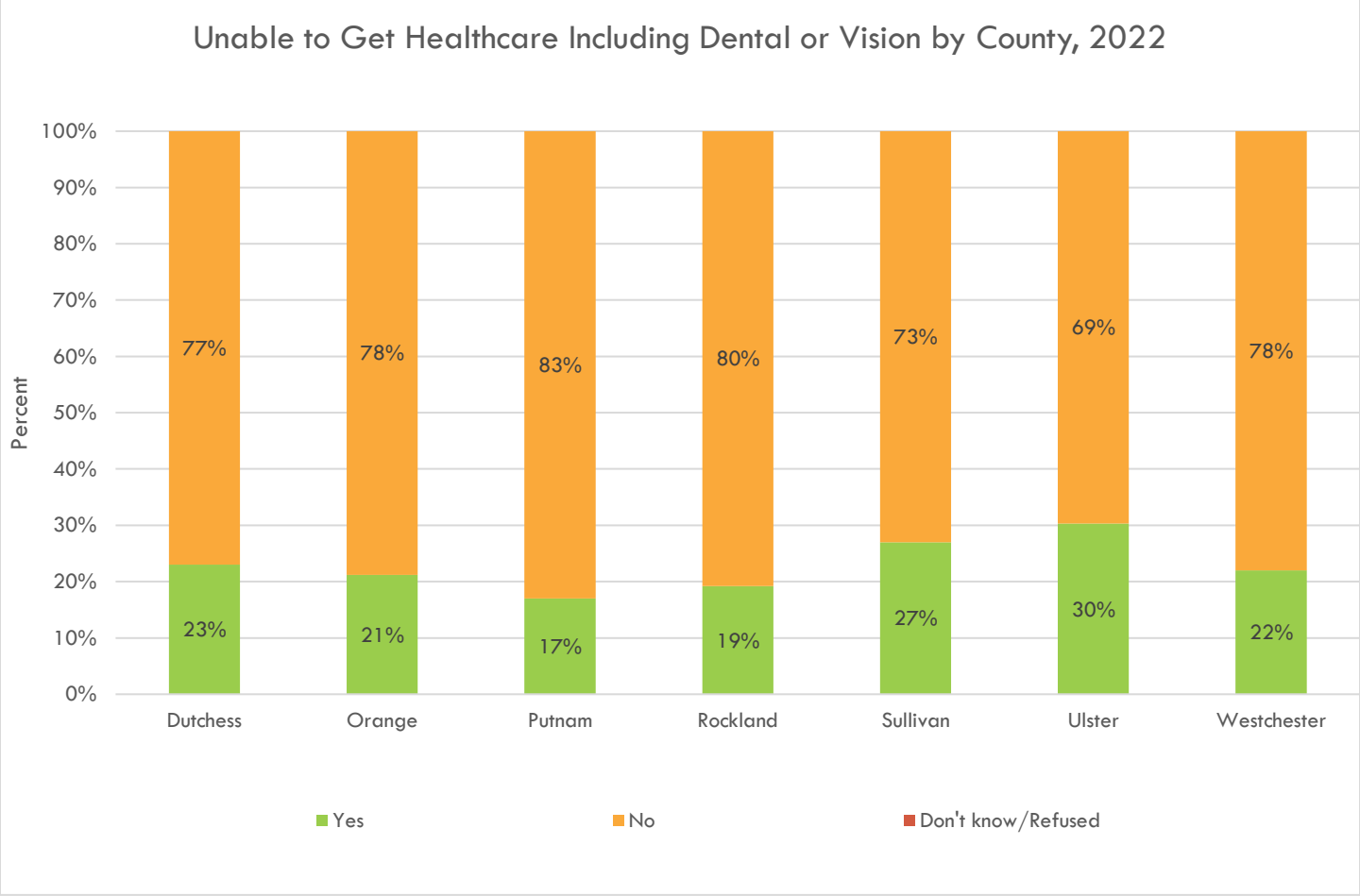


Figure 86



Survey Question 25: *In the past 12 months, have you or any other member of your household been unable to get any of the following when it was really needed? Please answer yes or no for each item.* ***Phone***

Figure 87

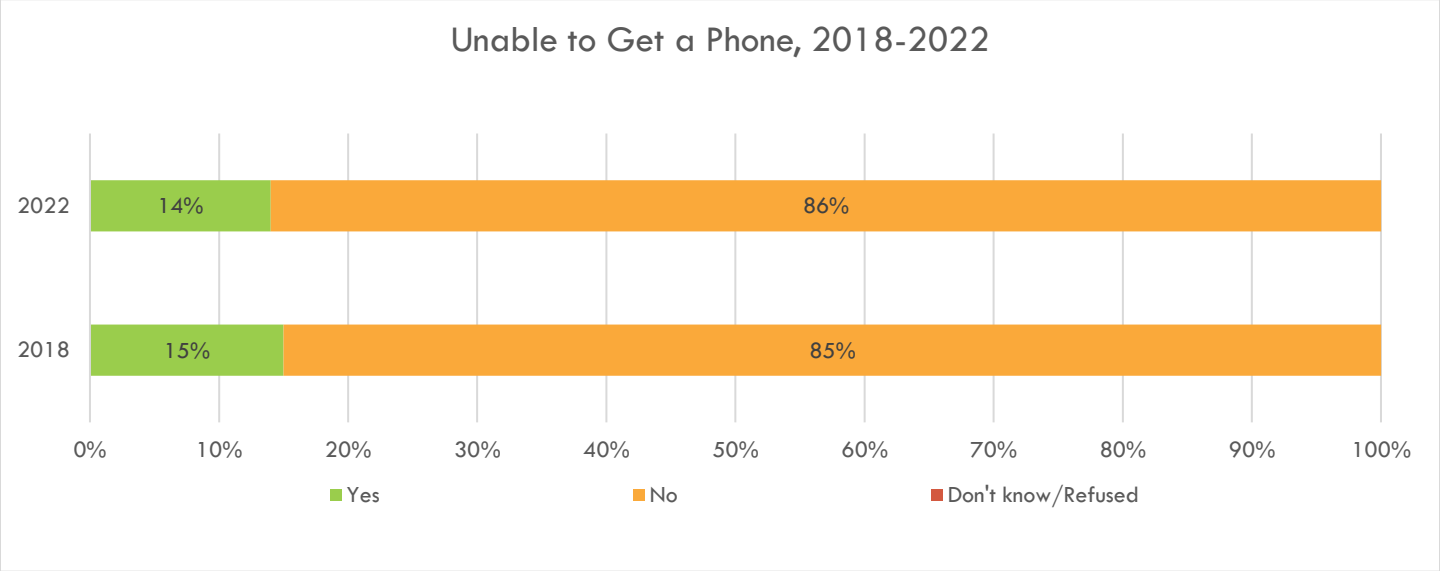
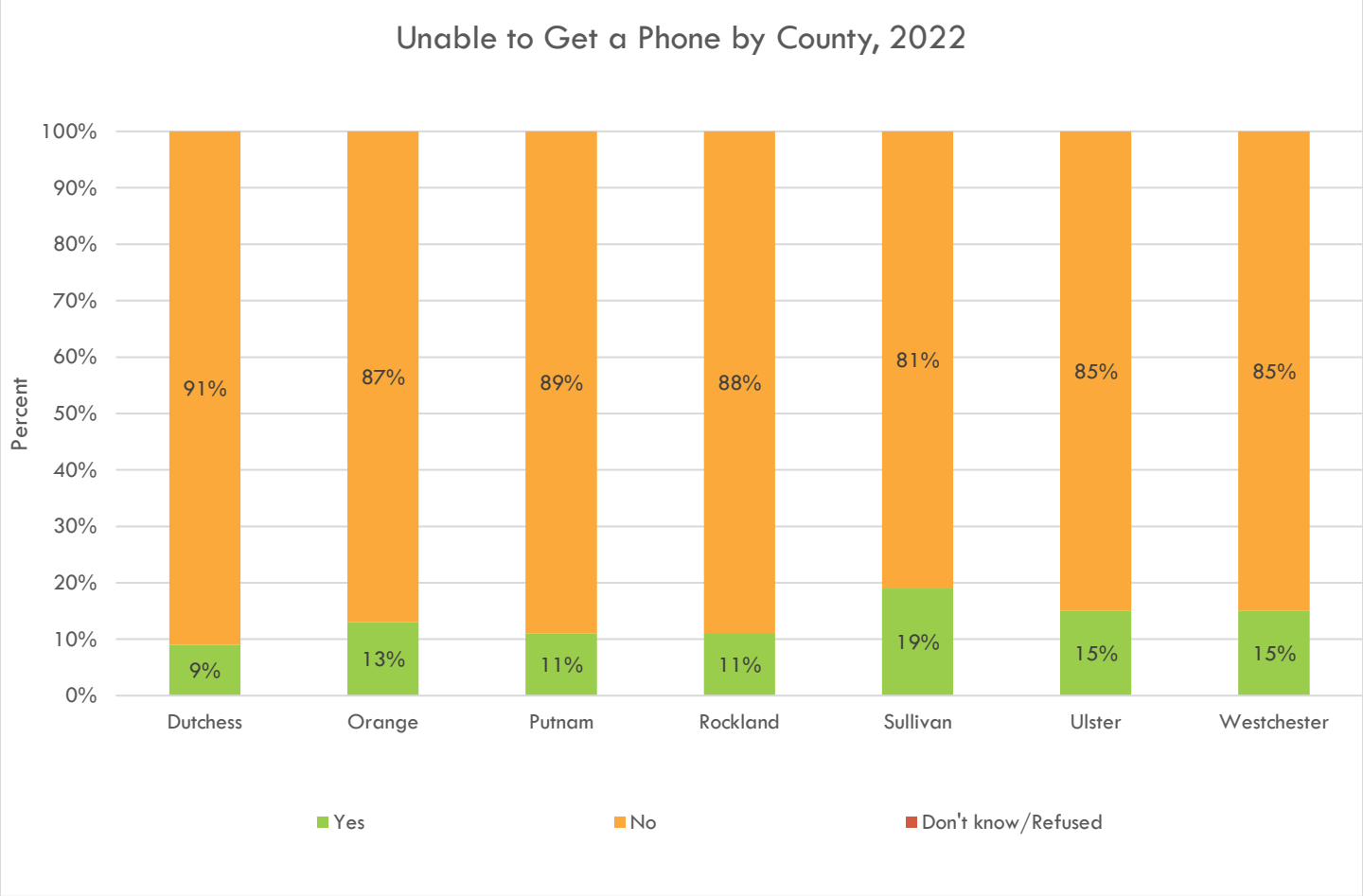


Figure 88



Survey Question 26: *In the past 12 months, have you or any other member of your household been unable to get any of the following when it was really needed? Please answer yes or no for each item.* ***Transportation***

Figure 89

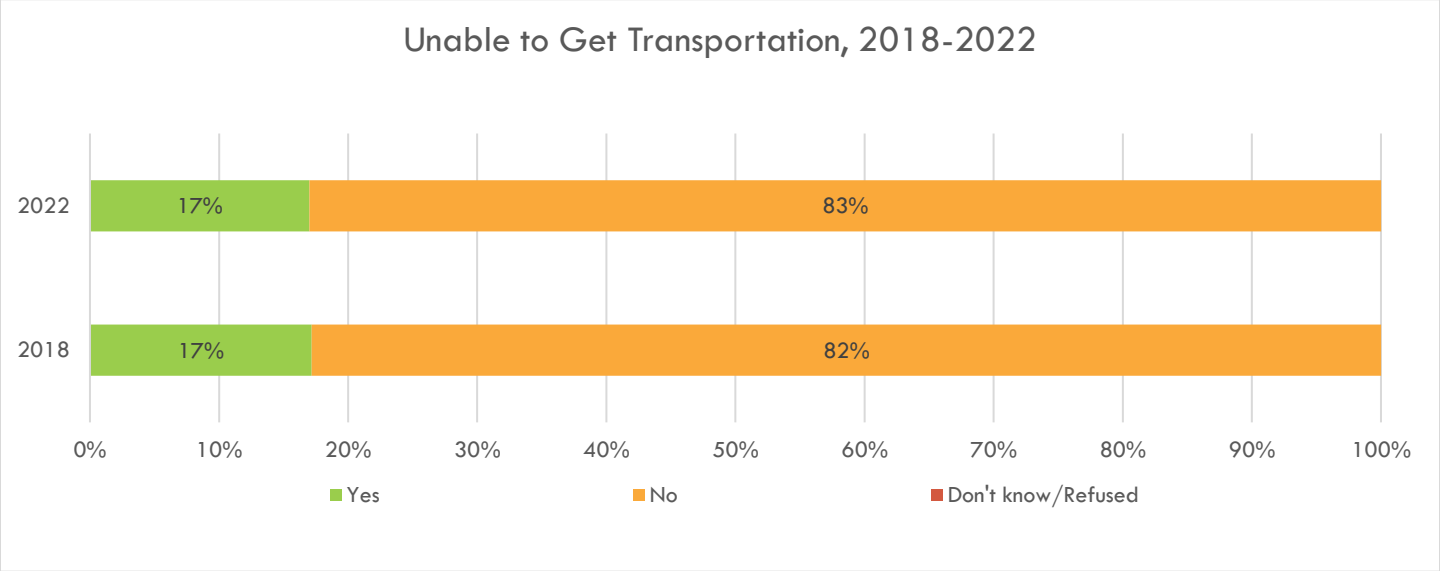
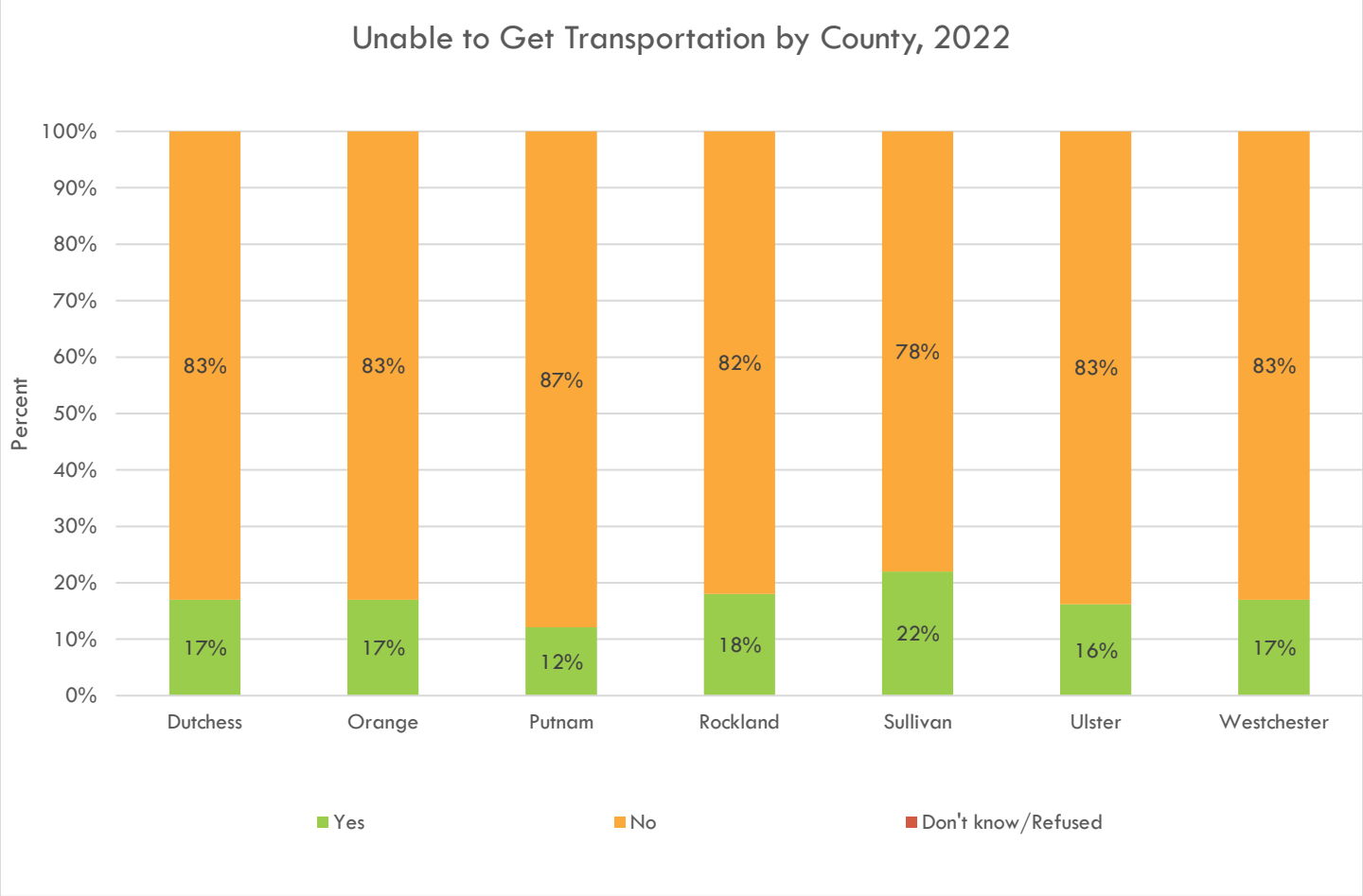


Figure 90



Survey Question 27: *In the past 12 months, have you or any other member of your household been unable to get any of the following when it was really needed? Please answer yes or no for each item.* ***Housing***

Figure 91

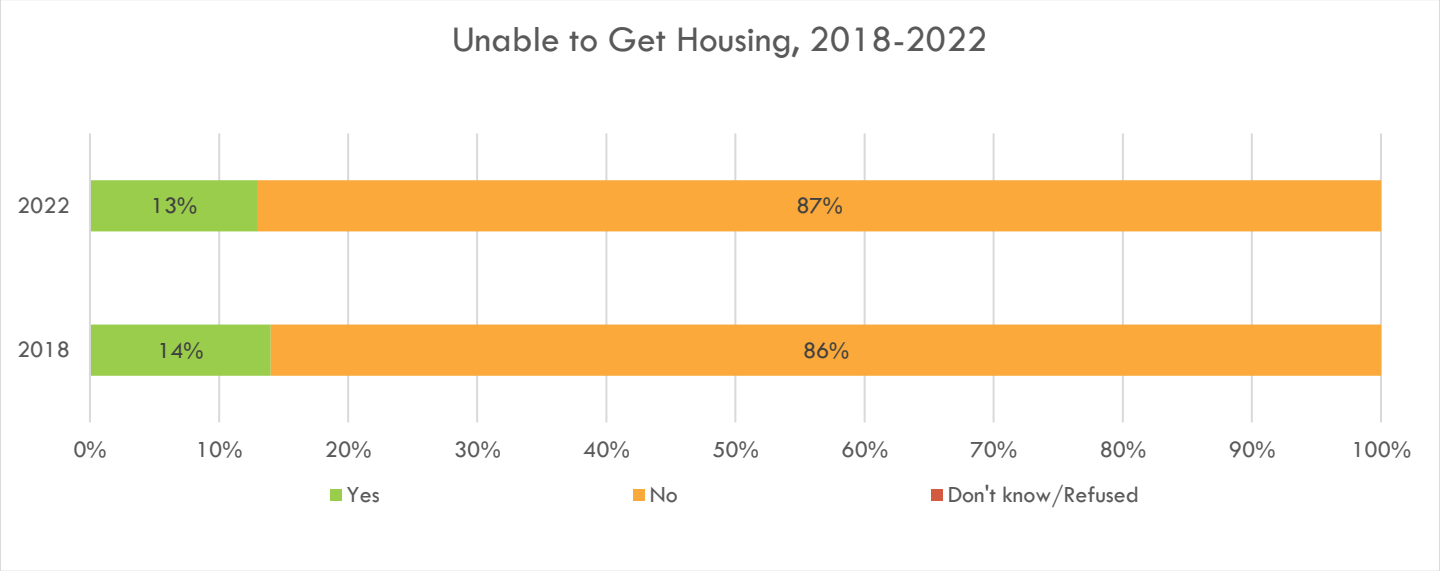
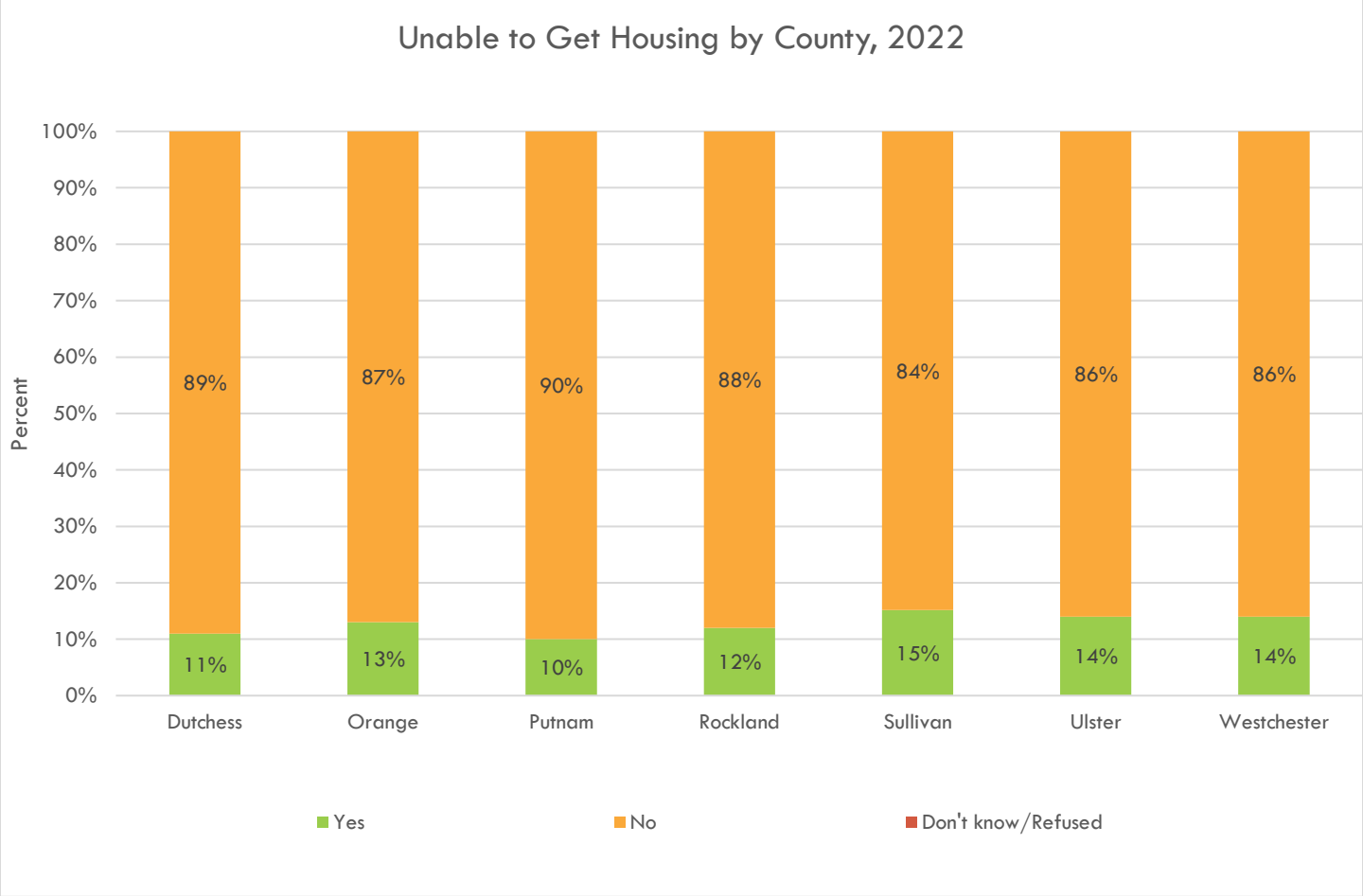


Figure 92



Survey Question 28: *In the past 12 months, have you or any other member of your household been unable to get any of the following when it was really needed? Please answer yes or no for each item.* ***Childcare***

Figure 93

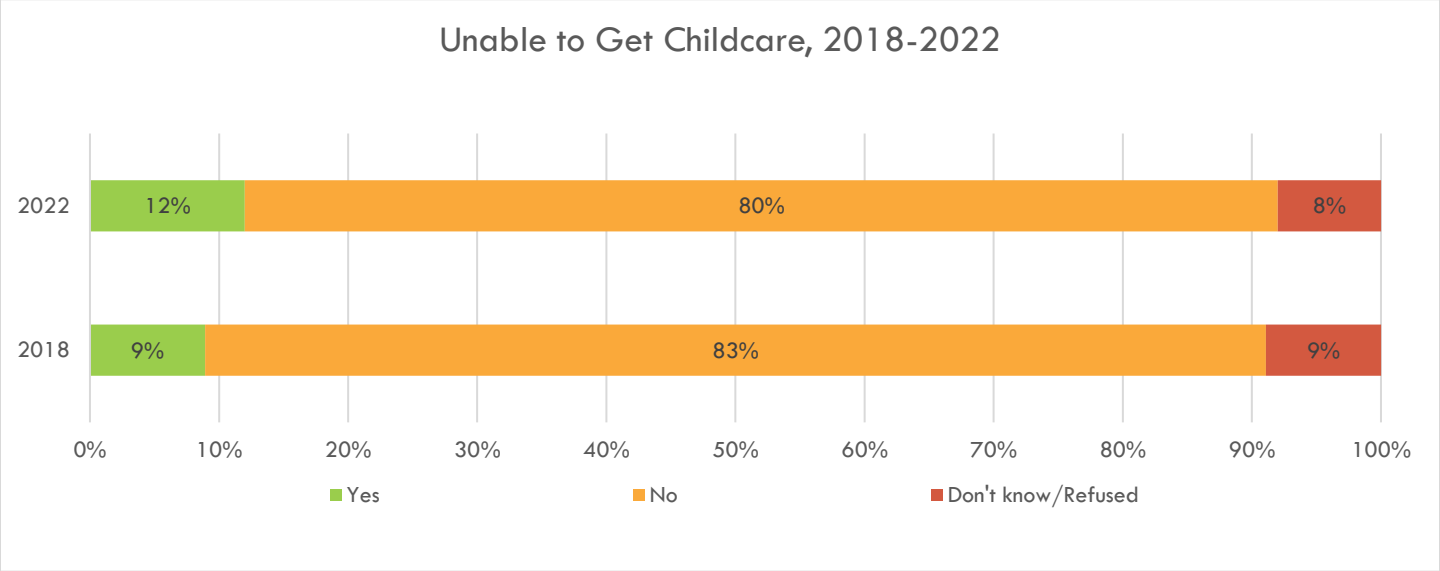
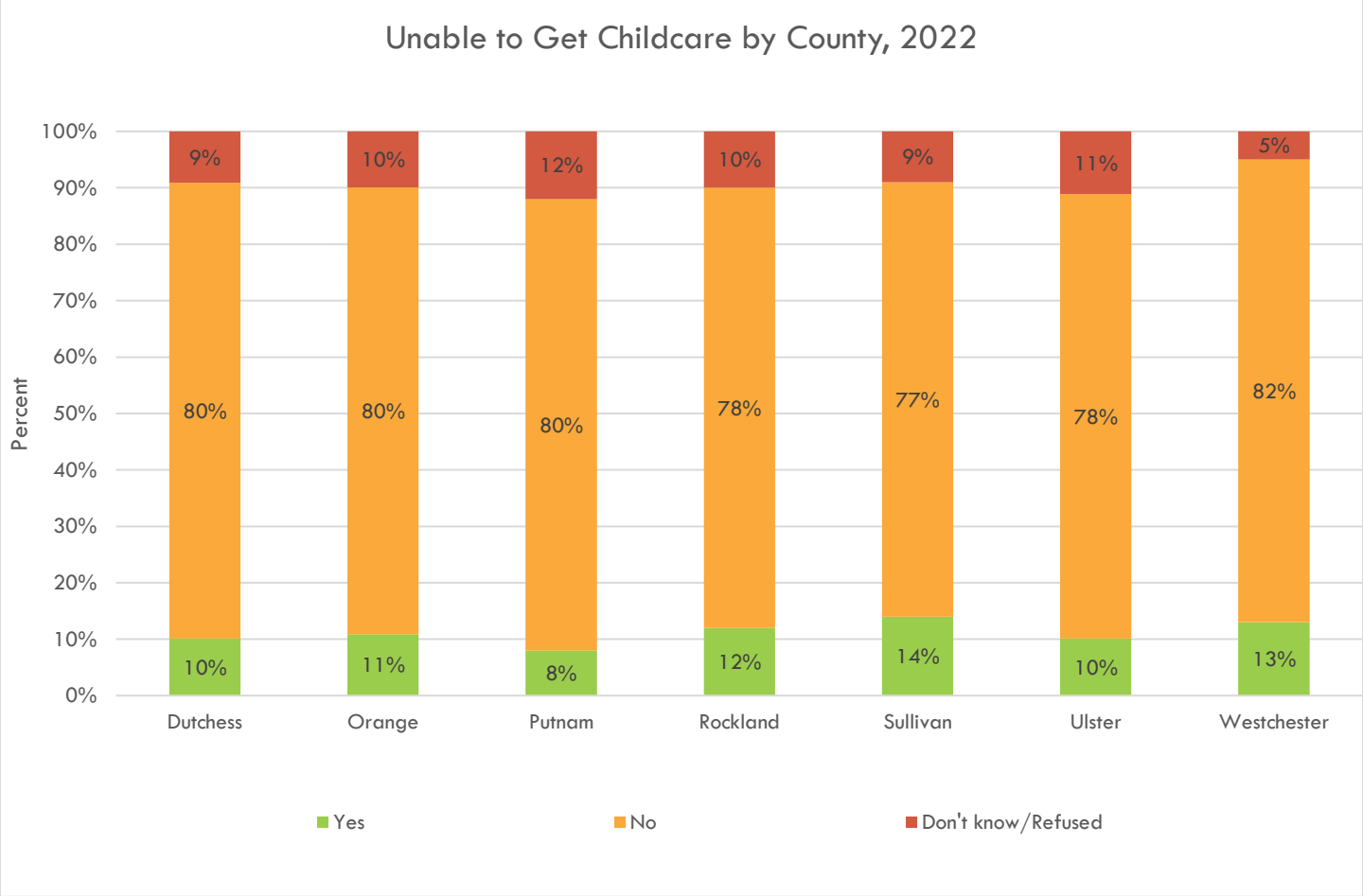


Figure 94



Survey Question 29: *In the past 12 months, have you or any other member of your household been unable to get any of the following when it was really needed? Please answer yes or no for each item.* ***Access to the internet***

Figure 95

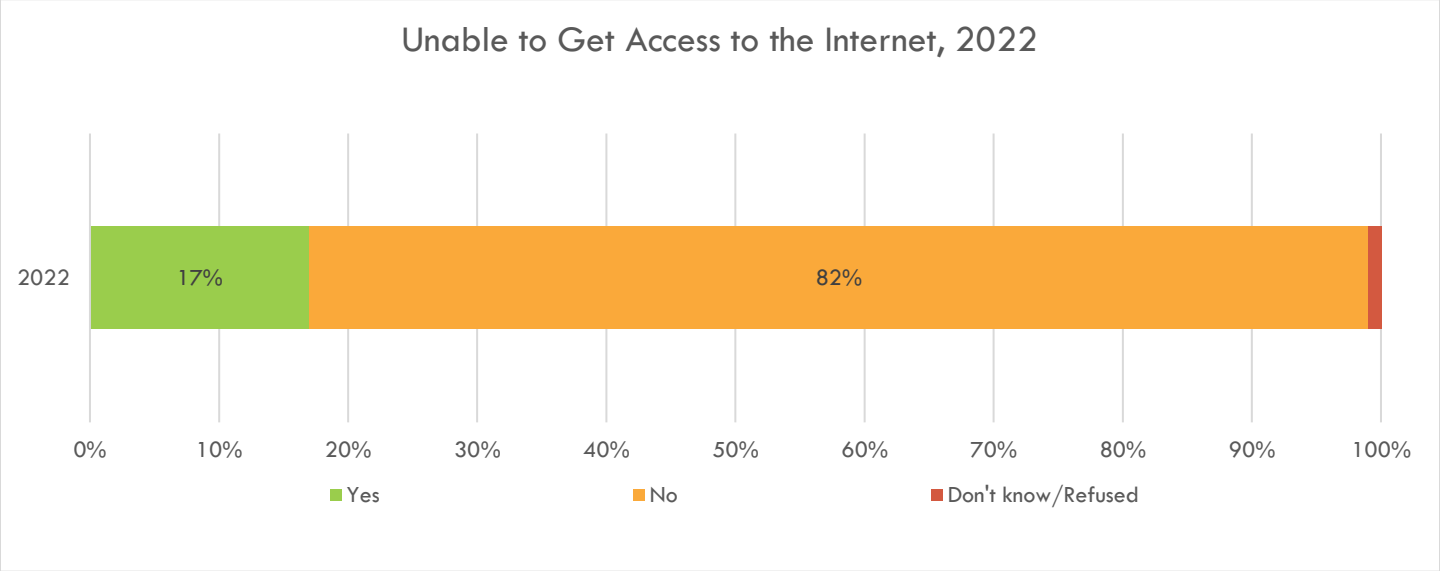
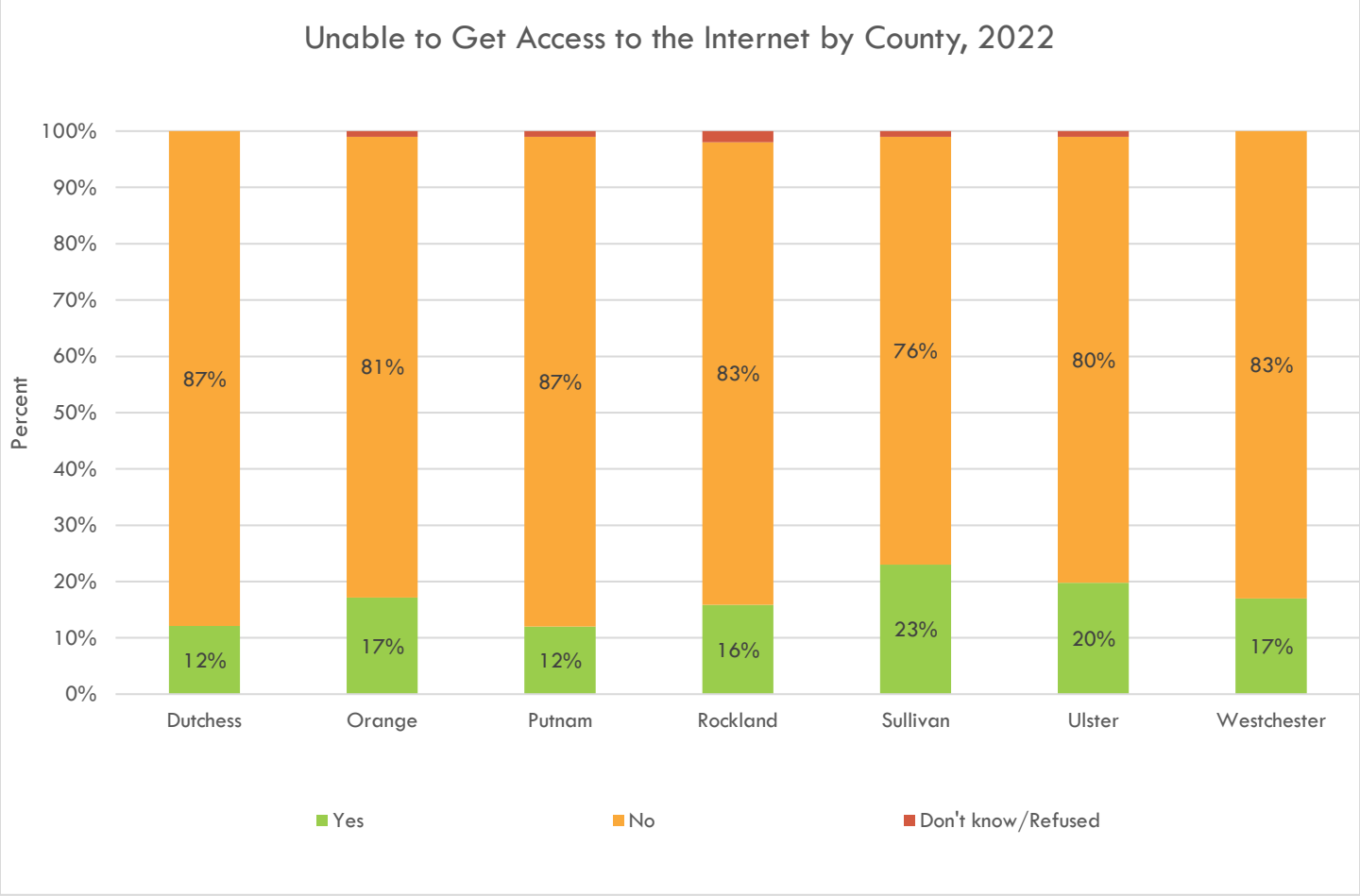


Figure 96



HEALTHCARE VISITATIONS

Survey Question 30: *Have you visited a primary care physician for a routine physical or checkup within the last 12 months?*

Figure 97

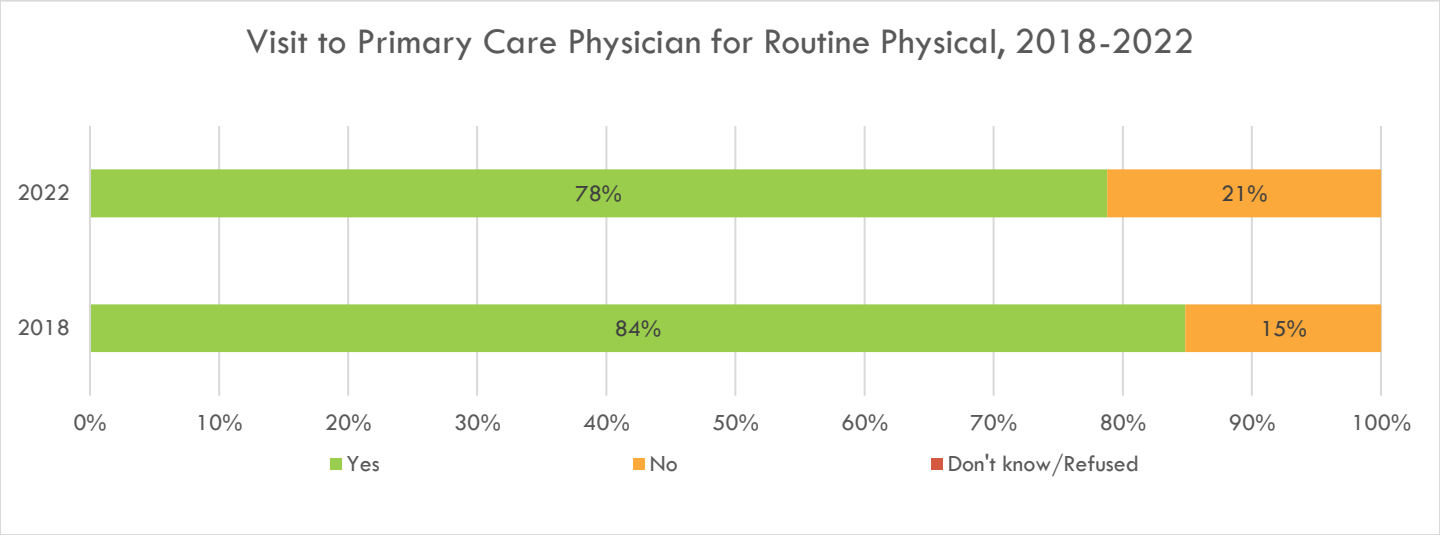
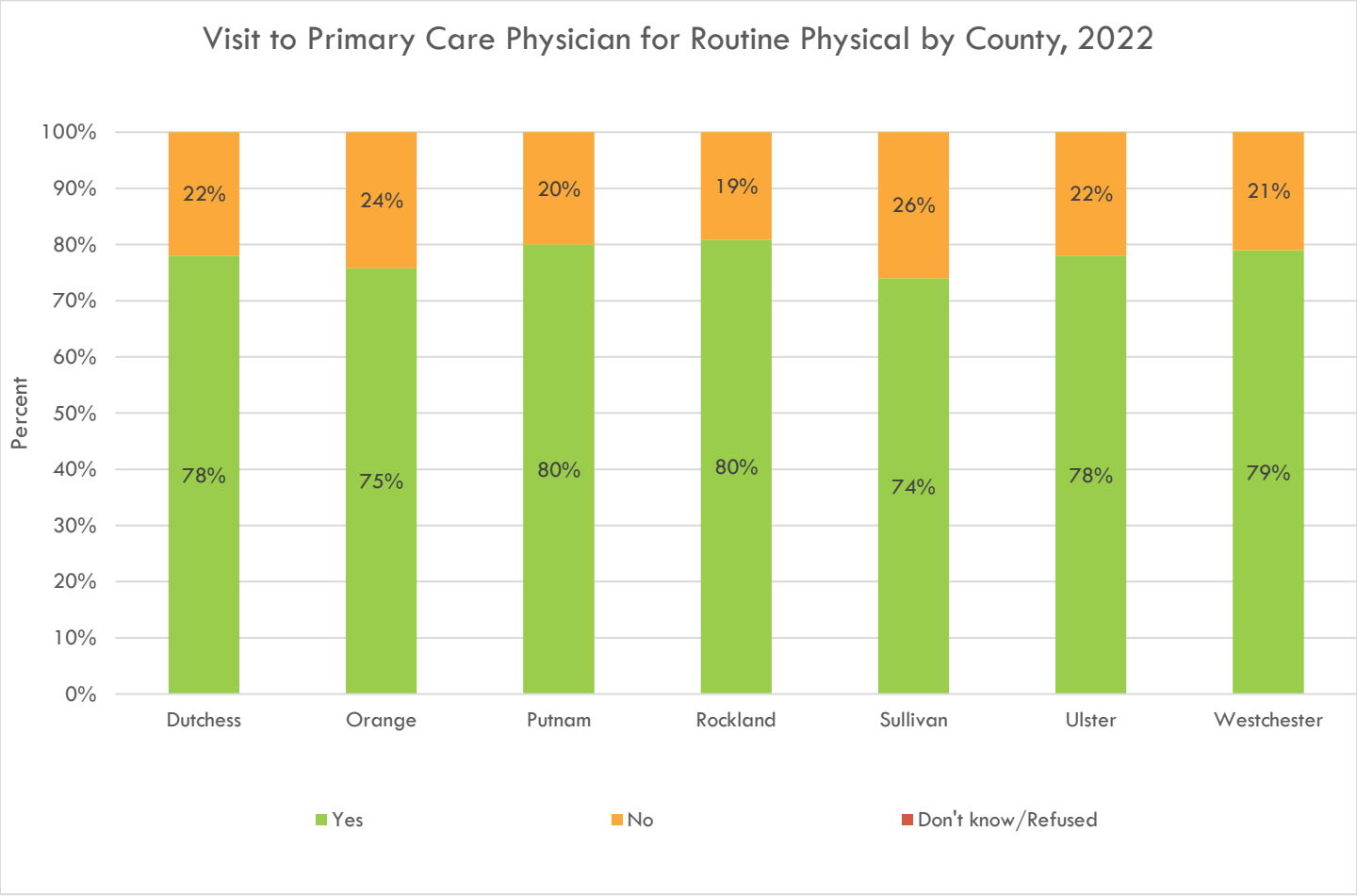
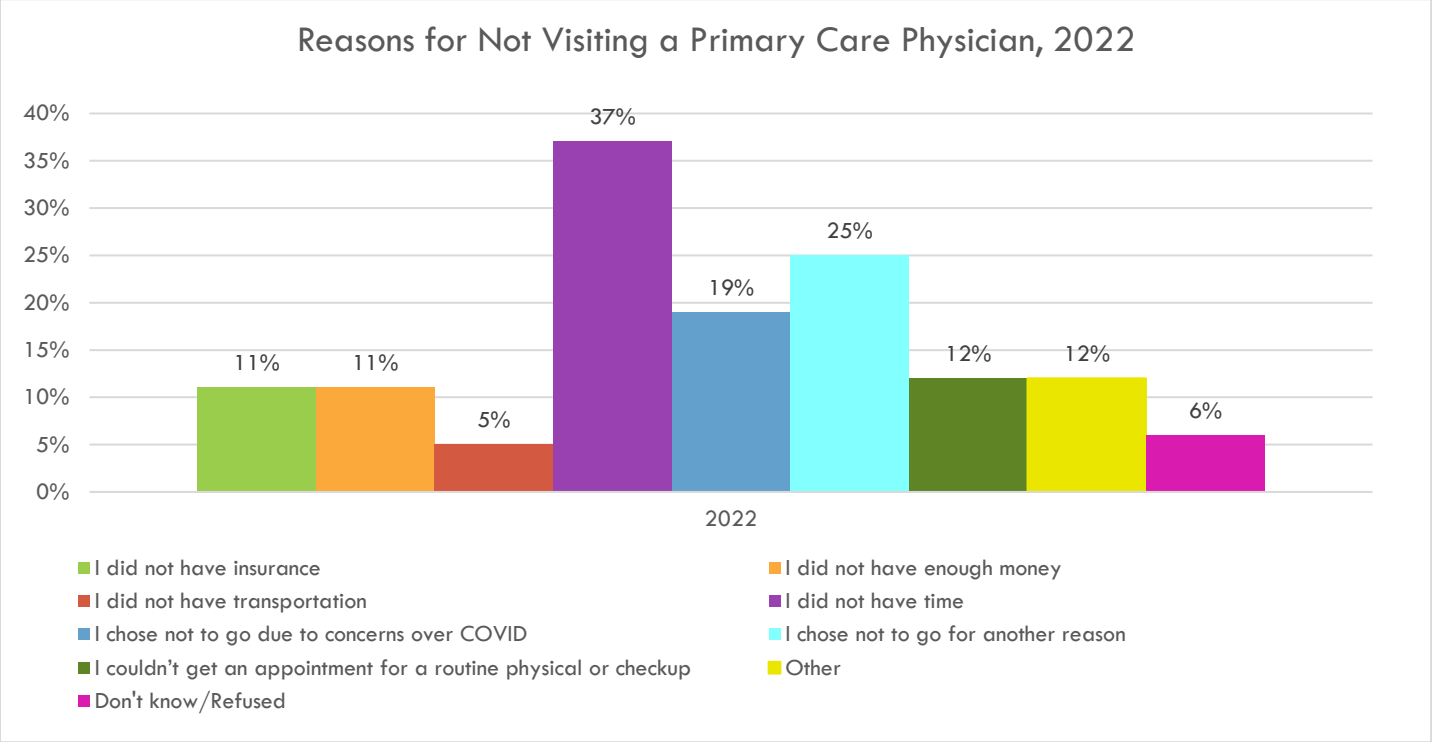


Figure 98



Survey Question 31: *(If did not visit primary care provider in the past year) In the last 12 months, were any of the following reasons that you did not visit a primary care provider for a routine physical or checkup?*

Figure 99



Reasons for Not Visiting a Primary Care Physician by County, 2022

	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
I did not have insurance	10%	20%	10%	6%	14%	17%	12%
I did not have enough money	14%	12%	7%	4%	14%	18%	9%
I did not have transportation	6%	5%	3%	2%	4%	2%	5%
I did not have time	34%	29%	33%	34%	29%	35%	35%
I chose not to go due to concerns over COVID	20%	18%	17%	19%	20%	23%	22%
I chose not to go for another reason	34%	27%	30%	33%	28%	24%	27%
I couldn't get an appointment for a routine physical or checkup	20%	8%	18%	5%	11%	24%	14%
Other	12%	13%	16%	9%	14%	9%	13%
Don't know/Refused	4%	6%	6%	8%	3%	4%	4%

Survey Question 32: *Have you visited a dentist for a routine check-up or cleaning within the last 12 months?*

Figure 100

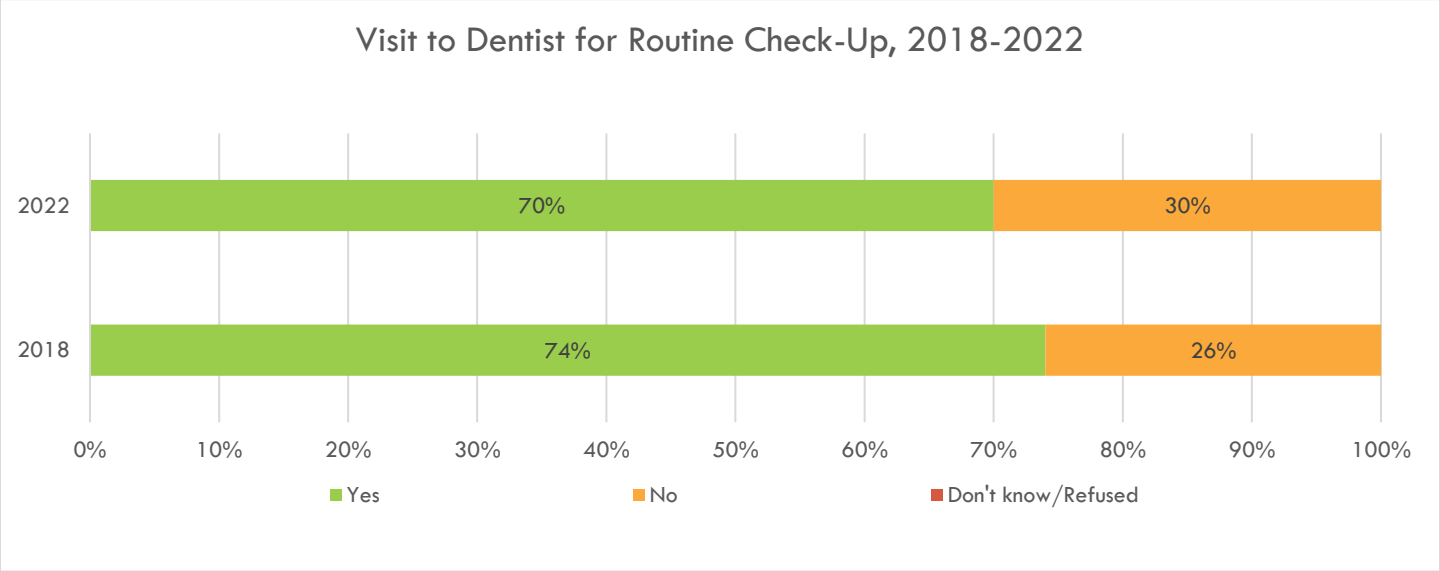
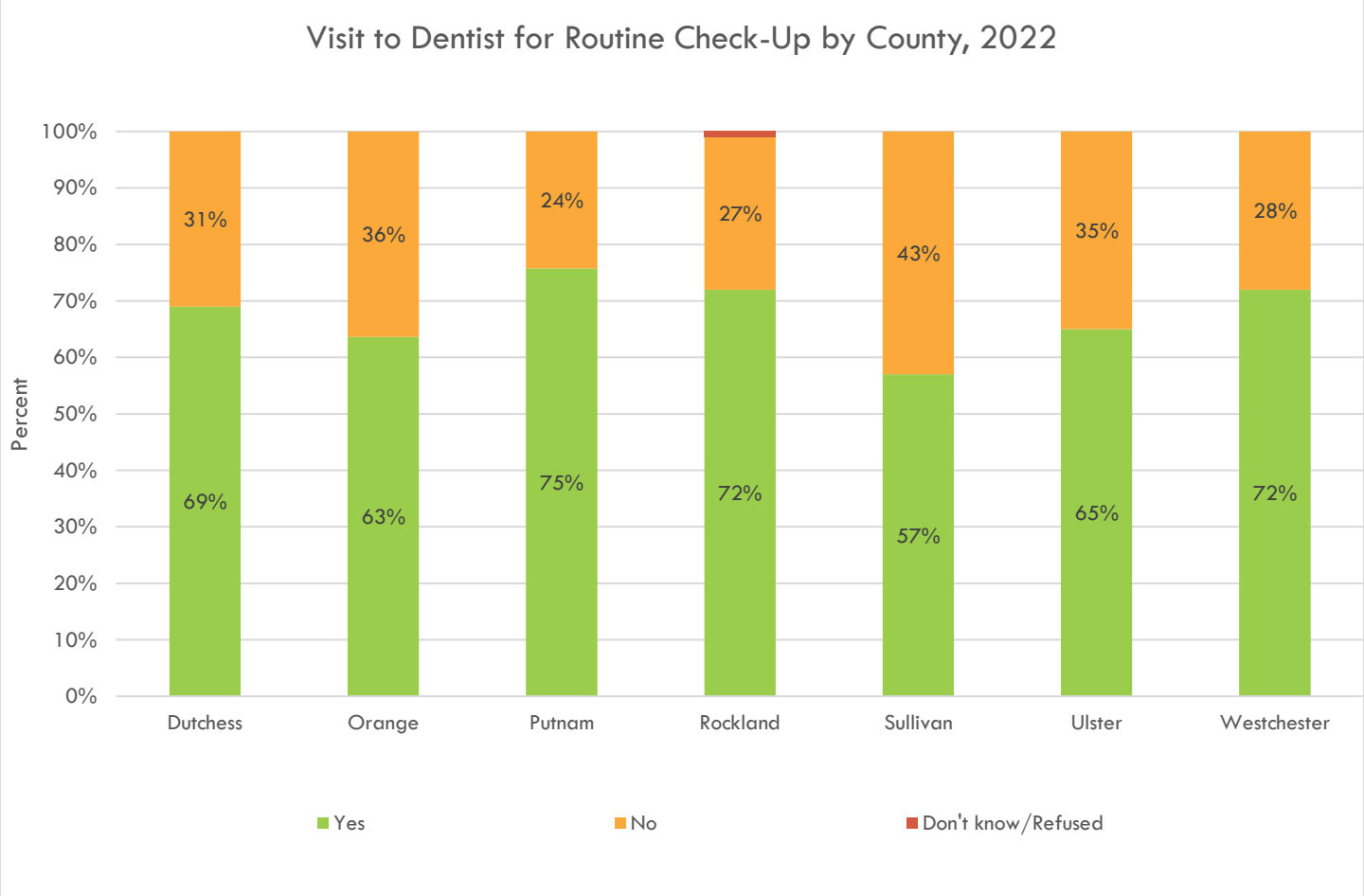
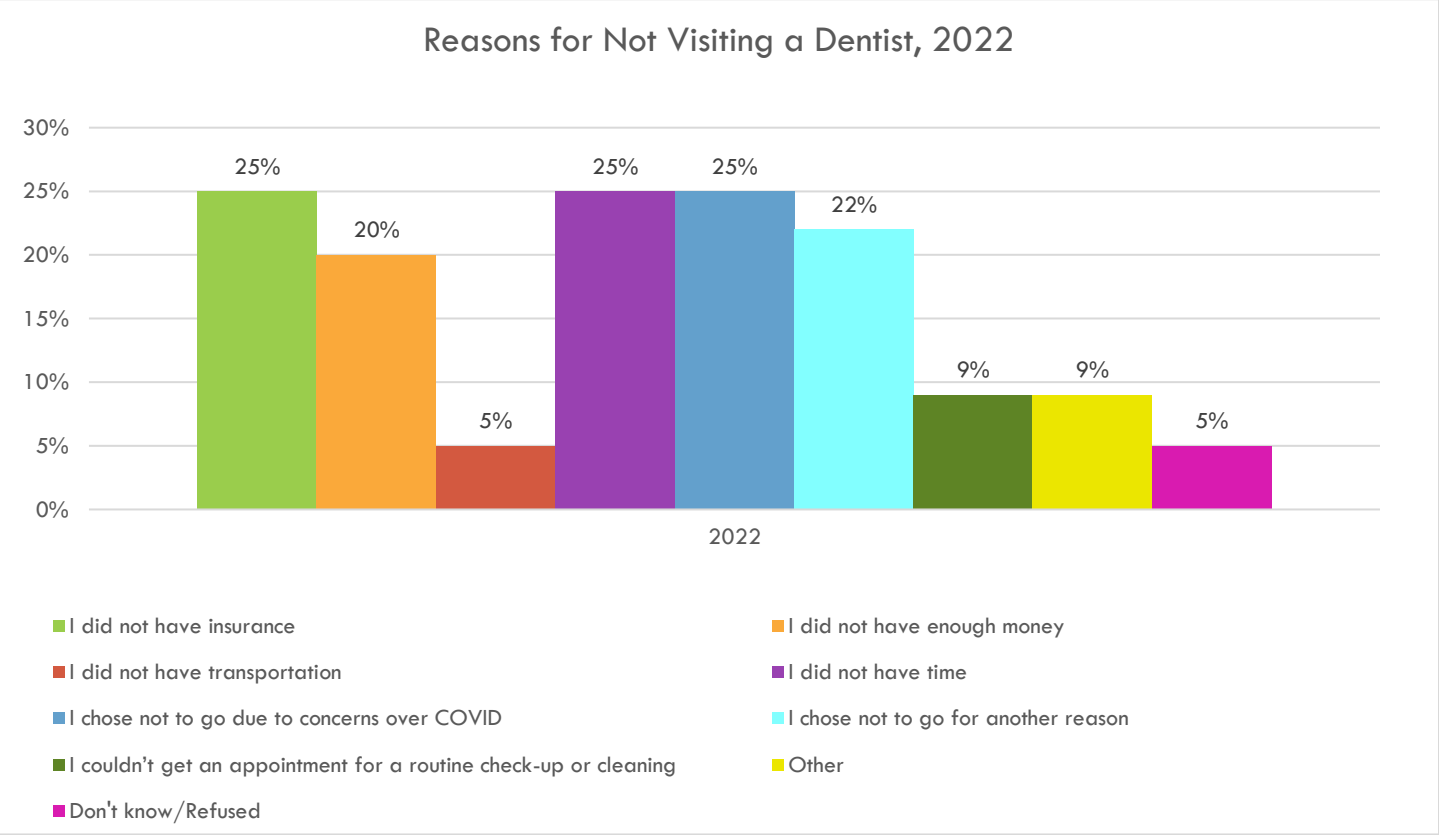


Figure 101



Survey Question 33: *(If did not visit dentist in the past year) In the last 12 months, were any of the following reasons that you did not visit a dentist for a routine check-up or cleaning?*

Figure 102



Reasons for Not Visiting a Dentist by County, 2022

	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
I did not have insurance	23%	29%	31%	18%	26%	19%	28%
I did not have enough money	23%	18%	21%	17%	23%	22%	22%
I did not have transportation	6%	4%	3%	2%	4%	7%	6%
I did not have time	26%	19%	24%	27%	24%	21%	27%
I chose not to go due to concerns over COVID	23%	23%	16%	27%	22%	27%	27%
I chose not to go for another reason	25%	22%	28%	28%	31%	23%	23%
I couldn't get an appointment for a routine check-up or cleaning	10%	8%	5%	6%	13%	15%	7%
Other	13%	11%	13%	7%	15%	9%	5%
Don't know/Refused	3%	3%	3%	6%	4%	6%	4%

Survey Question 34: *Sometimes people visit the emergency room for medical conditions or illnesses that are not emergencies; that is, for health-related issues that may be treatable in a doctor's office. Have you visited an emergency room for a medical issue that was not an emergency in the last 12 months?*

Figure 103

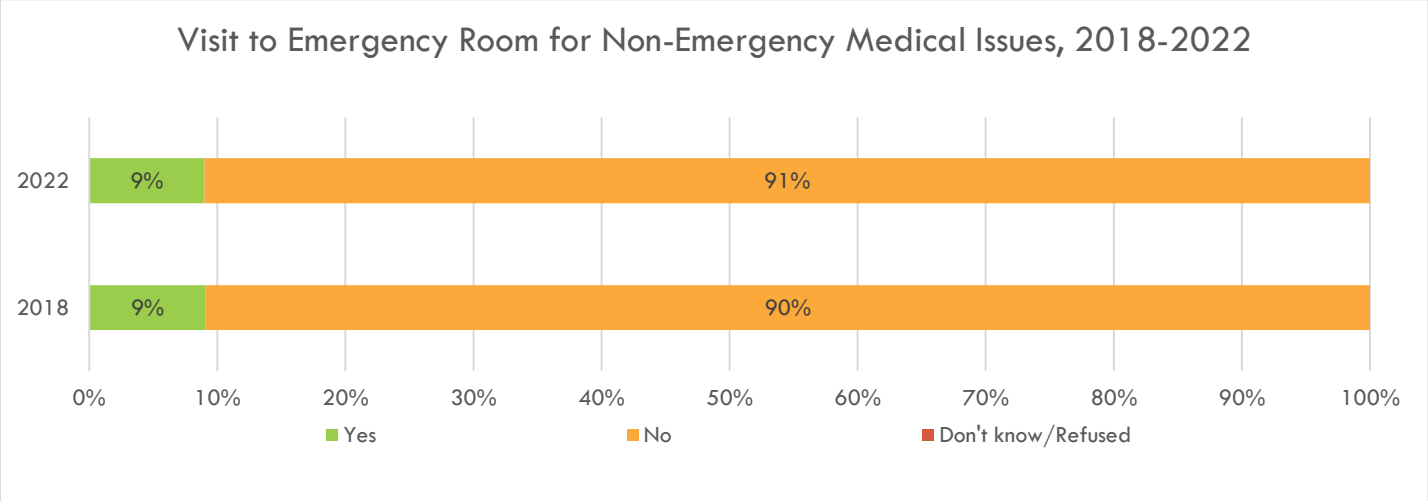
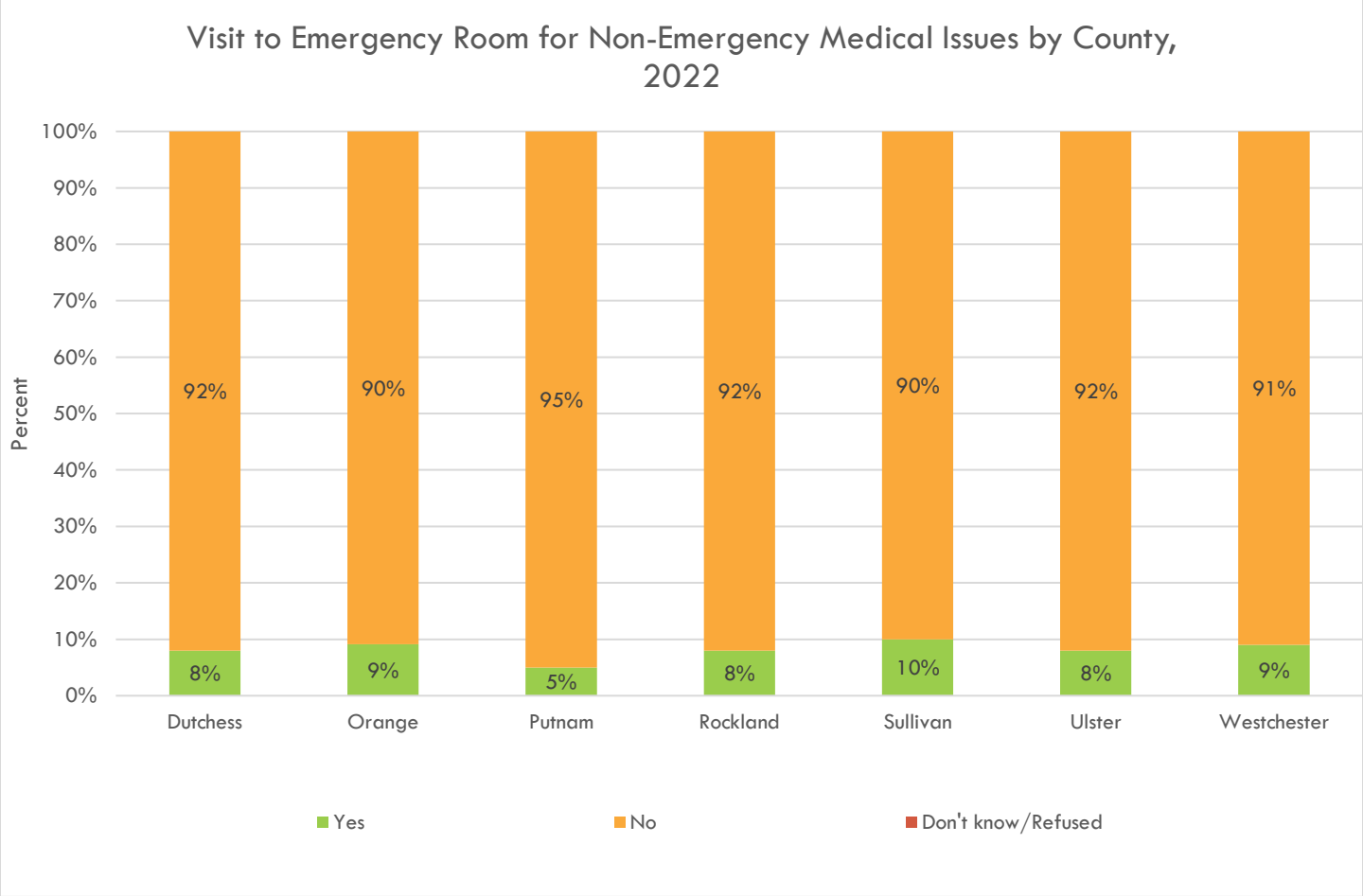
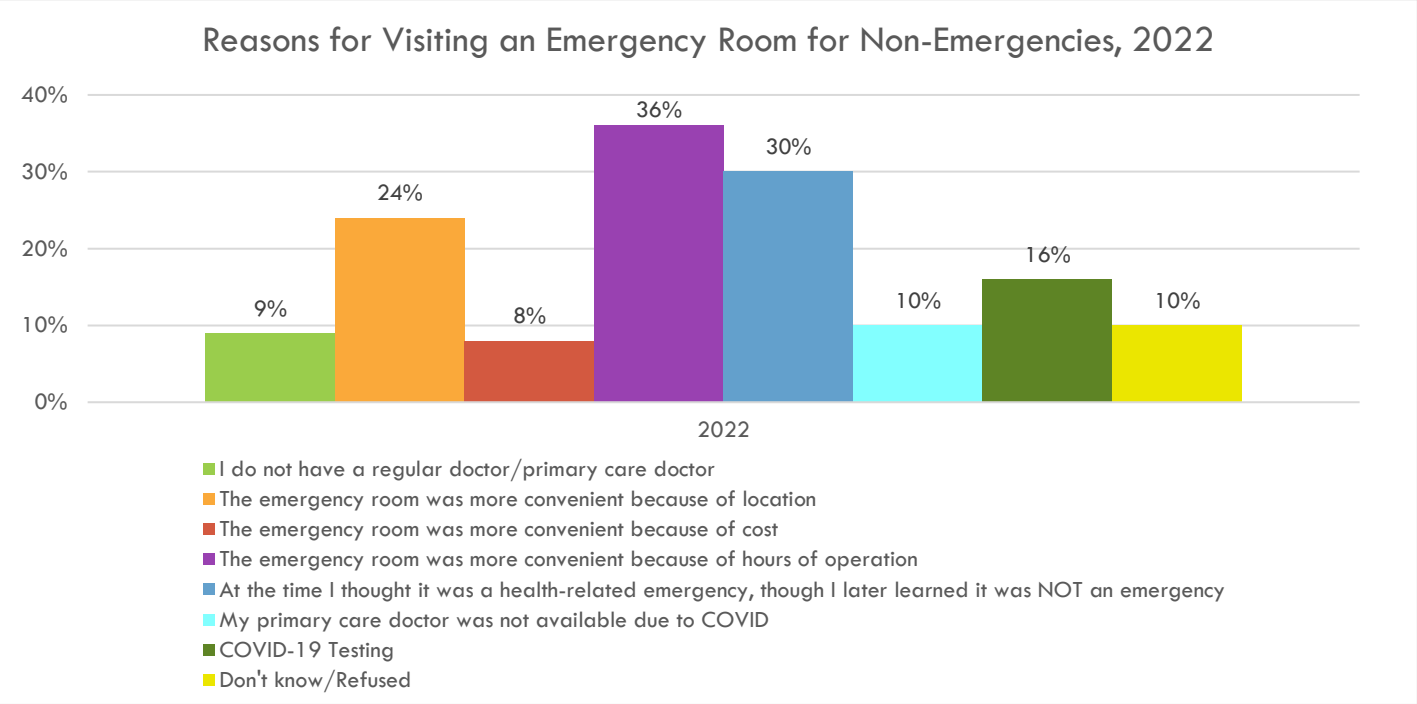


Figure 104



Survey Question 35: *(If visited Emergency Room for non-emergency in the past year) In the last 12 months, for which of the following reasons did you visit the emergency room for a non-health emergency rather than a doctor's office?*

Figure 105

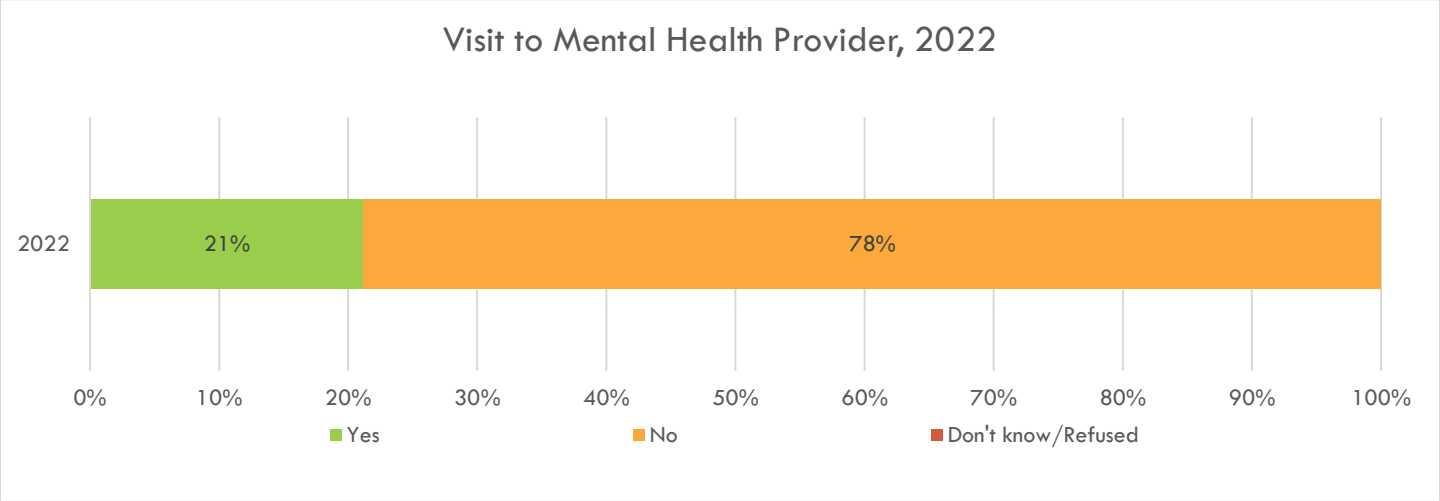


Reasons for Visiting an Emergency Room for Non-Emergencies by County, 2022

	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
I do not have a regular doctor/primary care doctor	13%	25%	2%	11%	10%	7%	7%
The emergency room was more convenient because of location	22%	19%	19%	14%	28%	23%	31%
The emergency room was more convenient because of cost	8%	9%	4%	8%	23%	7%	6%
The emergency room was more convenient because of hours of operation	36%	40%	32%	37%	48%	47%	28%
At the time I thought it was a health-related emergency, though I later learned it was NOT an emergency	39%	27%	50%	40%	41%	19%	33%
My primary care doctor was not available due to COVID	7%	2%	6%	21%	12%	5%	11%
COVID-19 Testing	4%	10%	11%	10%	41%	24%	19%
Don't know/Refused	18%	14%	16%	5%	7%	14%	8%

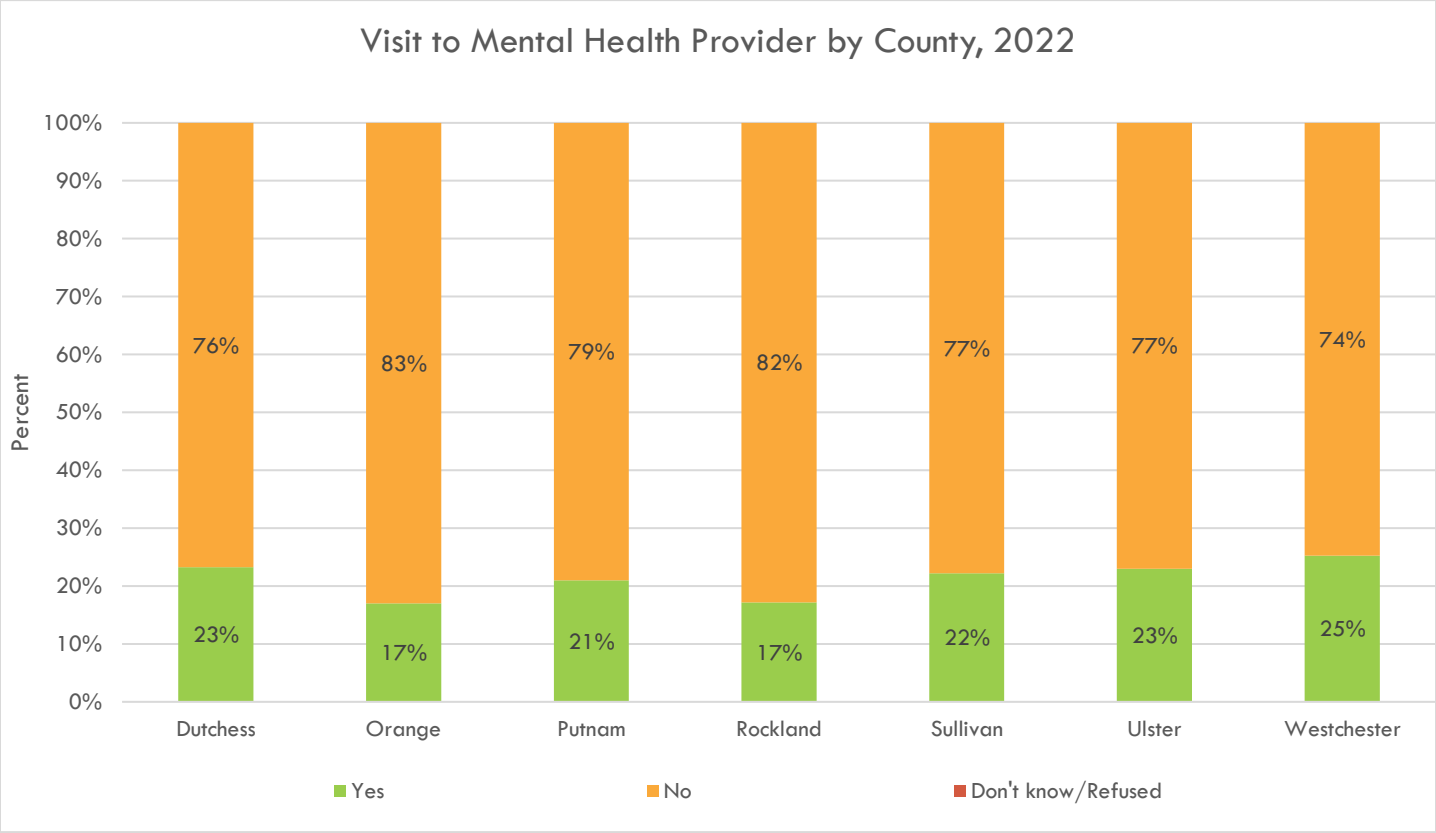
Survey Question 36: *Have you visited a mental health provider, such as a psychiatrist, psychologist, social worker, and/or therapist for 1-on-1 appointments or group-sessions (either in-person or online), etc. within the last 12 months?*

Figure 106



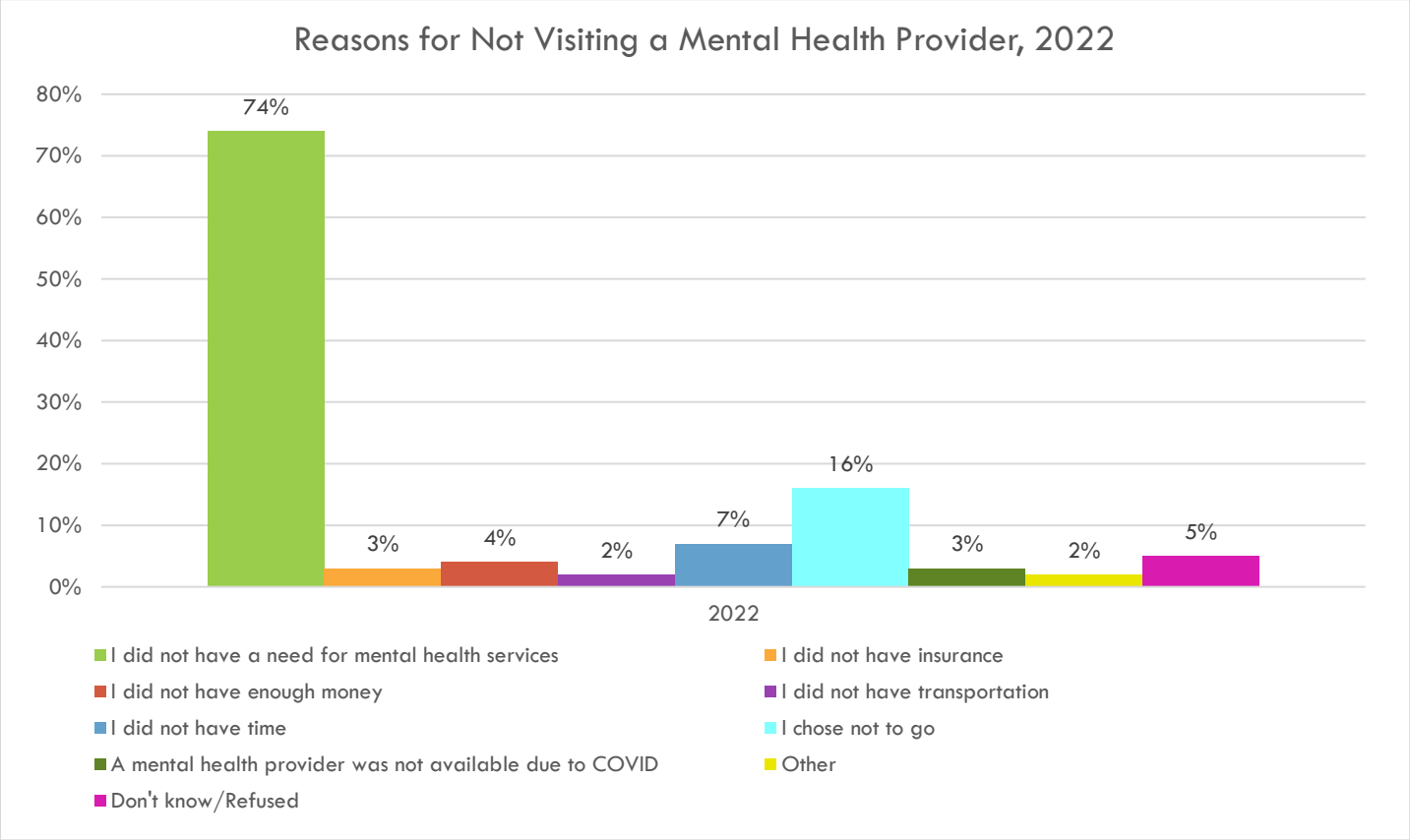
Note: The 2018 survey asked respondents that reported experiencing a mental health condition or substance/alcohol use disorder whether they had visited a mental health provider within the last 12 months. Since the 2022 survey asked the question of all respondents, 2018 data cannot be compared to 2022 data.

Figure 107



Survey Question 37: *(If did not visit mental health provider in the past year) In the last 12 months, were any of the following reasons that you did not visit a mental health provider?*

Figure 108



Reasons for Not Visiting a Mental Health Provider by County, 2022

	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
I did not have a need for mental health services	74%	74%	84%	80%	76%	75%	70%
I did not have insurance	2%	6%	2%	2%	3%	5%	3%
I did not have enough money	5%	5%	3%	3%	4%	6%	5%
I did not have transportation	2%	2%	0%	1%	2%	0%	2%
I did not have time	7%	7%	6%	7%	8%	6%	8%
I chose not to go	16%	18%	15%	18%	18%	14%	16%
A mental health provider was not available due to COVID	3%	3%	2%	3%	4%	4%	3%
Other	2%	1%	1%	1%	3%	4%	3%
Don't know/Refused	3%	4%	2%	3%	3%	3%	5%

Survey Question 38: *During COVID, have you had a tele-health appointment with any healthcare provider?*

Figure 109

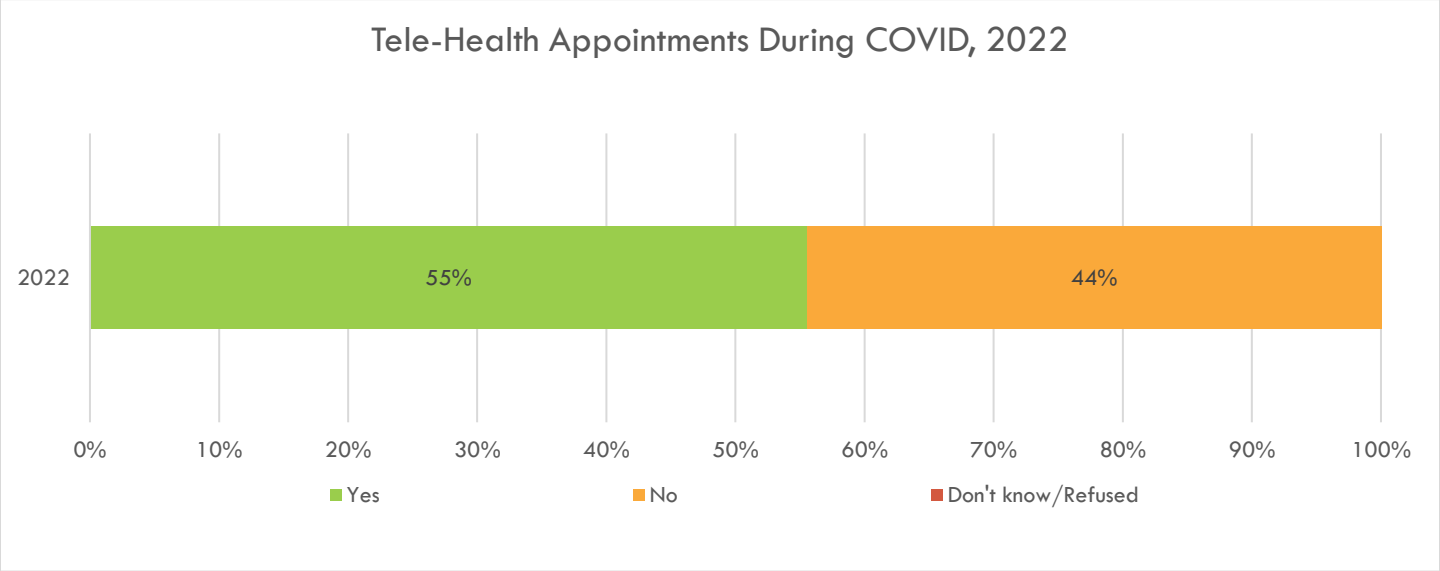
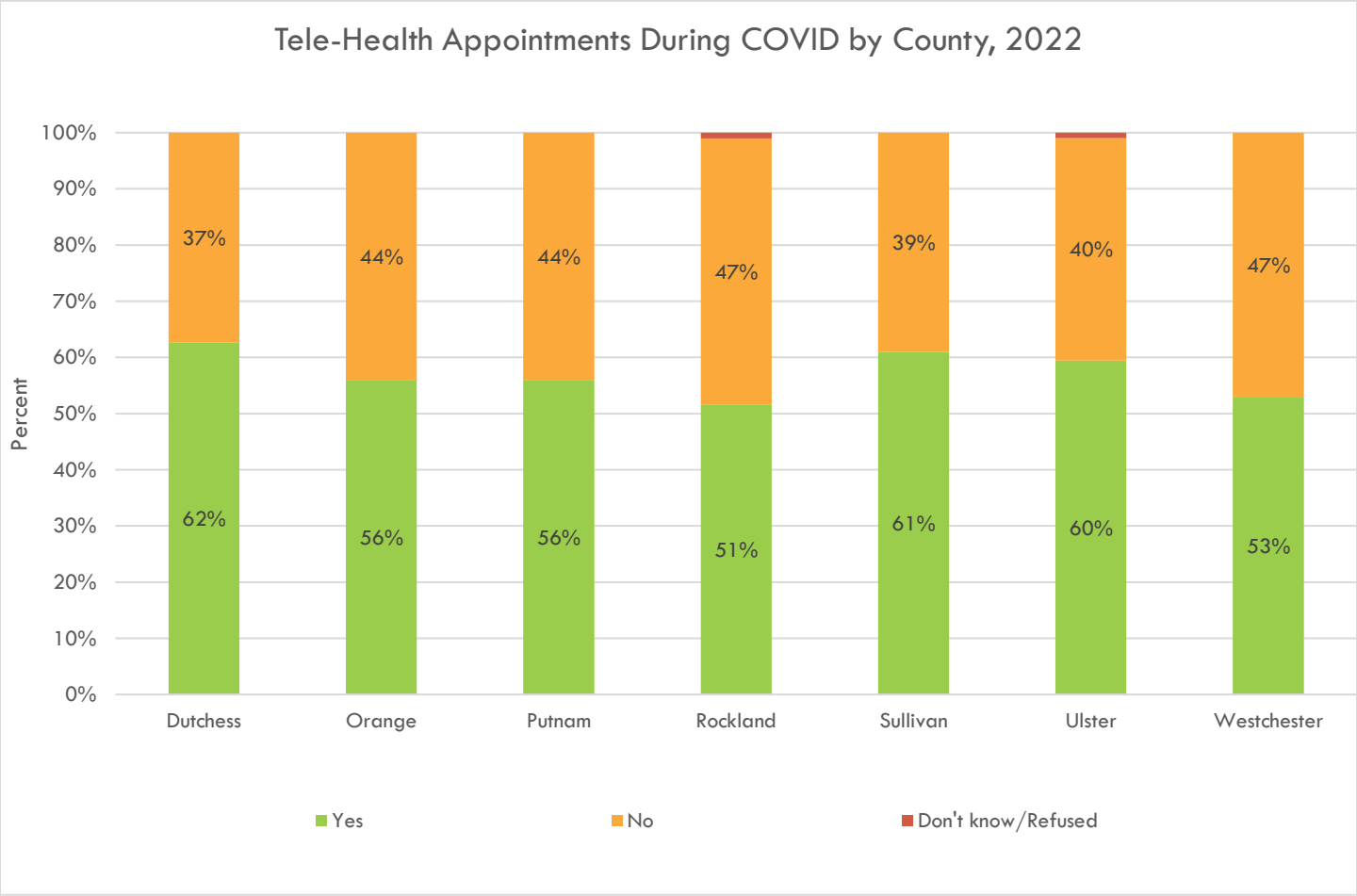
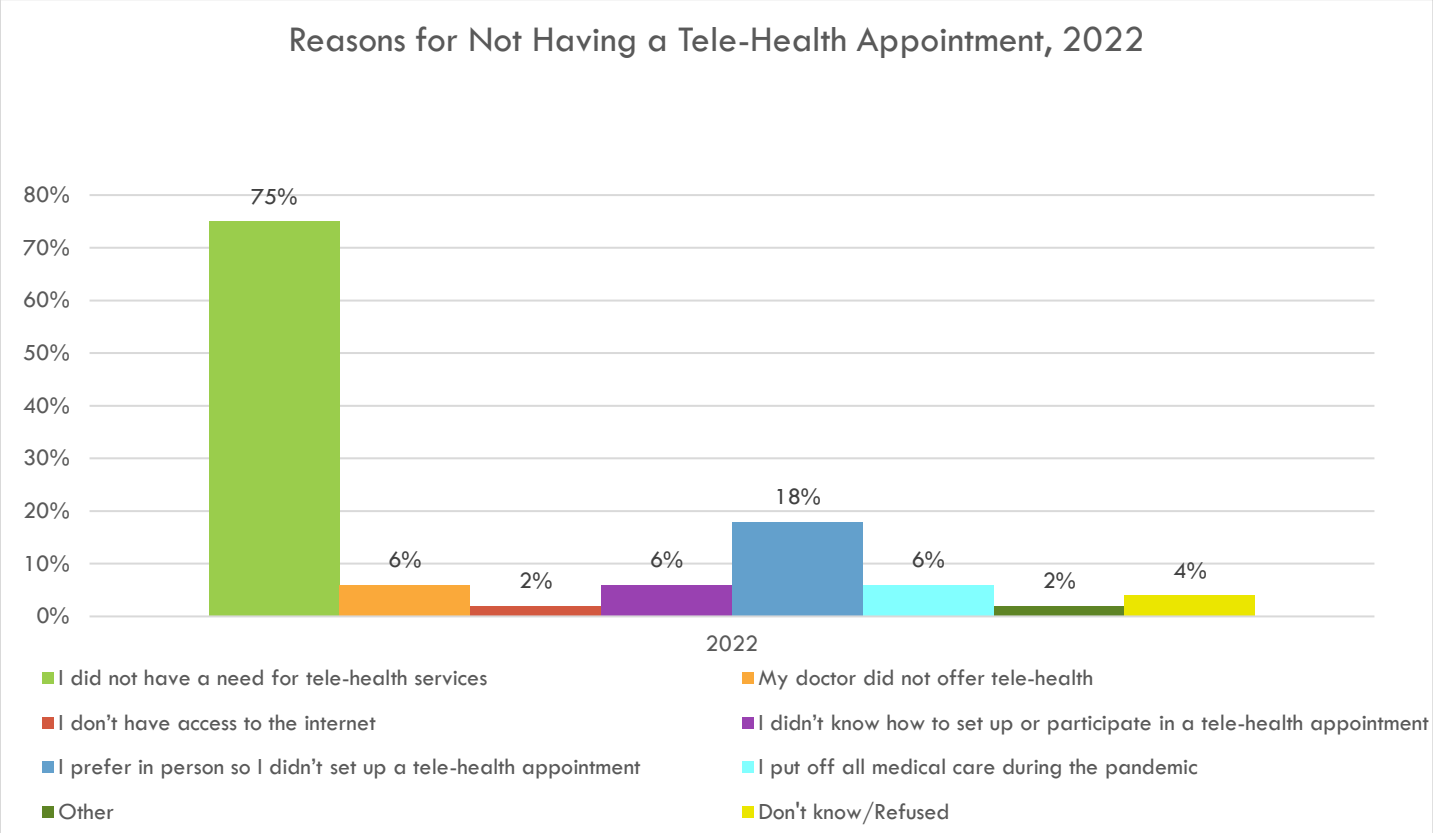


Figure 110



Survey Question 39: *(If did not have a tele-health appointment during COVID) Which of the following were reasons that you did not have a tele-health appointment?*

Figure 111



Reasons for Not Having a Tele-Health Appointment by County, 2022

	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
I did not have a need for tele-health services	75%	77%	86%	80%	79%	73%	73%
My doctor did not offer tele-health	1%	6%	4%	3%	4%	3%	7%
I don't have access to the internet	3%	4%	2%	3%	5%	2%	1%
I didn't know how to set up or participate in a tele-health appointment	4%	6%	3%	6%	5%	4%	6%
I prefer in-person so I didn't set up a tele-health appointment	19%	19%	16%	23%	19%	24%	16%
I put off all medical care during the pandemic	2%	3%	4%	4%	5%	4%	8%
Other	1%	2%	2%	1%	1%	2%	2%
Don't know/Refused	7%	5%	1%	2%	5%	5%	4%

COVID-19 IMPACT

Survey Question 40: *Have you ever had COVID?*

Figure 112

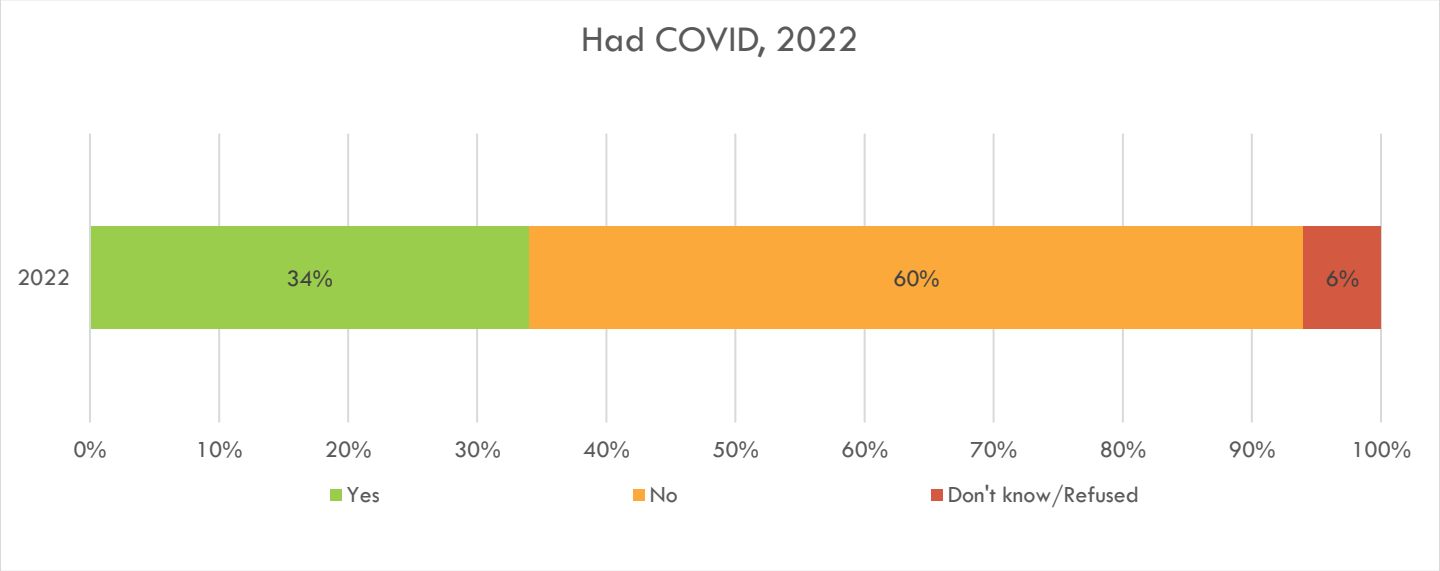
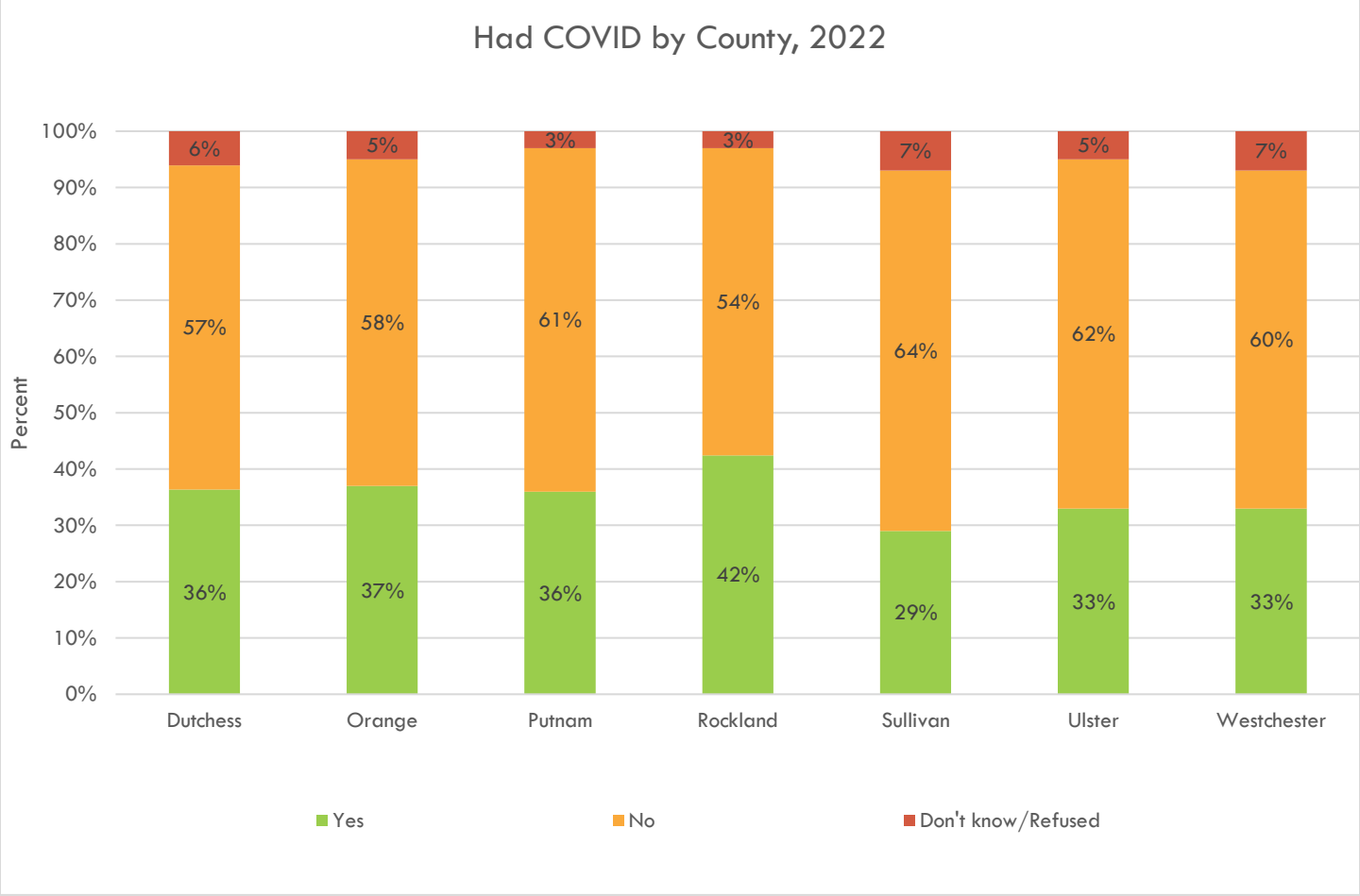


Figure 113



Survey Question 41: *And what about the other members of your household, has any other member of your household had COVID?*

Figure 114

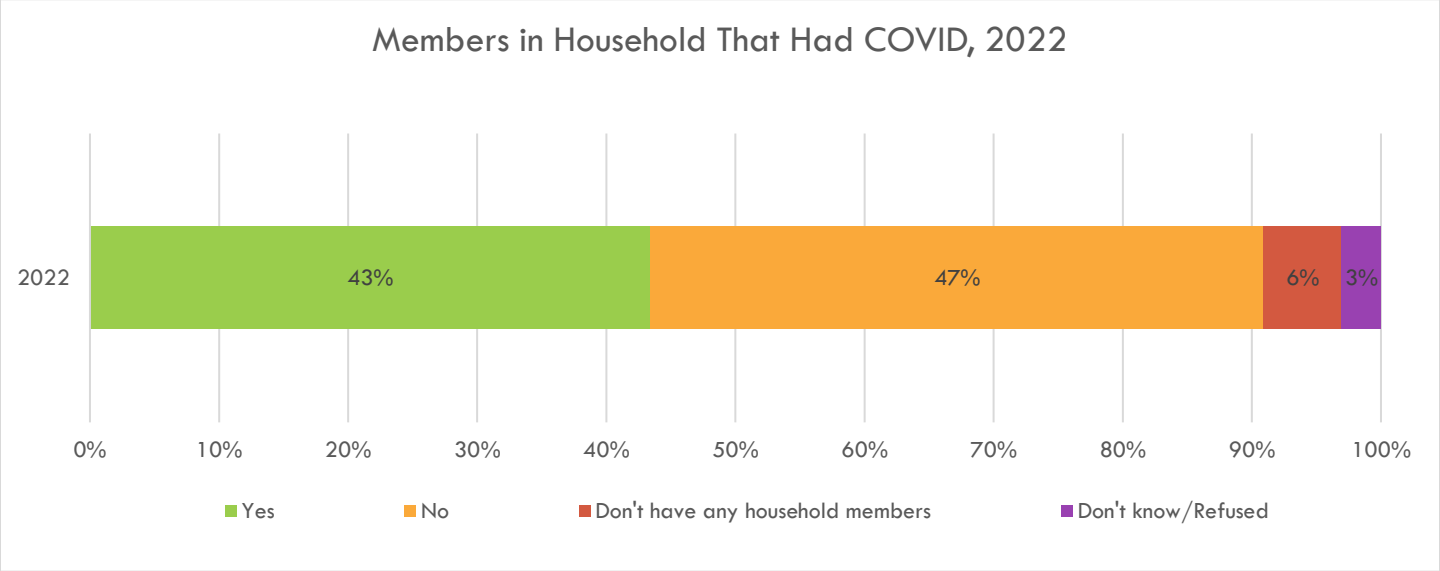
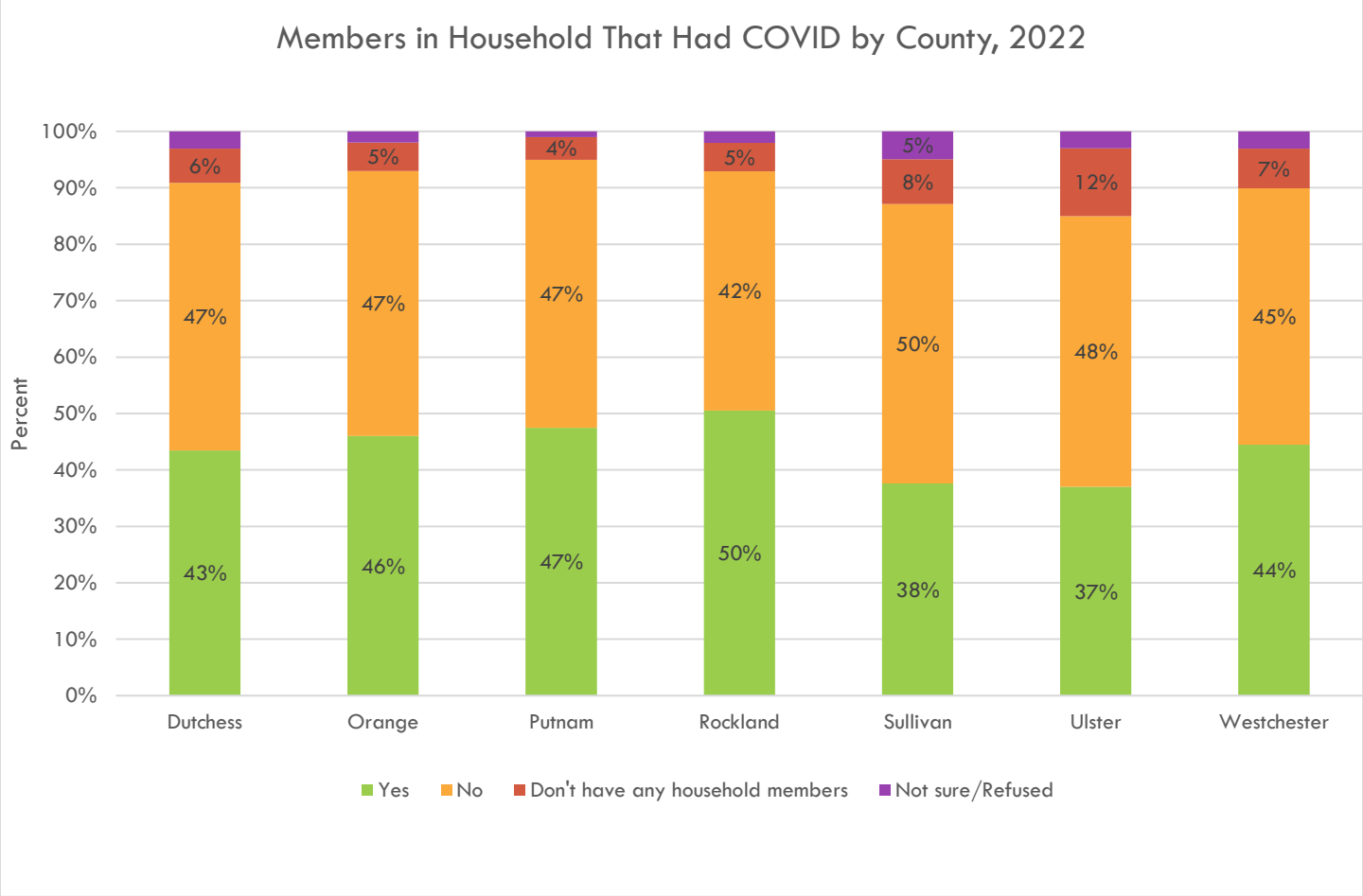
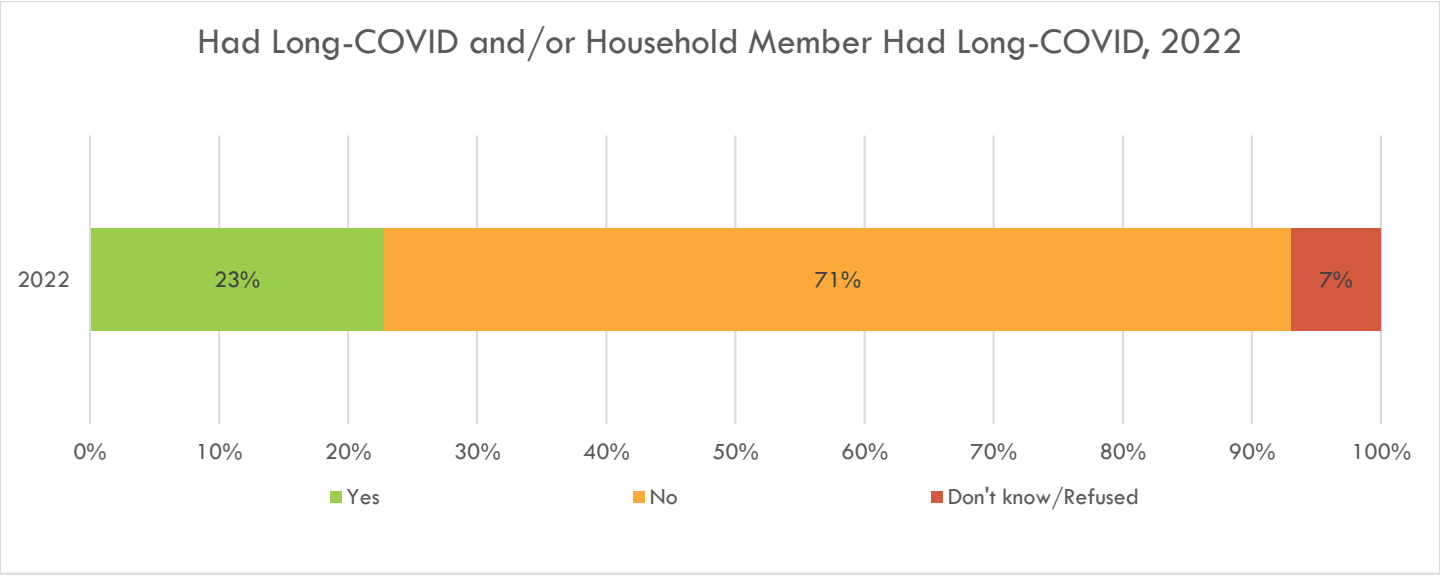


Figure 115



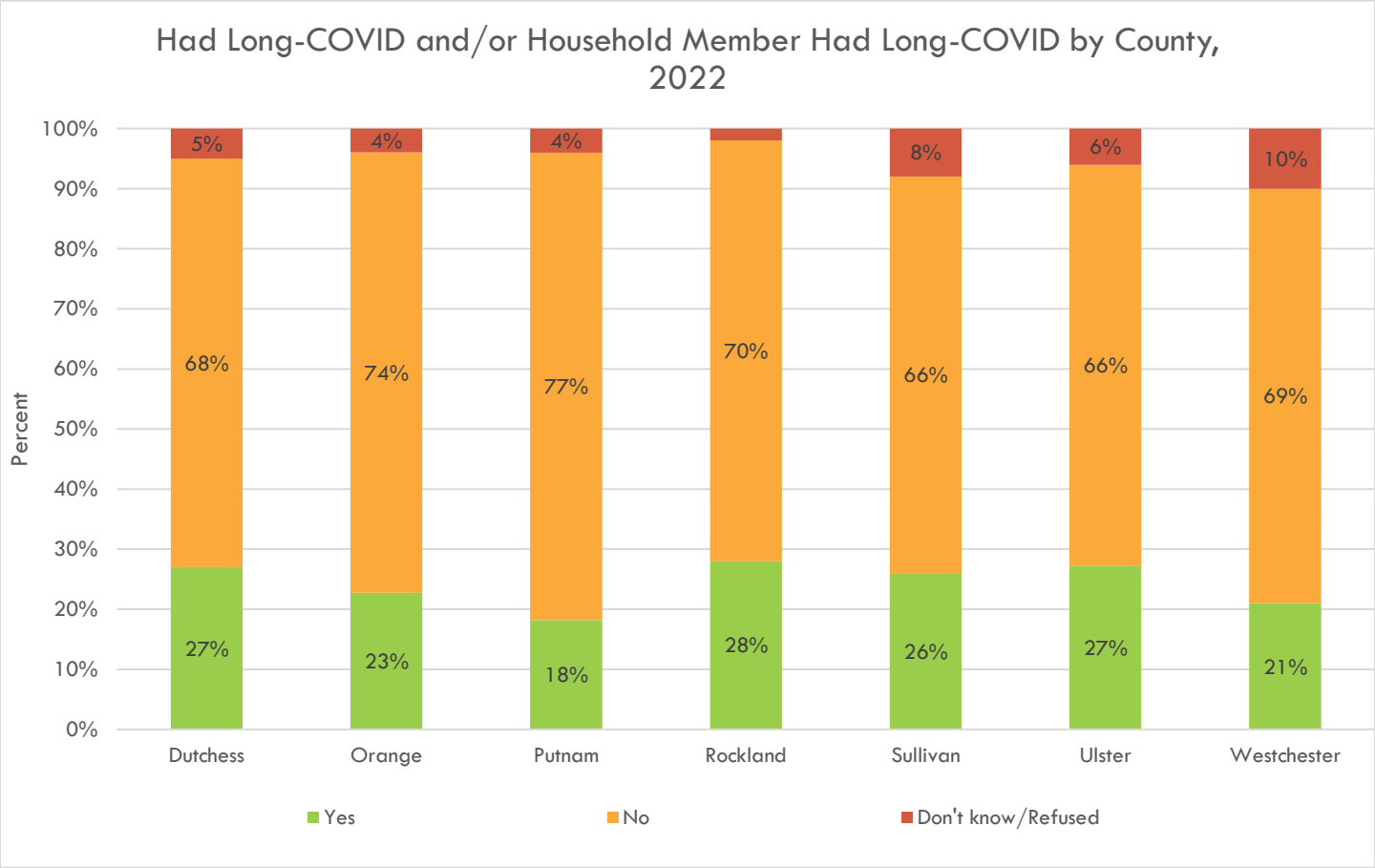
Survey Question 42: *(If "Yes" to Survey Question 40 and/or 41) Have you or any other household member had ongoing COVID symptoms that have lasted more than four weeks - otherwise known as long-COVID?*

Figure 116



Note: The chart above depicts the proportion amongst respondents that reported having had COVID-19 and/or a household member having had COVID-19, as per questions 40 and 41.

Figure 117



Note: The chart above depicts the proportion amongst respondents that reported having had COVID-19 and/or a household member having had COVID-19, as per questions 40 and 41.

Survey Question 43: *Consider the impact of COVID on each of the following and indicate whether it has improved over the course of the pandemic, worsened, or stayed the same?* ***Your physical health***

Figure 118

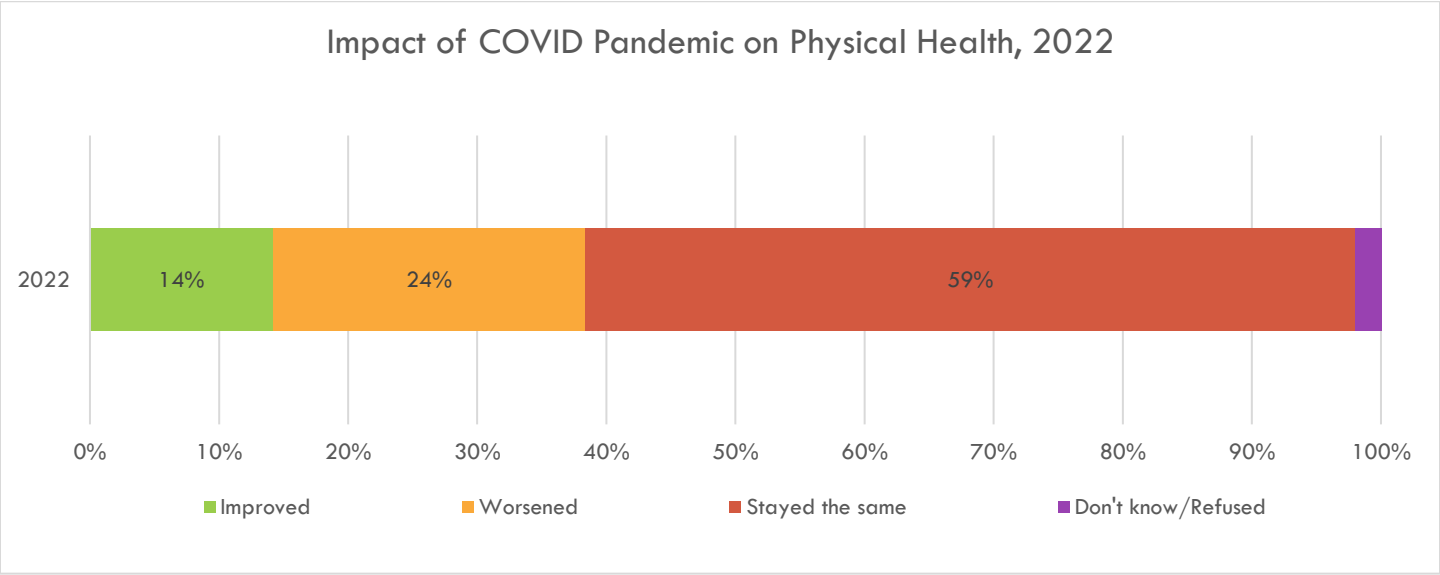
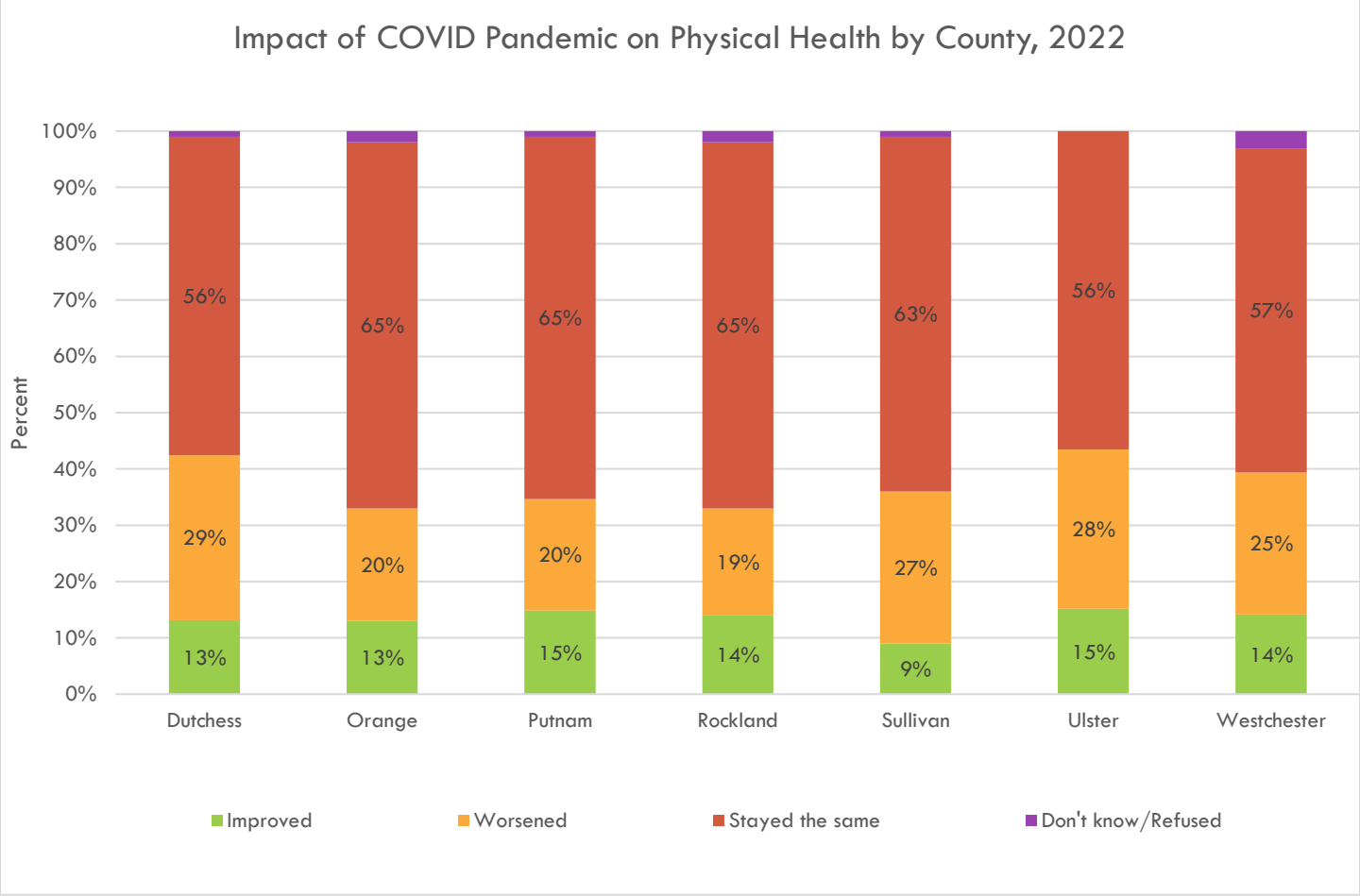


Figure 119



Survey Question 44: *Consider the impact of COVID on each of the following and indicate whether it has improved over the course of the pandemic, worsened, or stayed the same?* ***Your mental health***

Figure 120

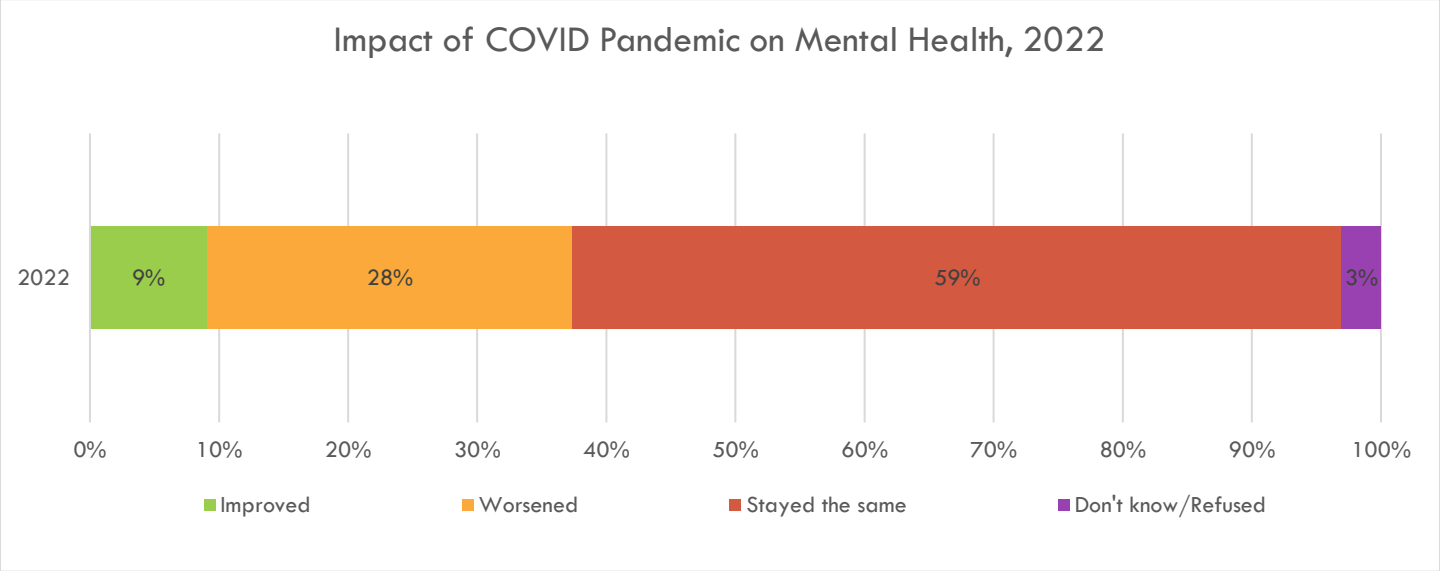
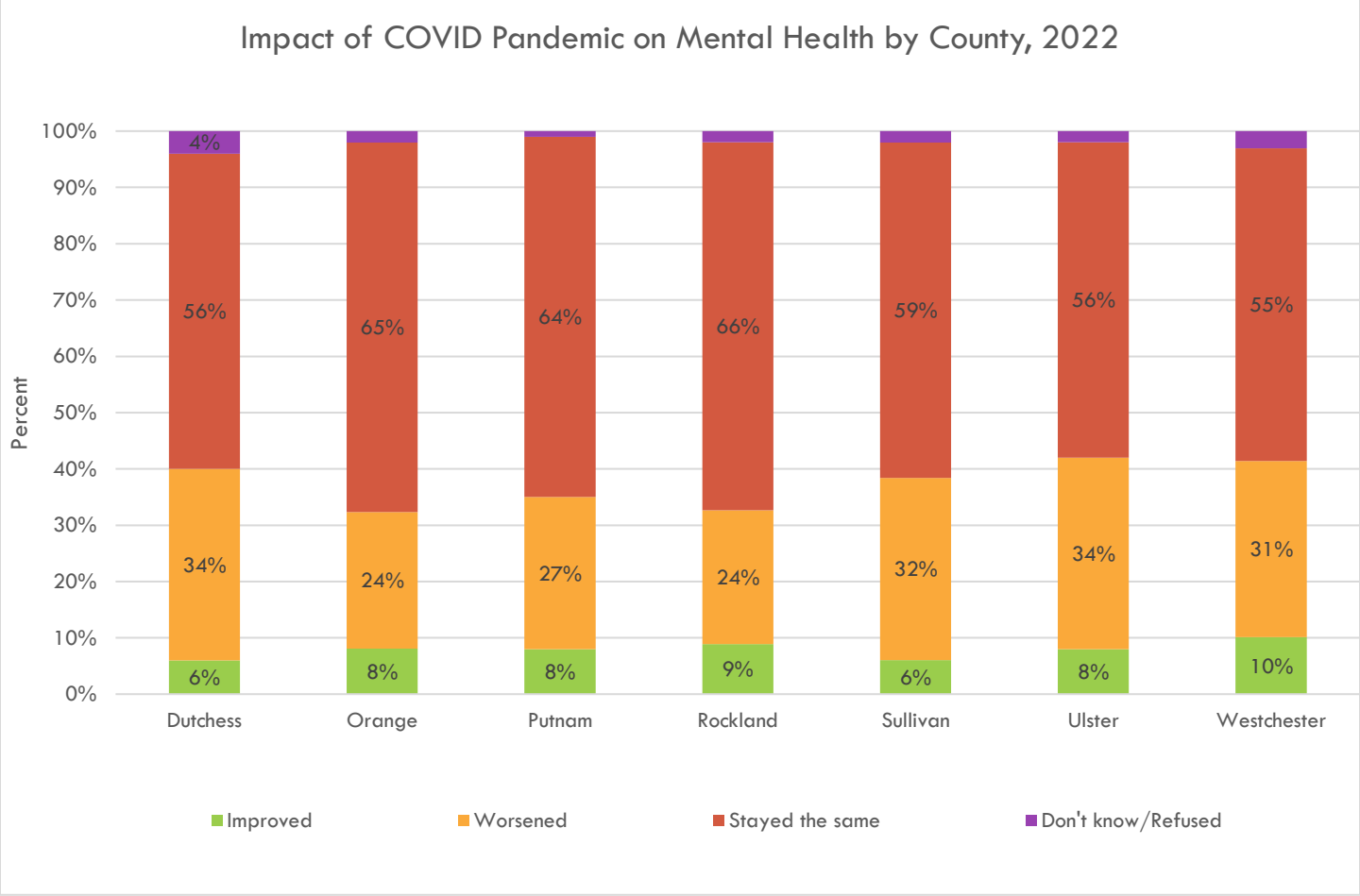


Figure 121



Survey Question 45: *Consider the impact of COVID on each of the following and indicate whether it has improved over the course of the pandemic, worsened, or stayed the same?* ***Your ability to obtain affordable food that is nutritious***

Figure 122

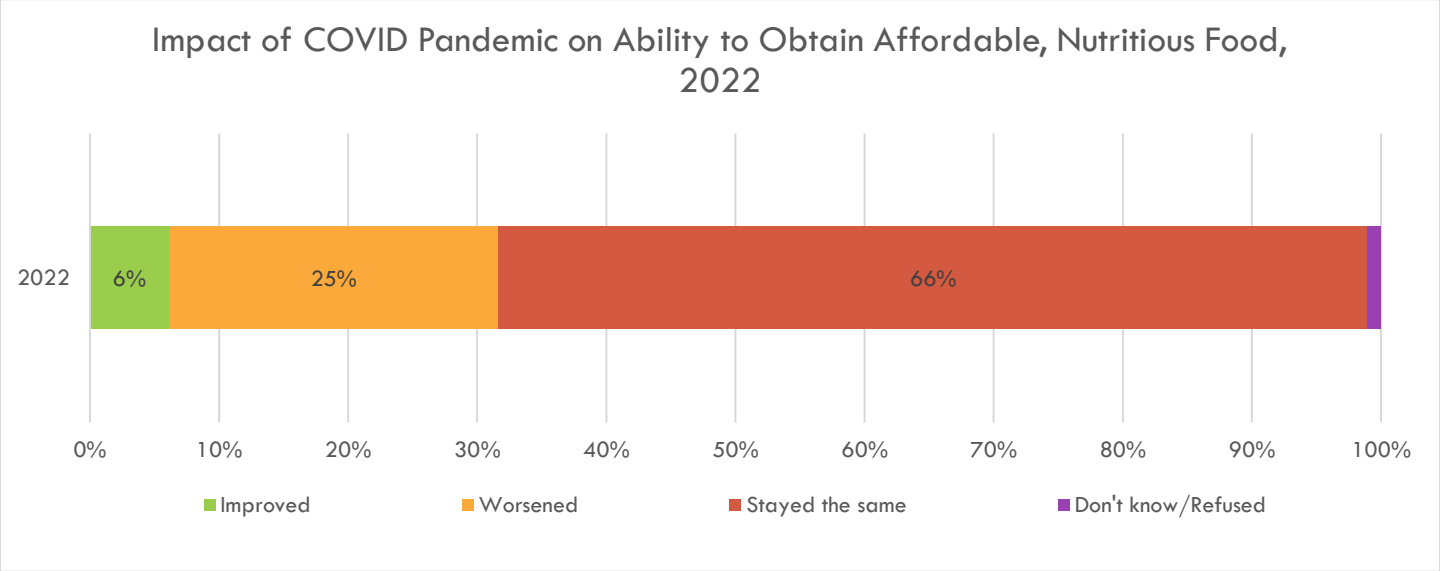
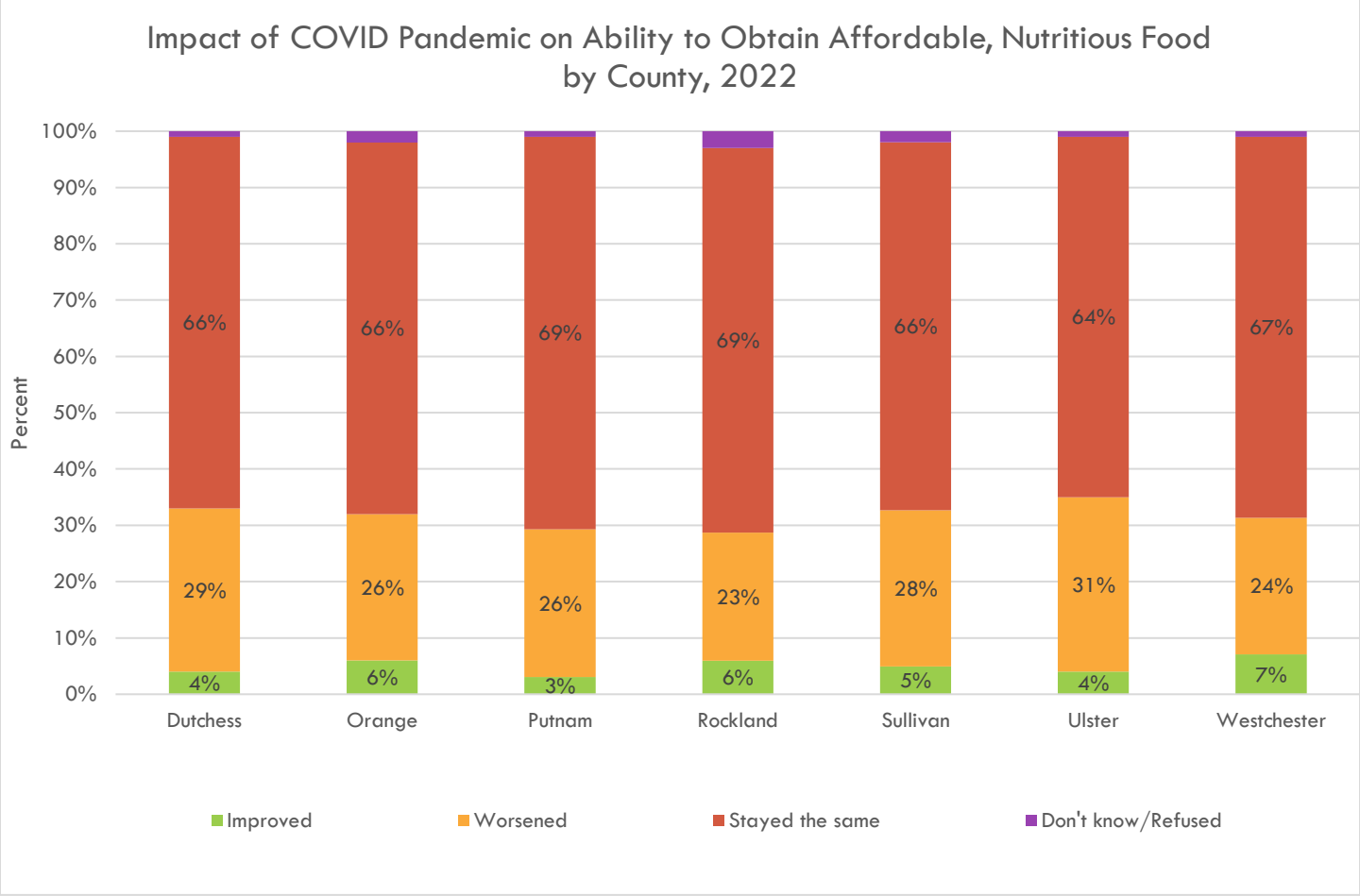


Figure 123



Survey Question 46: *Consider the impact of COVID on each of the following and indicate whether it has improved over the course of the pandemic, worsened, or stayed the same?* ***Your ability to maintain employment that pays at least a living wage***

Figure 124

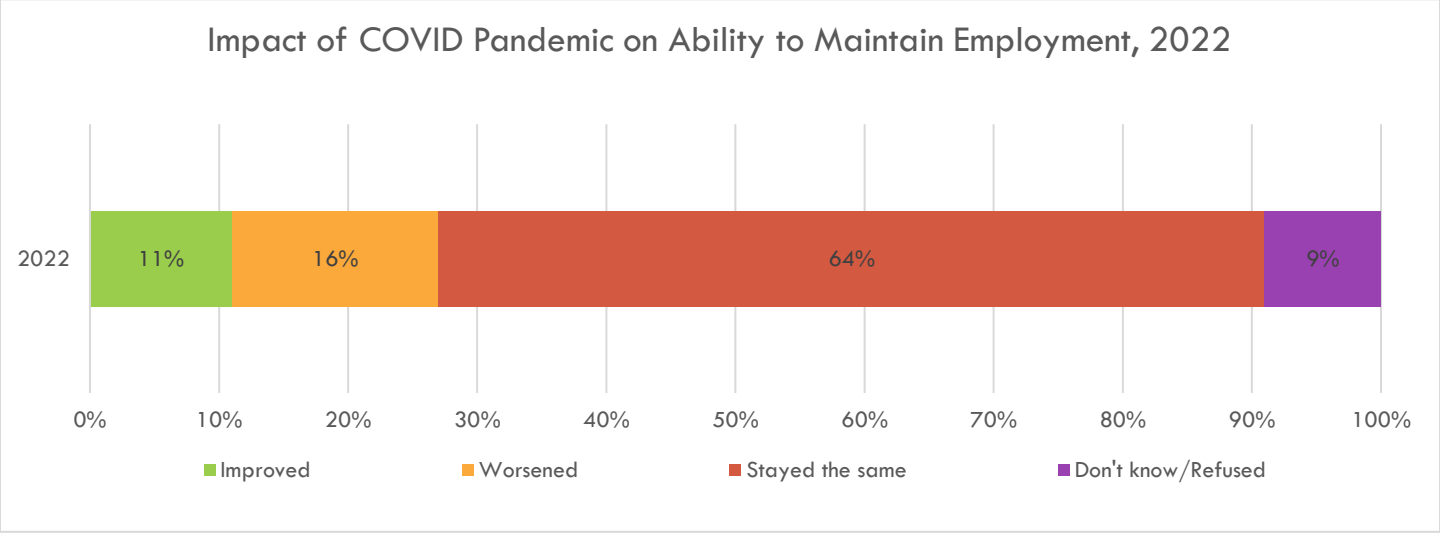
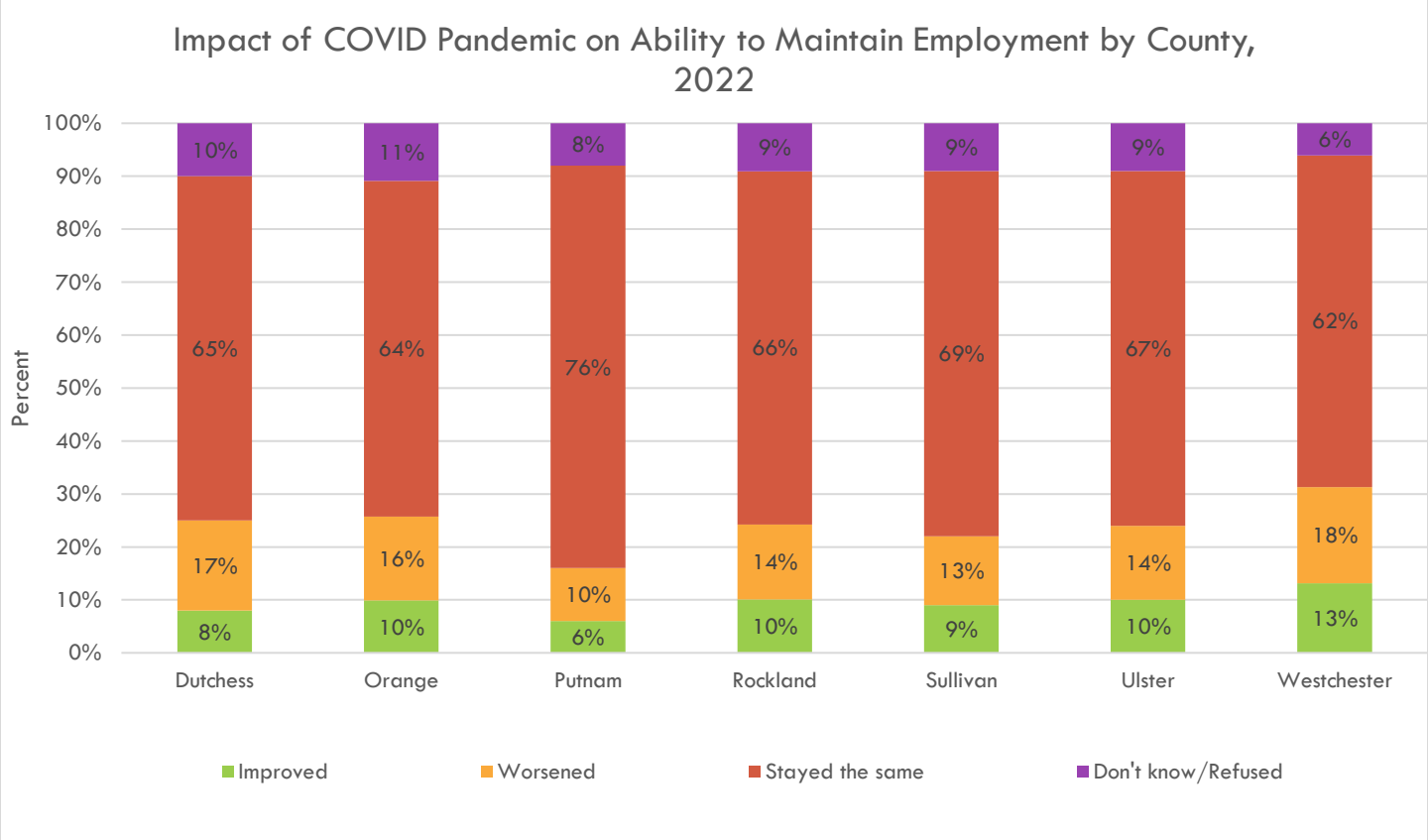


Figure 125



Survey Question 47: *Consider the impact of COVID on each of the following and indicate whether it has improved over the course of the pandemic, worsened, or stayed the same?* ***Your ability to afford housing***

Figure 126

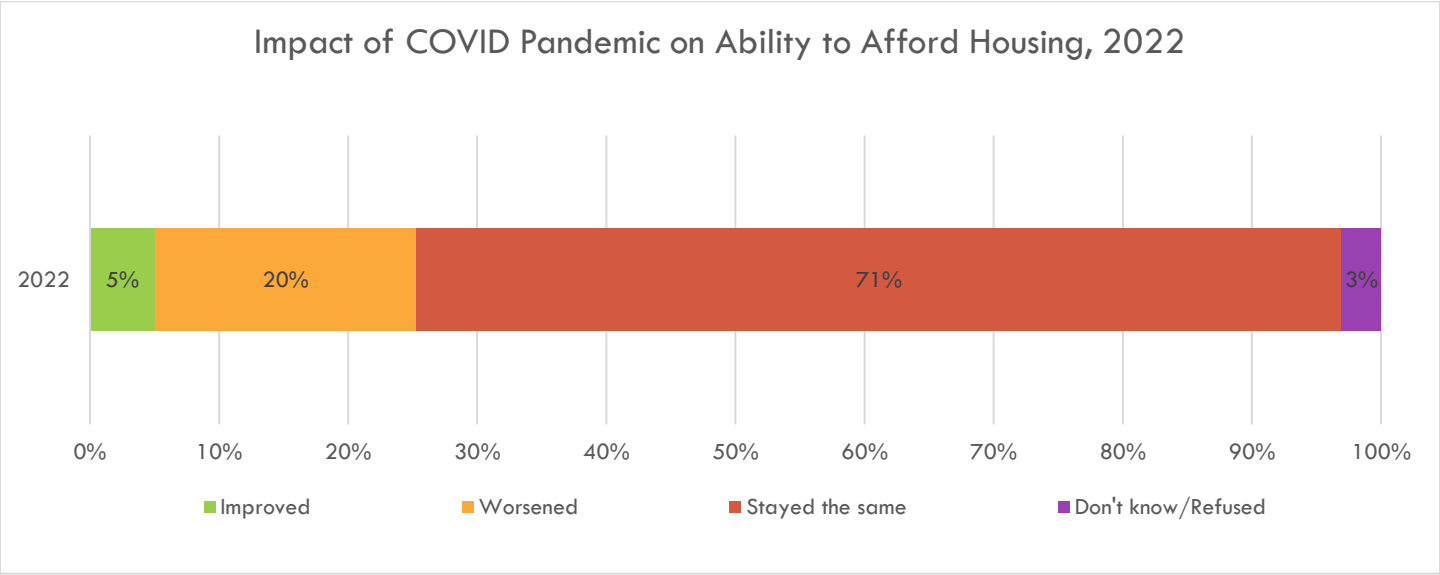
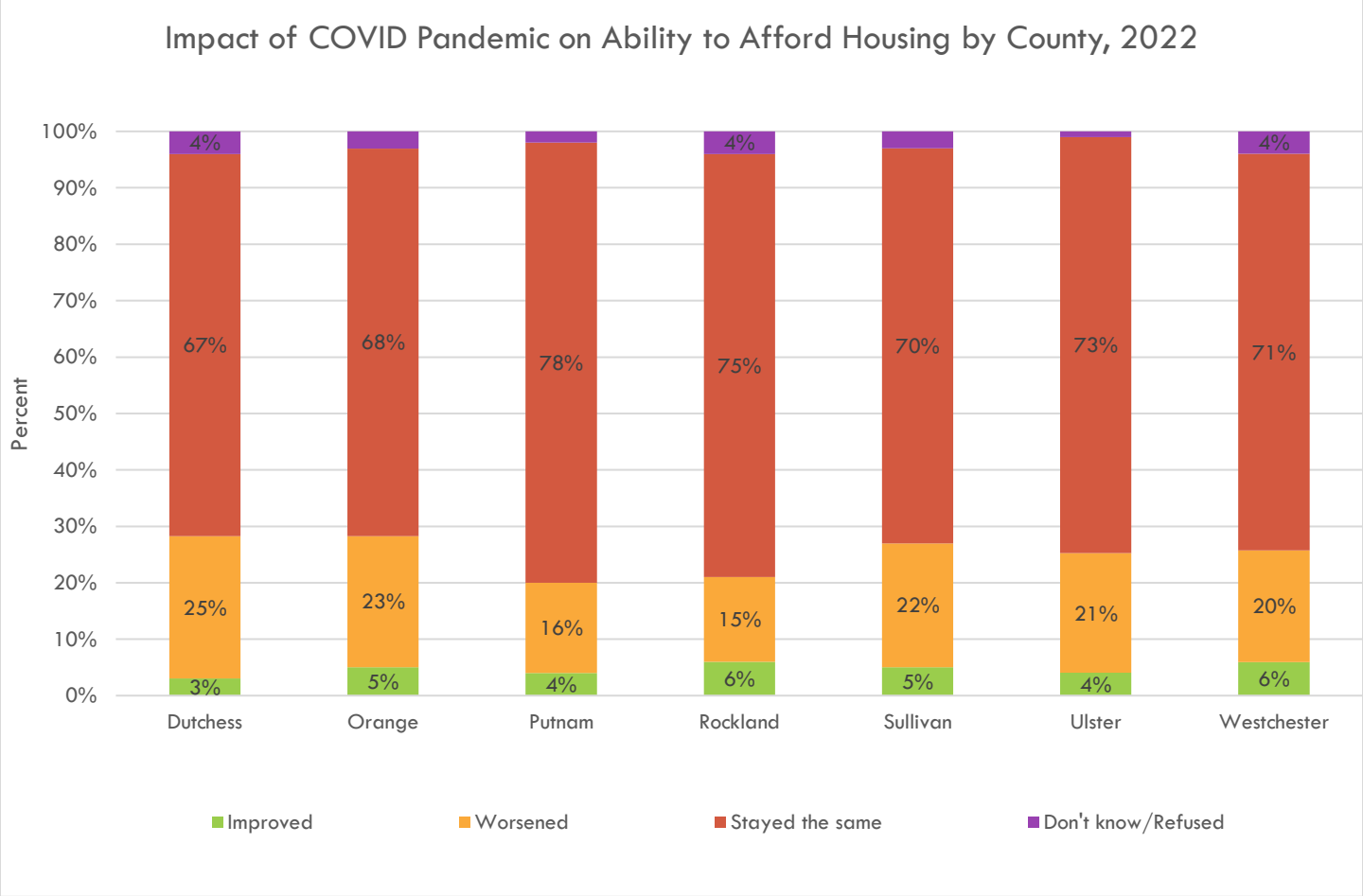


Figure 127



Survey Question 48: *Consider the impact of COVID on each of the following and indicate whether it has improved over the course of the pandemic, worsened, or stayed the same?* ***Your ability to find available, quality childcare***

Figure 128

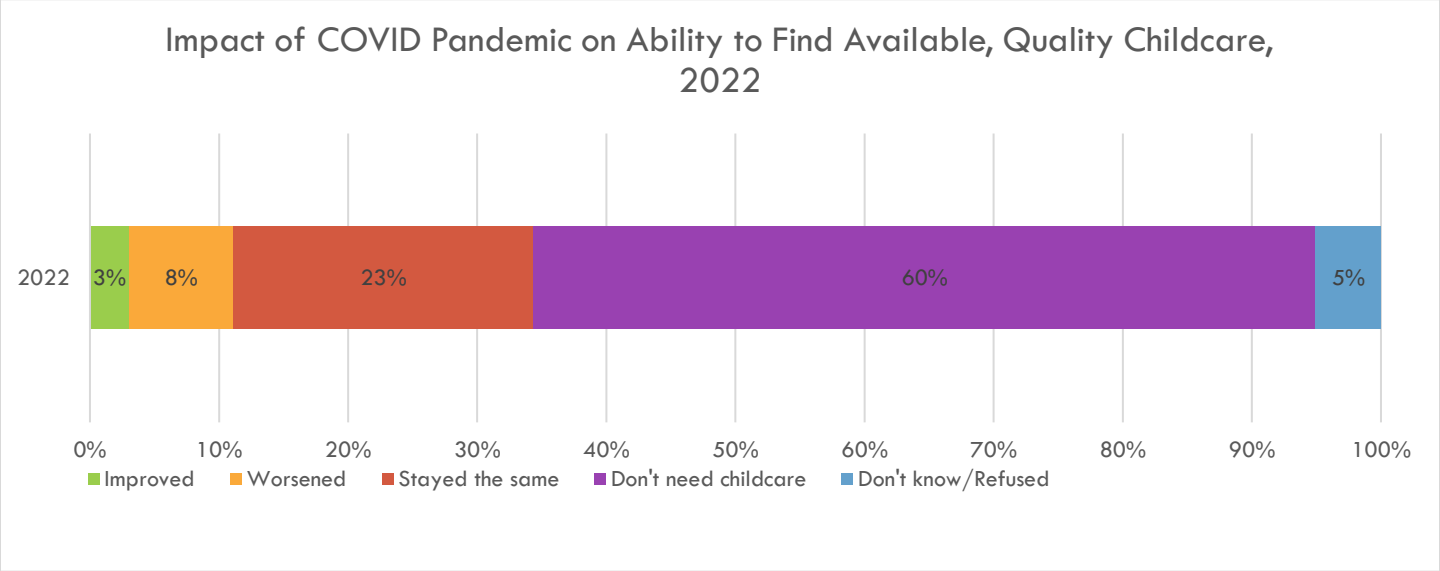
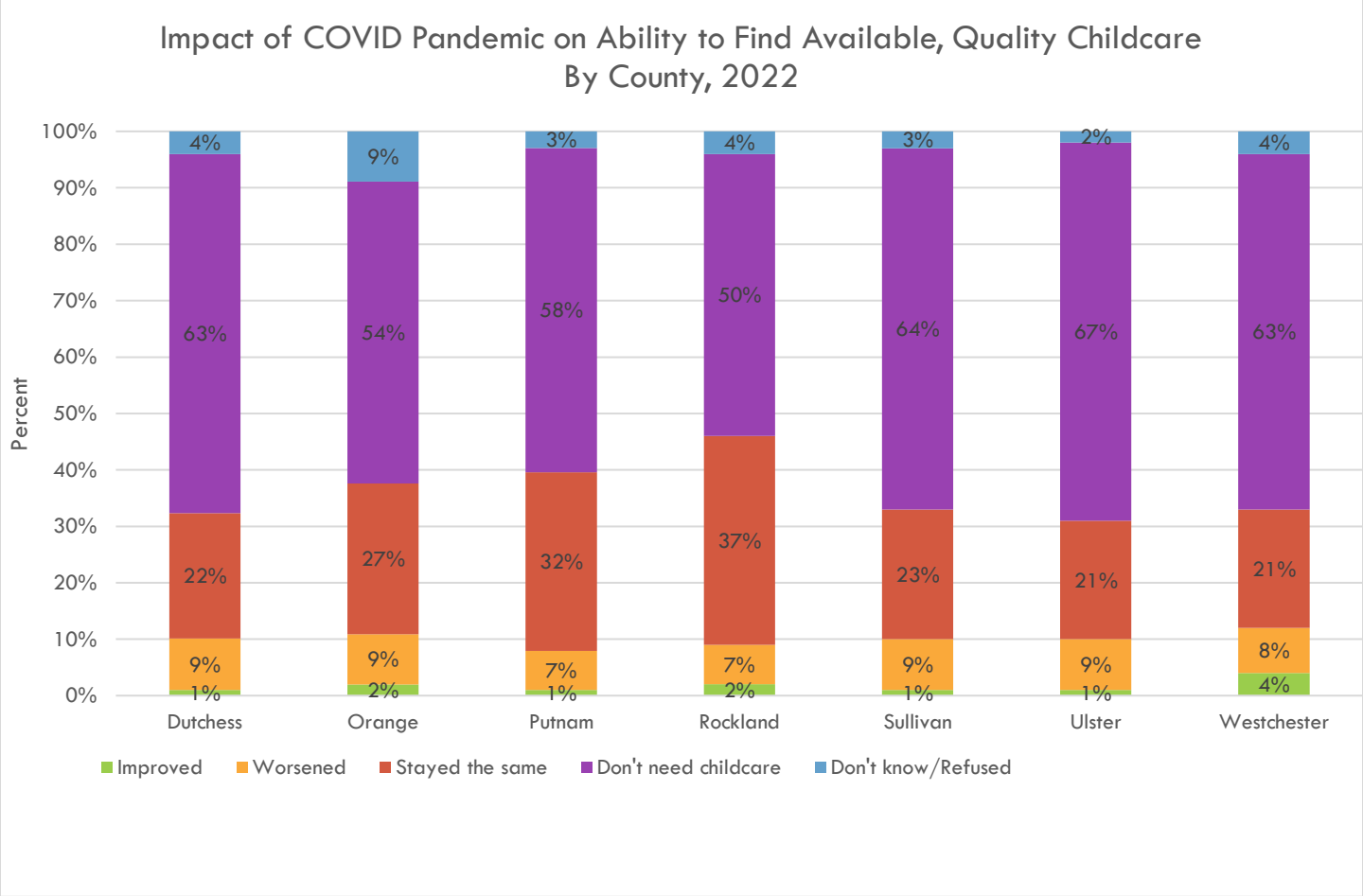


Figure 129



Survey Question 49: *Consider the impact of COVID on each of the following and indicate whether it has improved over the course of the pandemic, worsened, or stayed the same?* ***Your ability to obtain care or to care for any member of your household that has a disability or chronic illness***

Figure 130

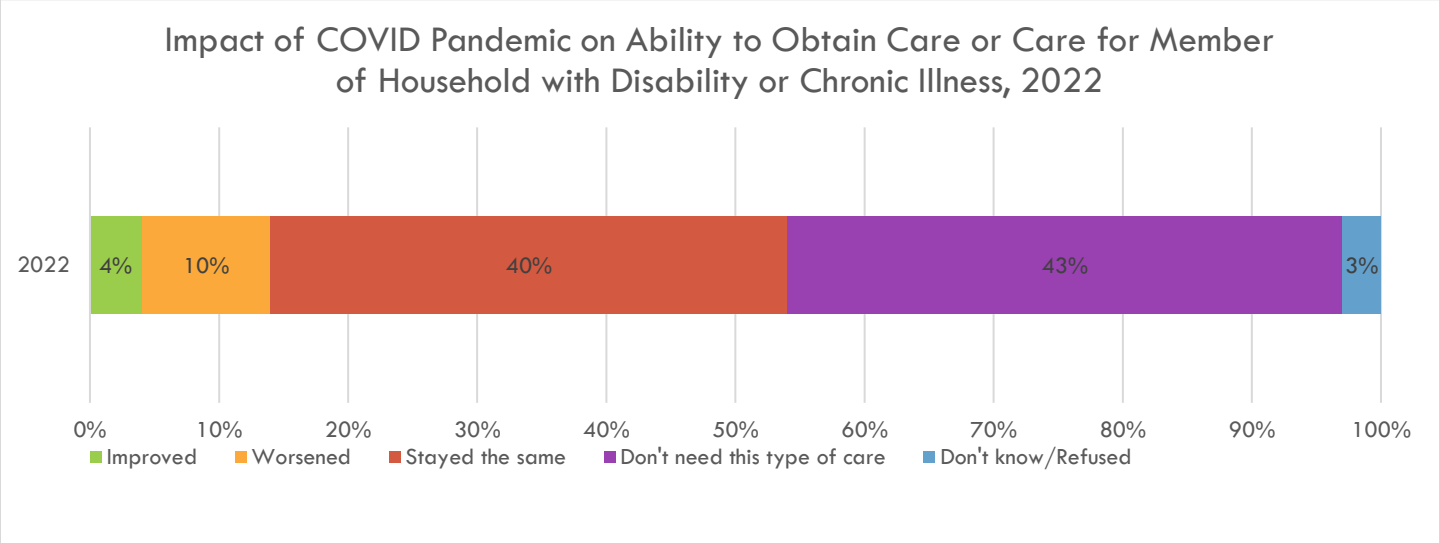
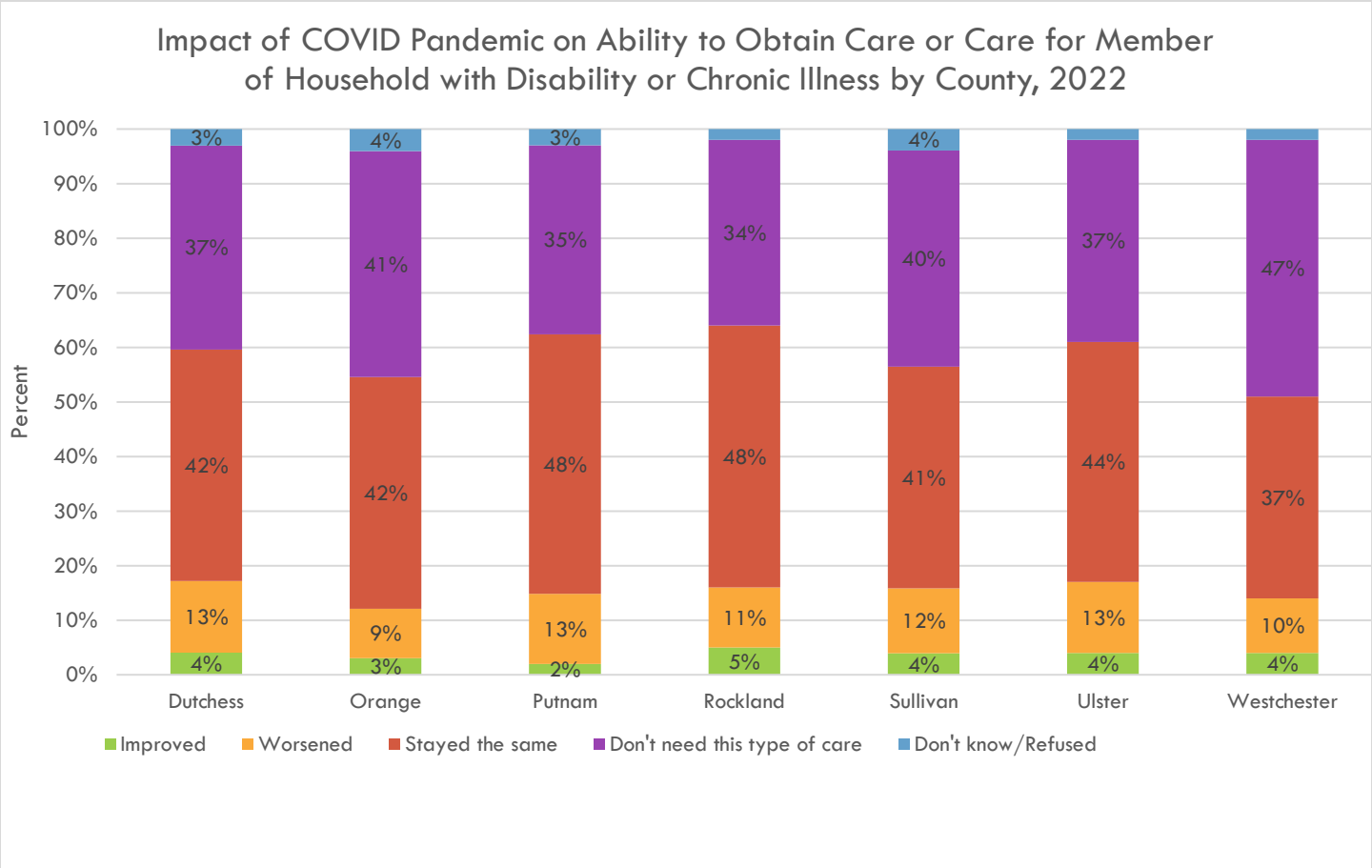


Figure 131



Survey Question 50: *Have you been vaccinated for COVID?*

Figure 132

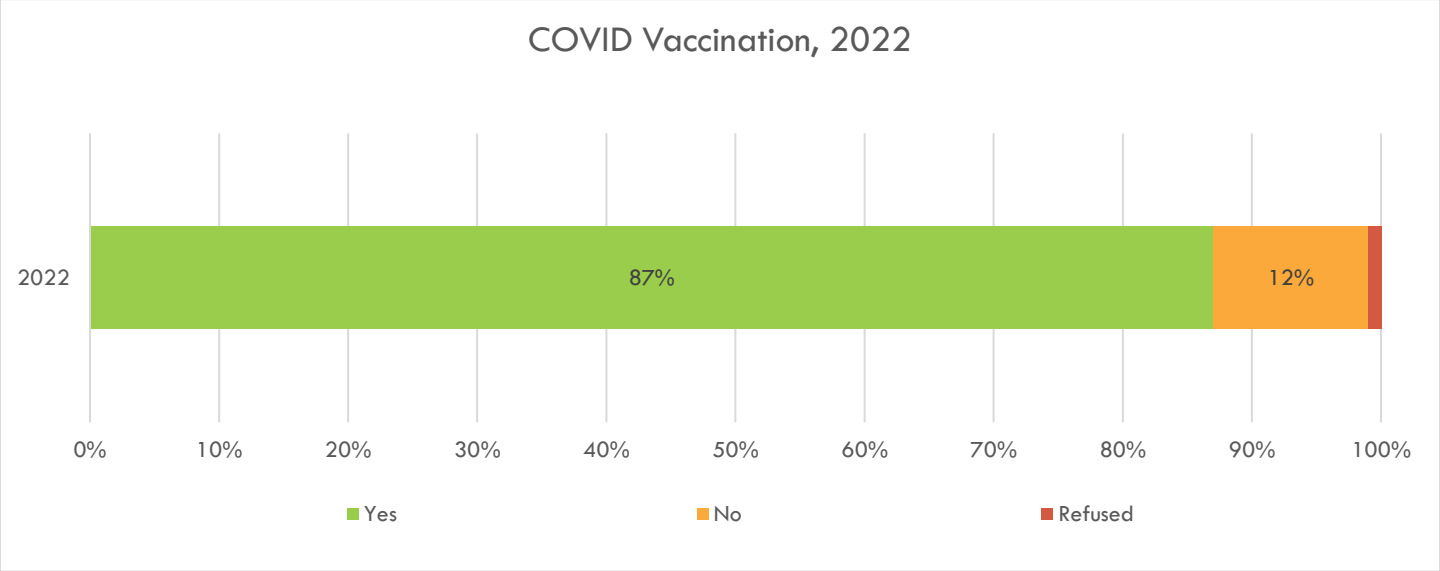
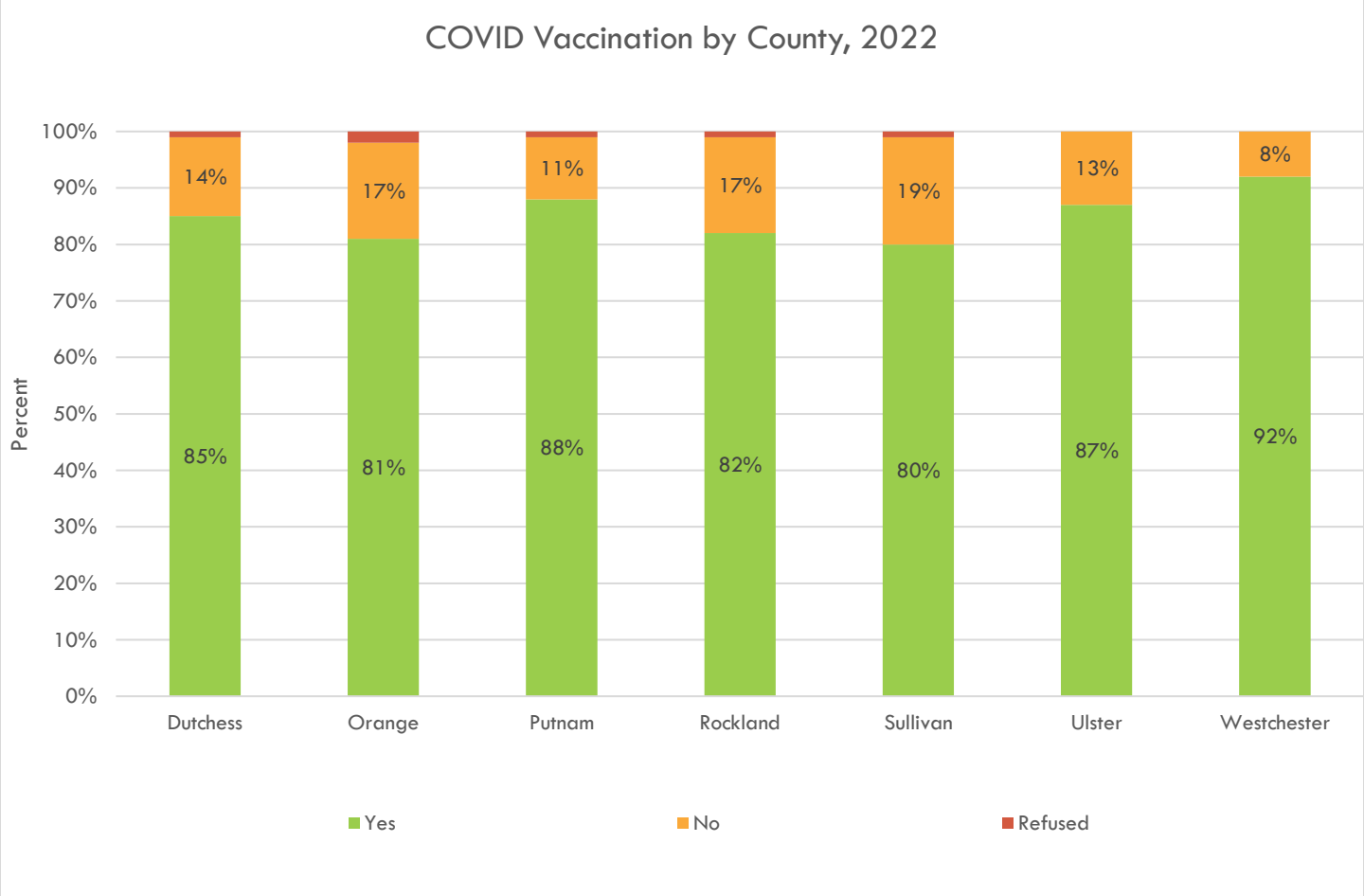


Figure 133



Survey Question 51: *(If vaccinated for COVID) Thinking back to when you got vaccinated, did you get it as soon as you were eligible or were you somewhat hesitant to get the COVID vaccine?*

Figure 134

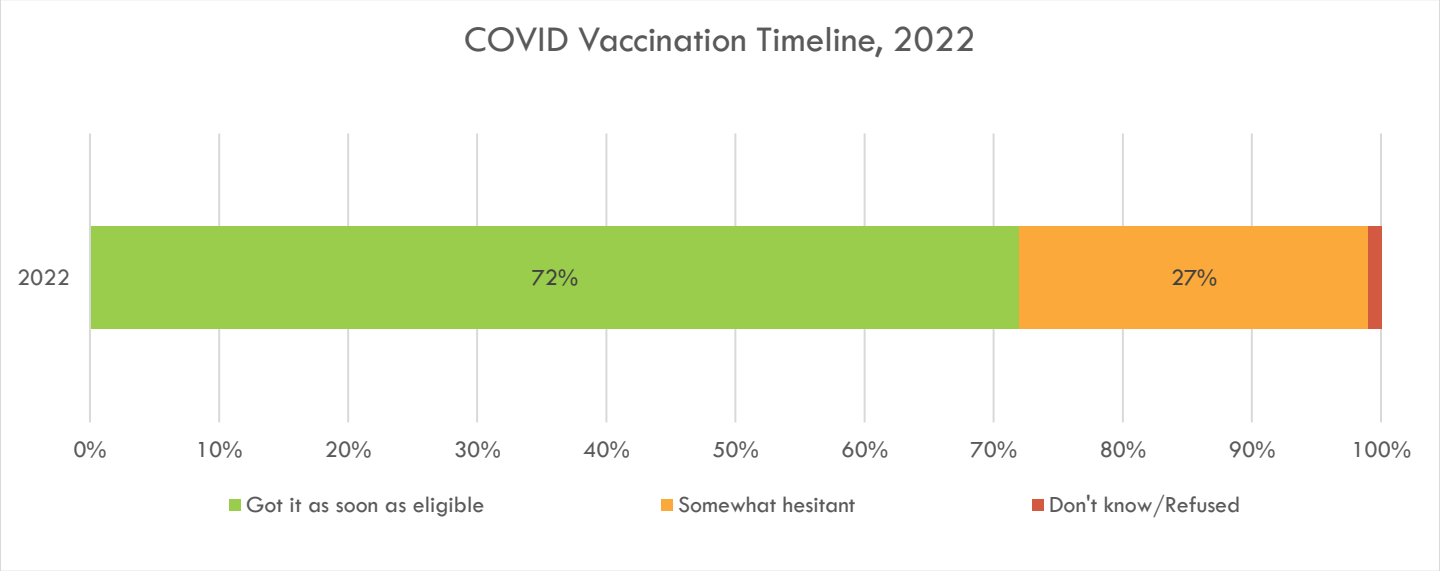
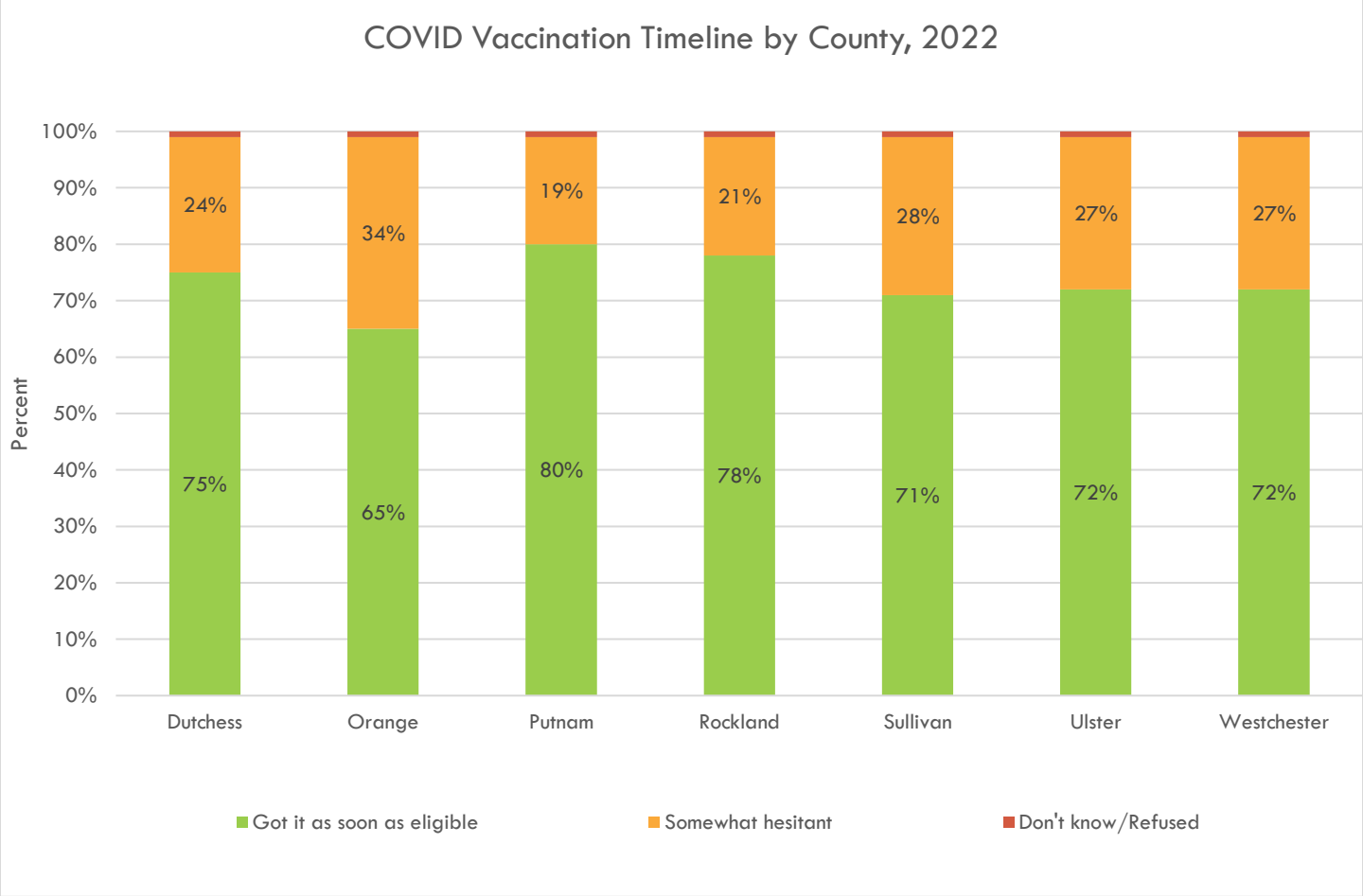
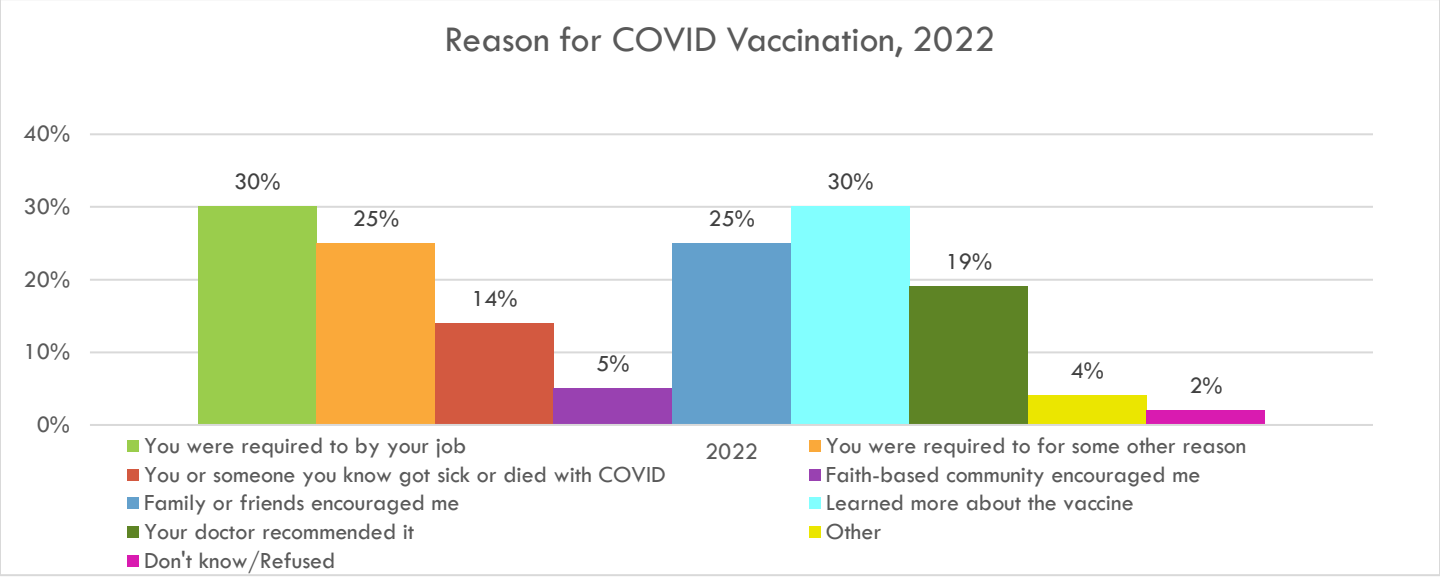


Figure 135



Survey Question 52: *(If vaccinated for COVID and somewhat hesitant) Why did you end up getting the vaccine?*

Figure 136



Reasons for COVID Vaccination by County, 2022

	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
You were required to by your job	24%	31%	31%	23%	30%	26%	33%
You were required to for some other reason	23%	25%	18%	20%	26%	17%	22%
You or someone you know got sick or died with COVID	9%	11%	6%	19%	8%	7%	15%
Faith-based community encouraged me	2%	5%	1%	6%	1%	5%	6%
Family or friends encouraged me	24%	23%	22%	40%	20%	32%	26%
Learned more about the vaccine	32%	23%	36%	26%	25%	40%	32%
Your doctor recommended it	16%	17%	16%	24%	13%	27%	17%
Other	6%	8%	1%	5%	10%	6%	2%
Don't know/Refused	2%	3%	2%	1%	2%	2%	3%

MID-HUDSON COMMUNITY PARTNER SURVEY

BACKGROUND

Although the Mid-Hudson Region (M-H Region) Community Health Survey collected responses from a randomized sample of over 5,500 M-H Region residents, there are some populations that may not fully be accounted for in this survey. Underrepresented populations include those who have a low-income, veterans, seniors, people experiencing homelessness, LGBTQIA+ members, and people with a mental health diagnosis. In order to ensure the needs of each population were met, focus groups were conducted and surveys administered through partners within the community. The term "partners" refers to those who offer services such as mental health support, vocational programs, and programs for underserved populations. Conducting focus groups and surveying partners was completed to gain a better understanding of the obstacles and barriers these populations are facing when trying to access services.

Dutchess, Orange, Rockland, Sullivan, Ulster, and Westchester Counties created a survey tool based on the survey utilized in 2018. Each participating LHD shared a survey link with partners to supply additional insight around local factors influencing community health. The survey covered several topics including the populations the partners serve, the issues that affect health in the communities they serve, barriers to people achieving better health, and interventions that are used to address social determinants of health [see Appendix K]. Throughout the M-H Region, 84 surveys were completed by partners. The answers to the survey varied throughout each county. Some counties chose to further investigate these differences by conducting focus groups.

When looking at data from the M-H Region, the top three issues partners felt affected health in their communities included: access to affordable, decent, and safe housing; access to mental health providers; and access to affordable, reliable transportation. The top three barriers partners felt prevented people from achieving better health in their communities were: knowledge of existing resources, health literacy, and geographic location (living in a rural area). Chronic diseases, health disparities, and mental health and substance use issues were thought to highly impact these specific populations in the M-H Region.

In the following sections, the data was broken down by each county with three primary sections: Major Findings, Current Efforts, and Specific Recommendations. These data points can help guide the work to address the needs of underserved populations. Putnam County chose to not participate in the Community Partner Survey and instead opted to assess partner assets and resources. This assessment is included in the Putnam County section below.

DUTCHESS COUNTY

In Dutchess County, 31 responses were collected from providers that serve a variety of populations [see Appendix L]. The Dutchess County Department of Behavioral and Community Health (DBCH) conducted a focus group that took place through the Eastern Dutchess Rural Health Network. Several agencies were represented in the meeting, and the discussion was centered around the survey questions that were distributed prior to the focus group [see Appendix K].

The survey showed that the top three issues that affected health in Dutchess County were [see Figure 137]:

1) Access to affordable, decent, and safe housing
2) Access to reliable public transportation
3) Access to mental health providers

The survey also showed that the top three barriers to people achieving better health in Dutchess County were [see Figure 138]:

1) Knowledge of existing resources
2) Drug and/or alcohol use
3) Geographic location – living in a rural area

According to survey responses, issues highly impacting health in Dutchess communities include chronic diseases, health disparities, and mental health and substance use issues [see Figure 139]. In many cases, the M-H Region Community Health Survey responses supported the provider survey responses and vice versa. For example, over 90% of residents in Dutchess County either responded completely true (62%) or somewhat true (31%) to the statement "people may have a hard time finding a quality place to live due to the high cost of housing." This reflects the provider responses which listed access to affordable, decent, and safe housing as the number one issue that affects health in Dutchess County.

In the M-H Region Community Survey, when responding to the statement "people can get to where they need to go using public transportation," 54% of respondents answered not very true (26%) or not at all true (23%). 40% responded either not very true (23%) or not at all true (17%) to the statement "there are sufficient mental health providers." These responses mirror the order in which providers ranked the top three issues affecting health in Dutchess County: access to affordable decent and safe housing; access to reliable public transportation; access to mental health providers. The focus group gave an opportunity for agency providers to expand upon these issues and barriers.

MAJOR FINDINGS

- Navigating the healthcare system is a challenge for both patients and service providers. Hispanic populations in Eastern Dutchess are especially affected by these challenges due to language and cultural barriers, and for some, the challenges of being undocumented.
- Insurance presents a barrier to care in a variety of ways. Those who are undocumented have trouble getting health insurance at all. Insurance was also pointed to as a complication for hospitals attempting to provide maternity care and family health. It was brought up as a possible cause of patients being diverted away from Sharon Hospital's maternity ward.
- Sharon Hospital is closing its maternity ward due to lack of patients. Other nearby hospitals such as Columbia and Windham are closing their maternity wards due to lack of physicians. The cause of

Sharon's lack of patients is not fully understood. It seems many patients are ending up in Poughkeepsie even if they live closer to Sharon Hospital.

- Communication between institutions is an area that could be targeted for improvement. For example, Sharon Hospital was not listed on New York State's (NYS') list of stroke centers though they were only a few miles from the border. This was a barrier to improving patient outcomes because patients should be brought to the nearest stroke center. This issue was resolved, but it demonstrated the importance of having "the right people in the right places at the right time."
- Finding access to specialty care is a difficulty and requires better communication. Those trying to connect people to care know that services are available but finding how to access them is still a struggle. There are a "wealth of services," however connecting services to those who need it is a challenge.

SPECIFIC RECOMMENDATIONS

- Care management is an important component to connect people and organizations.
- Organizations need ensure they are communicating to make their systems easier to navigate.
- Kinship circles are an aspect of care management that can be replicated.
- The county needs to build back its workforce after it was pared down due to COVID-19.

Figure 137

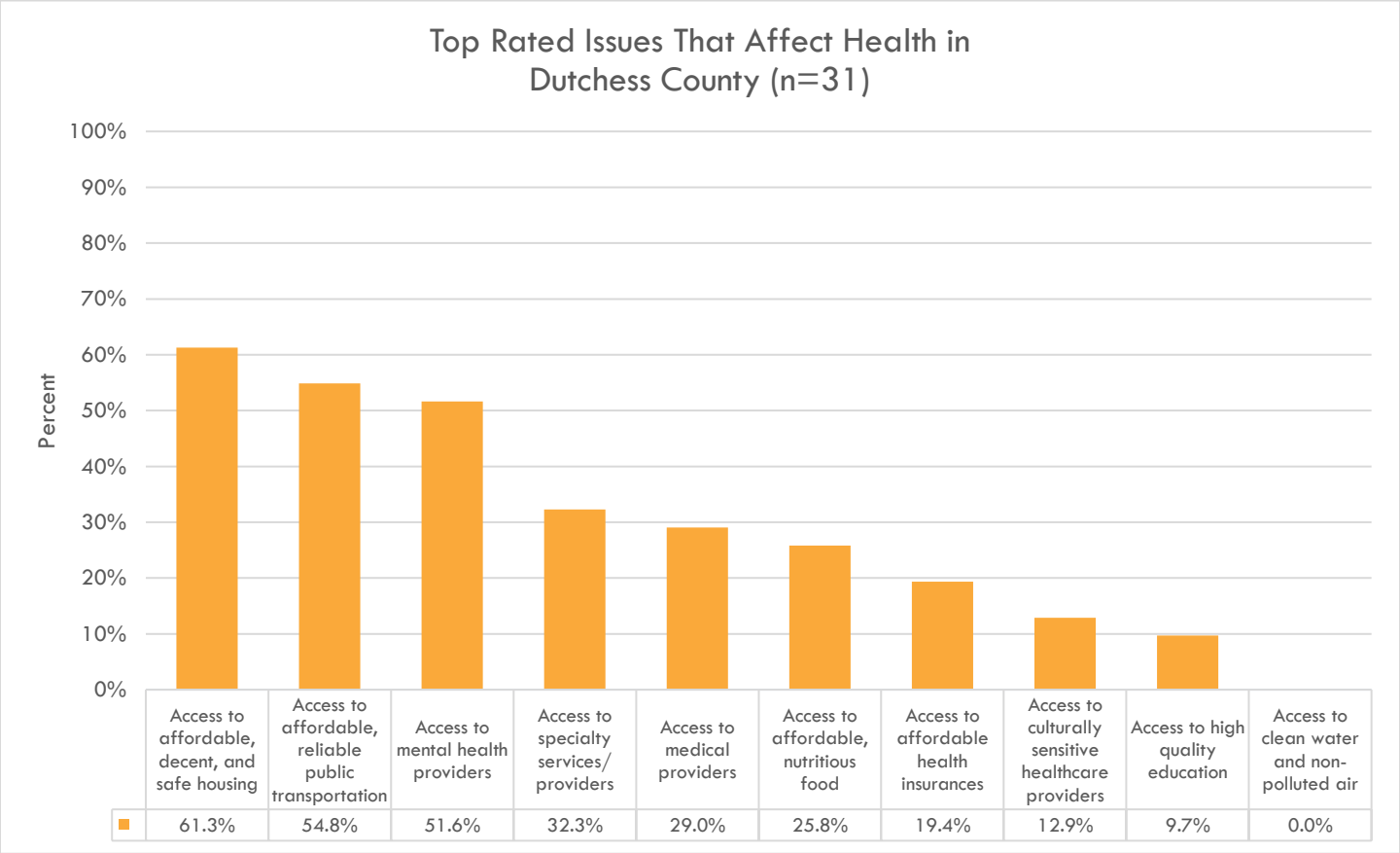
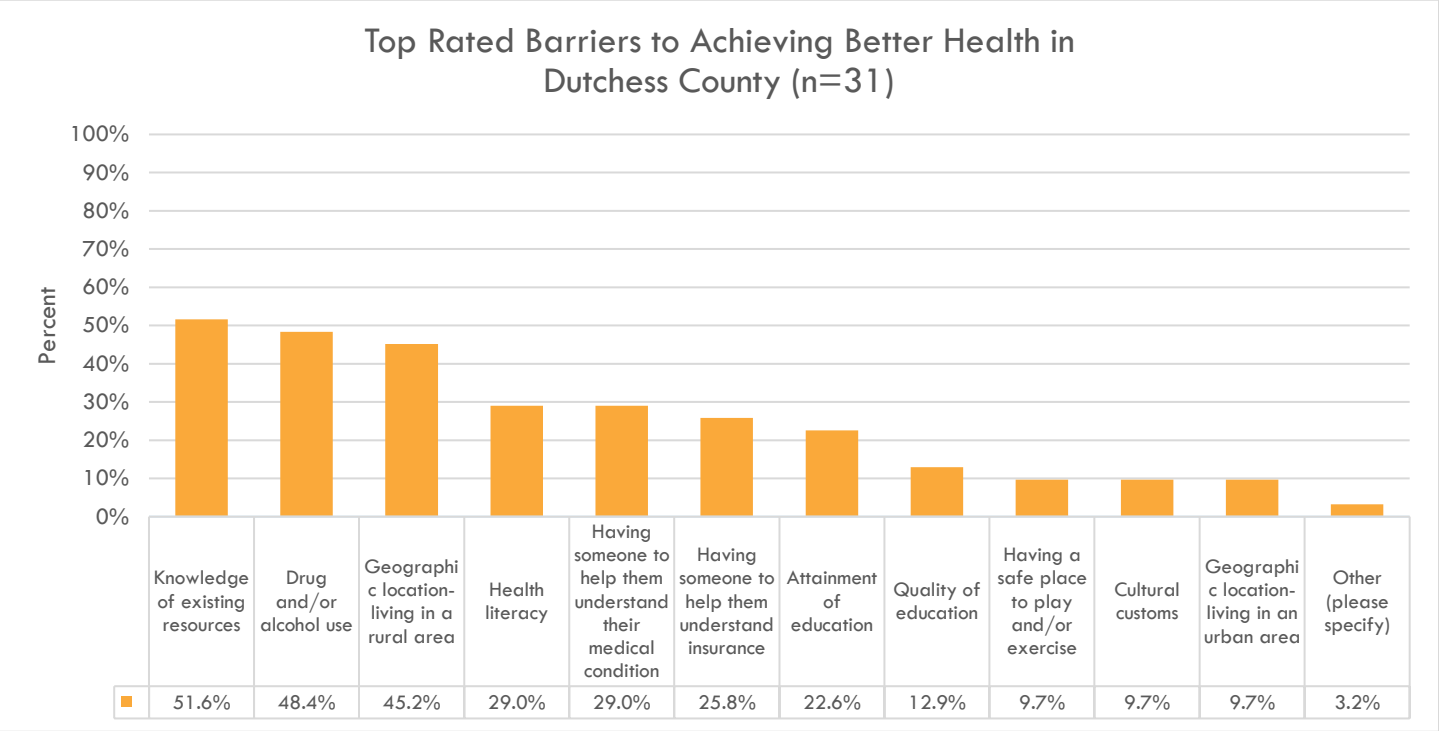
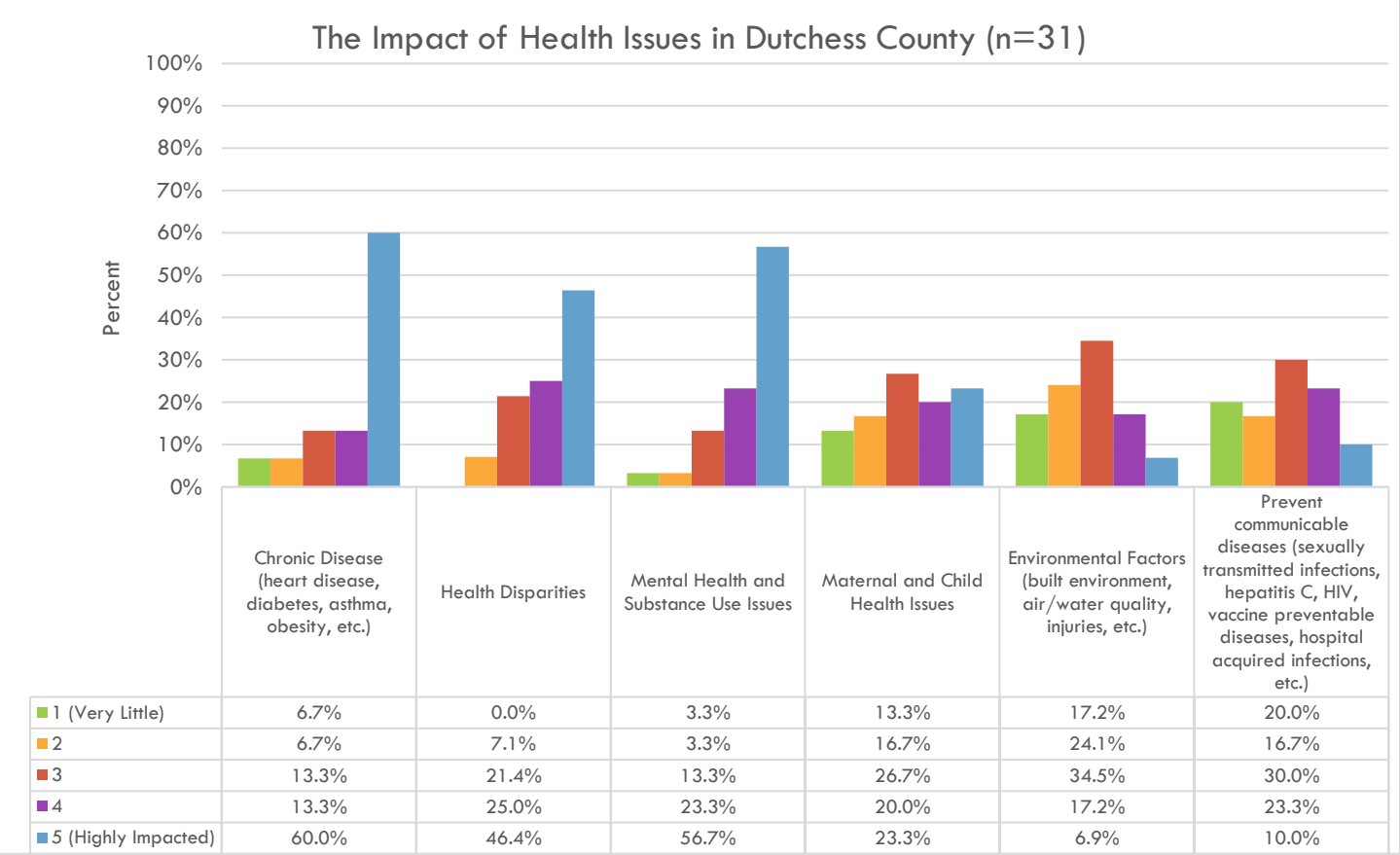


Figure 138



	Knowledge of existing resources	Drug and/or alcohol use	Geographic location-living in a rural area	Health literacy	Having someone to help them understand their medical condition	Having someone to help them understand insurance	Attainment of education	Quality of education	Having a safe place to play and/or exercise	Cultural customs	Geographic location-living in an urban area	Other (please specify)
	51.6%	48.4%	45.2%	29.0%	29.0%	25.8%	22.6%	12.9%	9.7%	9.7%	9.7%	3.2%

Figure 139



	Chronic Disease (heart disease, diabetes, asthma, obesity, etc.)	Health Disparities	Mental Health and Substance Use Issues	Maternal and Child Health Issues	Environmental Factors (built environment, air/water quality, injuries, etc.)	Prevent communicable diseases (sexually transmitted infections, hepatitis C, HIV, vaccine preventable diseases, hospital acquired infections, etc.)
1 (Very Little)	6.7%	0.0%	3.3%	13.3%	17.2%	20.0%
2	6.7%	7.1%	3.3%	16.7%	24.1%	16.7%
3	13.3%	21.4%	13.3%	26.7%	34.5%	30.0%
4	13.3%	25.0%	23.3%	20.0%	17.2%	23.3%
5 (Highly Impacted)	60.0%	46.4%	56.7%	23.3%	6.9%	10.0%

ORANGE COUNTY

In Orange County, 45 responses were collected from providers that serve various underserved populations including persons with disabilities, people with a substance use disorder, persons with a mental health diagnosis, persons experiencing homelessness, low-income individuals, and veterans. The Orange County Department of Health (OCDOH) conducted two focus groups. The first was with the Joint Membership of Health and Community Agencies (JMHCA). Their focus is on providing residents of Orange County with a welcoming, comprehensive, and seamless service delivery system for recovery, health, and wellness. The second was with the Changing the Orange County Addiction Treatment Ecosystem. Discussions were centered around the survey questions distributed prior to the focus groups. Focus group attendees included organizations such as Rehabilitation Support Services, Regional Economic Community Action Program (RECAP Inc.), Mental Health Association, Action Towards Independence, Fearless!, Orange County Department of Mental Health, and the American Lung Association. In addition, the survey was e-mailed out to human service providers throughout Orange County through the JMHCA, Changing the Ecosystem, and Resiliency Committee listservs.

The survey showed that the top three issues that affect health in Orange County were:

1) Access to affordable, decent, and safe housing
2) Access to mental health providers
3) Access to affordable, reliable, personal, and public transportation

The survey also showed that the top three barriers to people achieving better health in Orange County were:

1) Drug and/or alcohol use
2) Knowledge of existing resources
3) Health literacy

Issues highly impacting health in the communities as listed by survey respondents include mental health and substance abuse issues, maternal and child health issues, chronic disease, and health disparities. The focus groups gave an opportunity for agency providers to expand upon these issues and barriers.

MAJOR FINDINGS

- A lack of affordable and/or consistent transportation is a major issue for many residents of Orange County. This includes lacking the financial means to get to and from appointments/work, a lack of available public transportation, and an absence of knowledge of the transportation options that are available (n=13).
- Affordable and safe housing is a challenge for many. This leaves many people homeless or, at the least, economically distressed (n=7).
- Language barriers between the residents and service providers exist which can cause confusion and lack of adequate care (n=4).
- An overall lack of knowledge of the resources that are available to the community exists. While there are many programs in place to assist residents, they can only be utilized when there is a knowledge and understanding of these services (n=6).
- Mental health/addiction issues continue to plague our communities. This is in the form of mental health stigma, lack of providers, and the large number of individuals who are facing active addiction (n=7).

IMPACT OF COVID-19

As a result of the COVID-19 pandemic, some of the existing issues in mental health have worsened. Available mental health providers have declined while mental health issues among the community have increased (n=11).

The COVID-19 pandemic has also opened the door to virtual appointments for healthcare. While this has its benefits, there are also drawbacks to the lack of face-to-face interaction that comes with an in-person visit. Many residents are hesitant to come in person due to COVID-19 concerns and/or they enjoy the convenience of not having to leave home. Providers are also hesitant to bring too many people into the office for fear of spreading COVID-19, as well as entering the homes of their patients for in-home care (n=30).

SPECIFIC RECOMMENDATIONS

- Holistic care management services dedicated to address the social determinants of health in every touch point in the systems where a client or patient may show up to address root causes of health issues.
- Continuing to break down the silos of care for the complicated systems that patients/clients must navigate to address their health issues.
- Expand availability of tele-health/tele-video services and broadband expansion for those that struggle with mental health issues, homelessness, and substance use.
- Need for prioritization from local leaders to address the social determinants of health such as poverty, housing, and transportation and develop strategic opportunities for communities to work together and to build community awareness of these issues.

Figure 140

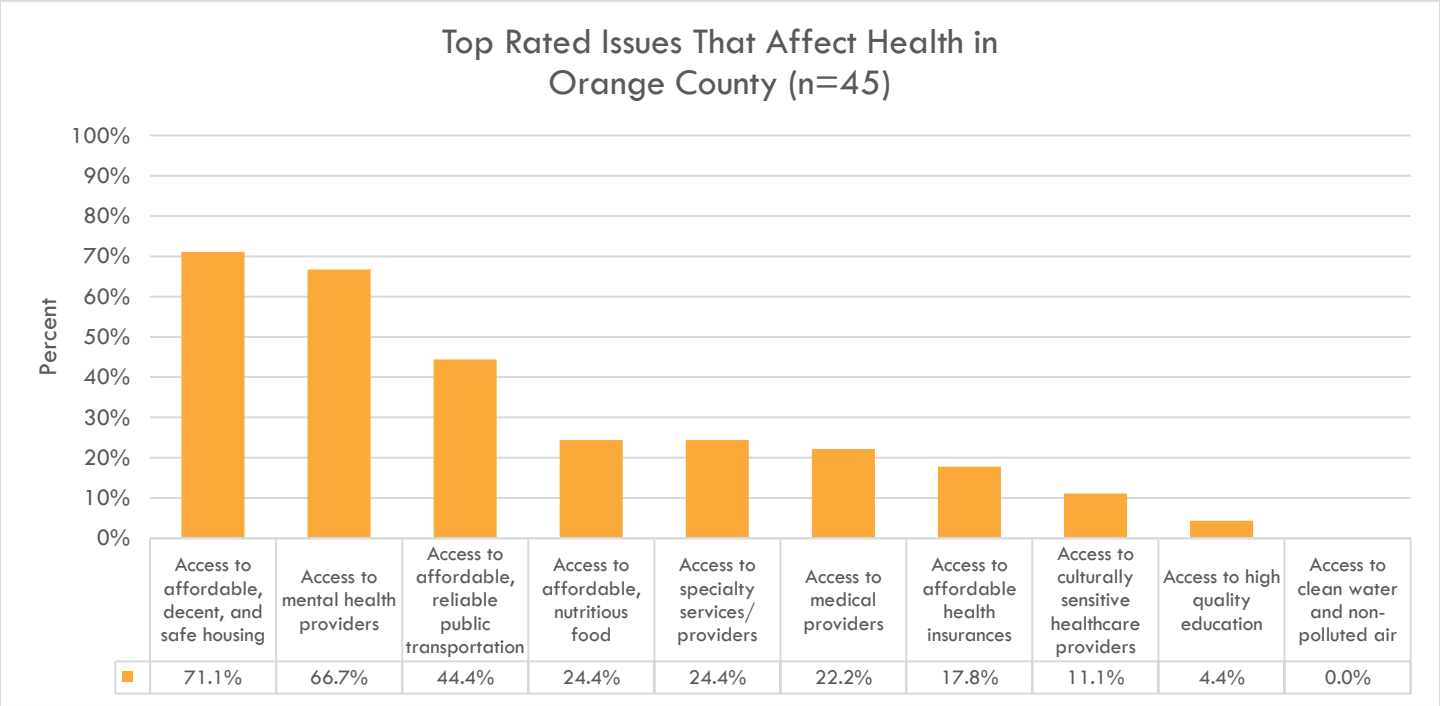
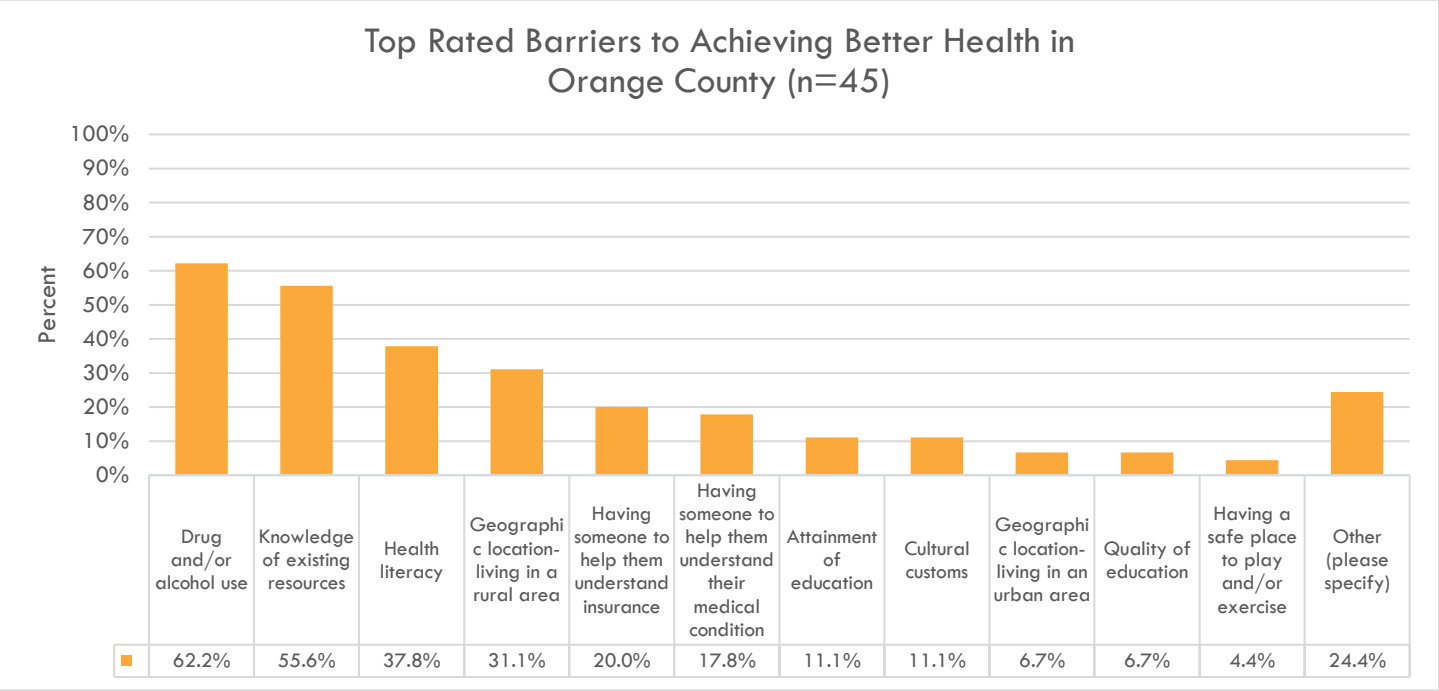


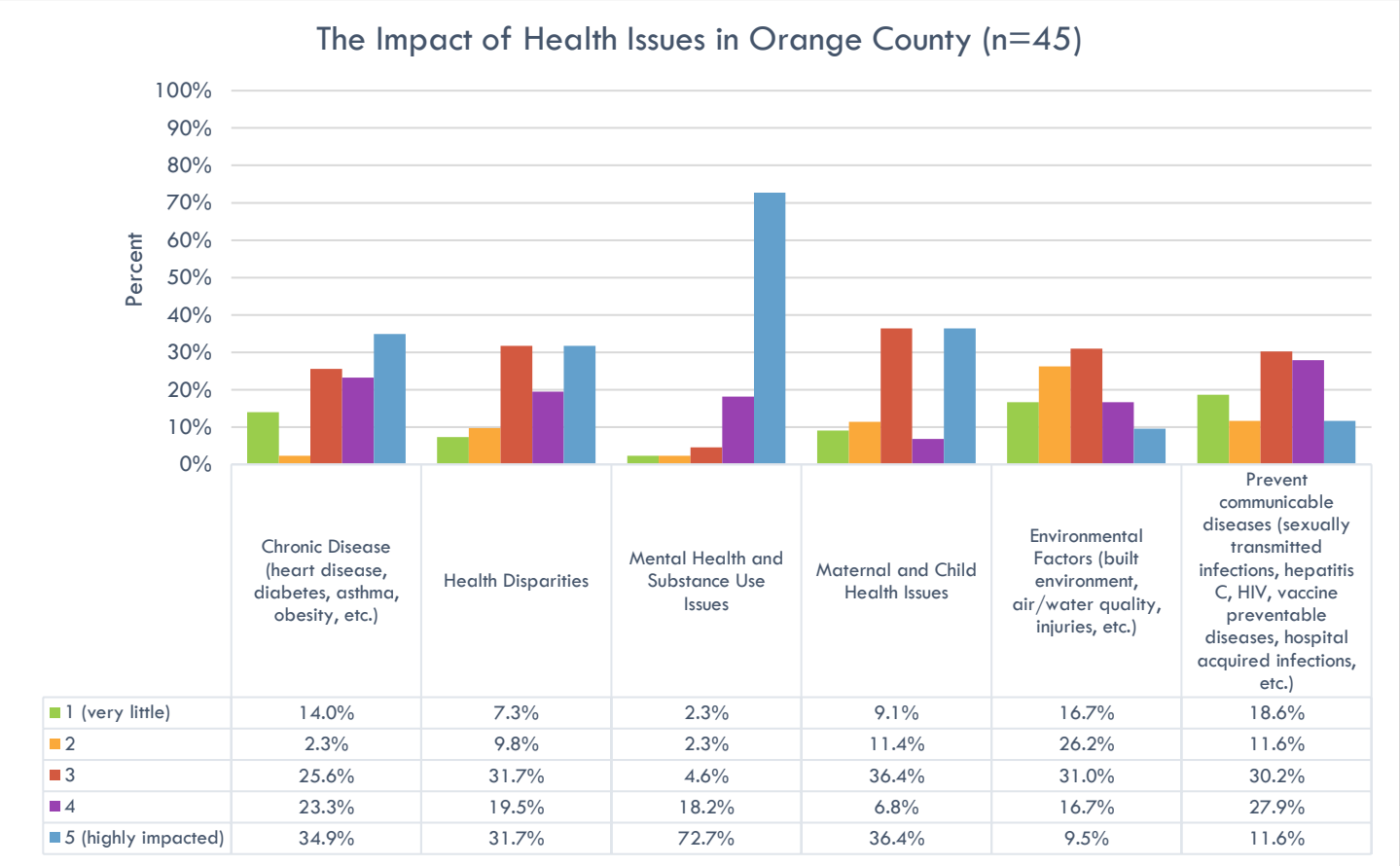
Figure 141



	Drug and/or alcohol use	Knowledge of existing resources	Health literacy	Geographic location-living in a rural area	Having someone to help them understand insurance	Having someone to help them understand their medical condition	Attainment of education	Cultural customs	Geographic location-living in an urban area	Quality of education	Having a safe place to play and/or exercise	Other (please specify)
	62.2%	55.6%	37.8%	31.1%	20.0%	17.8%	11.1%	11.1%	6.7%	6.7%	4.4%	24.4%

**Other (please specify): Some additional responses from participants include location of services, lack of financial resources, transportation, affordable housing, and service providers not being aware of biases they bring into marginalized communities.*

Figure 142



	Chronic Disease (heart disease, diabetes, asthma, obesity, etc.)	Health Disparities	Mental Health and Substance Use Issues	Maternal and Child Health Issues	Environmental Factors (built environment, air/water quality, injuries, etc.)	Prevent communicable diseases (sexually transmitted infections, hepatitis C, HIV, vaccine preventable diseases, hospital acquired infections, etc.)
1 (very little)	14.0%	7.3%	2.3%	9.1%	16.7%	18.6%
2	2.3%	9.8%	2.3%	11.4%	26.2%	11.6%
3	25.6%	31.7%	4.6%	36.4%	31.0%	30.2%
4	23.3%	19.5%	18.2%	6.8%	16.7%	27.9%
5 (highly impacted)	34.9%	31.7%	72.7%	36.4%	9.5%	11.6%

PUTNAM COUNTY

Putnam County elected to develop an alternative community partner survey instrument to allow for the categorization of population health resources based on the framework of the New York State Prevention Agenda (NYSPA). The goal of the survey was to create a comprehensive picture of the assets and resources that can and have been mobilized and employed to address the county's health issues.

The Community Partner Resources Survey was a self-administered online survey of community organizations that aimed to describe population health resources within the five priority area categories of the NYSPA: chronic disease prevention; promoting a healthy and safe environment; promoting healthy women, infants, and children; promoting well-being and preventing mental and substance use disorders; and prevention of communicable diseases.[97] Within each priority area, the NYSPA identifies focus areas and goals. Organizations were asked to identify which focus areas and goals their programs and activities aim to achieve. For the purpose of this report, each focus area cited by a respondent organization is defined as a resource in that priority area. A free response option was provided to indicate a program/activity goal that may not be aligned with the NYSPA. The survey also collected information on populations served and current program status related to COVID-19 impacts.

The survey was created using survey software, © 2021 Alchemer, and disseminated via email to a distribution list created from the Putnam County Department of Health (PCDOH) communications directory. Organizations recruited for participation included for-profit, not-for-profit, local government agencies, federally qualified health centers (FQHC), the local hospital center, and other healthcare and social services organizations. Respondent organizations met the following criteria for inclusion: location in Putnam County, primarily serve and offer programs and activities to Putnam County residents or have services and resources that are open to and are well-promoted to Putnam County residents. 74 organizations were solicited to complete the survey, including healthcare providing organizations (skilled nursing facilities, voluntary health organizations, FQHC, and the hospital), educational organizations, private sector businesses, local government agencies, and other non-profits (food pantries, professional associations, volunteer service organizations, public clinics, and social advocacy groups).[98] 32 of the solicited organizations completed the survey for a response rate of 43.24%

MAJOR FINDINGS

- Services exist for all segments of the population amongst respondent organizations. Services for adults, the general population, and adolescent populations were most common. Services specifically for women, incarcerated or recently incarcerated, and men were least common.
- To better understand the impacts of the COVID-19 pandemic on the provision of population health services, organizations were queried about the status of programs. No organizations responded that all programs are presently completely suspended due to the COVID-19 pandemic and 36% have all programs meeting in person at pre-pandemic frequency and attendance. However, 69% of respondents still have some programs meeting online rather than in person, 46% have some programs meeting in person at decreased frequency, and 41% are meeting in person with attendance limits.

[97] New York State Department of Health, 2020, https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/index.htm, accessed June 2022

[98] Voluntary Health Organization are classified as an organization that a community member must go to voluntarily (without a court order, prescription, etc.) to receive treatment for their condition.

- The focus areas with the most resources by priority area are:
  - Preventing Chronic Disease, 22 organizations with 45 resources
    - Healthy eating and food security, 16 resources, 36%
  - Promote a Healthy and Safe Environment, 8 organizations with 12 resources
    - Injuries, violence, and occupation health, 4 resources, 33%
  - Promote Healthy Women, Infants, and Children, 11 organizations with 19 resources
    - Child and adolescent health, 8 resources, 42%
  - Promote Well-being and Prevent Mental and Substance Use Disorders, 19 organizations with 30 resources
    - Promote well-being, 16 resources, 53%
  - Prevent Communicable Diseases, 11 organizations with 27 resources
    - Vaccine-preventable diseases, 10 resources 37%

SPECIFIC RECOMMENDATIONS

- The results of this survey are a necessary first step in identifying potential gaps in resources and should be used in tandem with other county-specific assessments, and the M-H Region Community Health Assessment (CHA). Follow up with partner organizations should aim to assess where additional capacity is needed.
- Responses to questions regarding the status of population health programs indicate that while some programs have returned to their pre-pandemic status, in some cases changes made due to COVID-19 safety guidelines have endured beyond the end of mandates. Community organizations should continuously solicit feedback from their populations served to ensure that population health services are meeting their needs in their current form.
- Perhaps the greatest utility of this survey will be to act as a directory of available resources during community health improvement planning to align health problems with appropriate organizations.

Figure 143

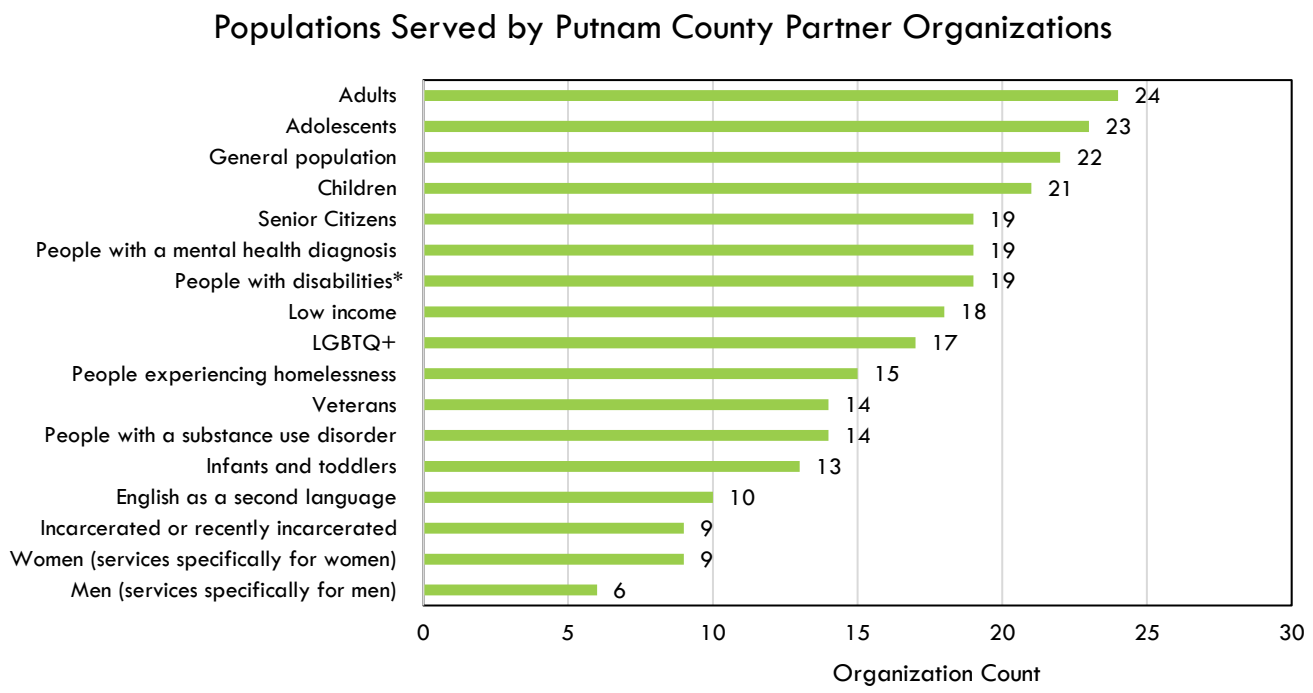


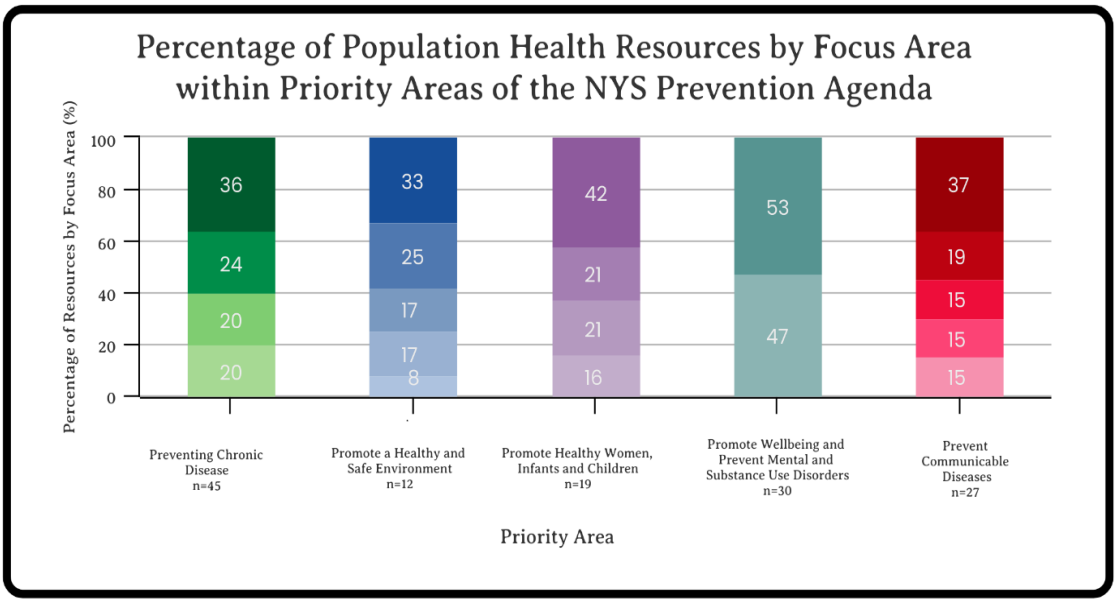
Table 35

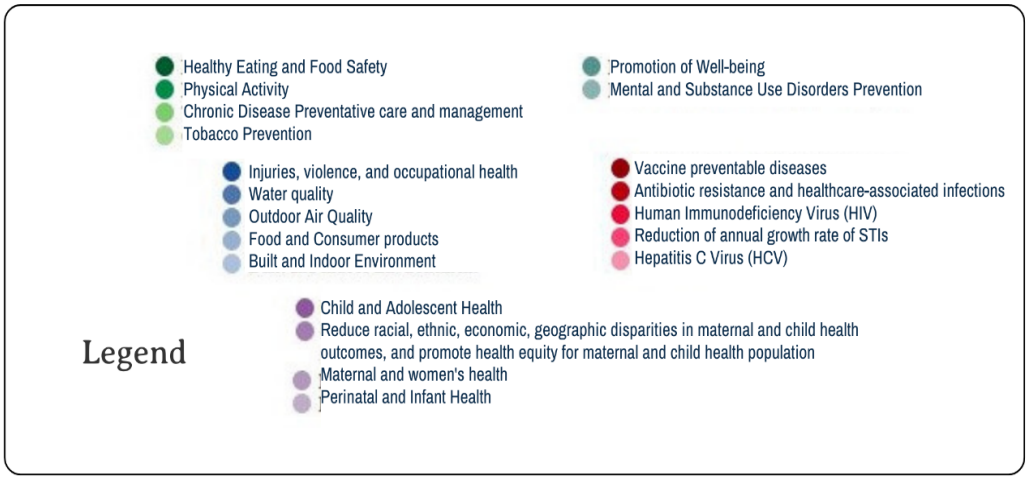
COVID-19 Influenced Program Modifications	All	Some	None
Programs are suspended	0.0%	25.0%	75.0%
Programs have moved from in-person to online	4.0%	69.0%	27.0%
Programs are meeting in person but with decreased frequency	0.0%	46.0%	54.0%
Programs are meeting in person but with limits to attendance	0.0%	41.0%	59.0%
Programs are meeting in person at pre-pandemic frequency and attendance	36.0%	40.0%	24.0%

Table 36

Priority Area	Organizations with Programs or Activities	
	Count	Percent
Preventing Chronic Disease	22	71%
Promote Wellbeing and Prevent Mental and Substance Use Disorders	19	63%
Promote Healthy Women, Infants, and Children	11	37%
Prevent Communicable Diseases	11	37%
Promote a Healthy and Safe Environment	8	27%

Figure 144


Percentage of Population Health Resources by Focus Area within Priority Areas of the NYS Prevention Agenda
Percentage of Resources by Focus Area (%)
100
80
60
40
20
0
36
24
20
20
33
25
17
17
8
42
21
21
16
53
47
37
19
15
15
15
Preventing Chronic Disease n=45
Promote a Healthy and Safe Environment n=12
Promote Healthy Women, Infants and Children n=19
Promote Wellbeing and Prevent Mental and Substance Use Disorders n=30
Prevent Communicable Diseases n=27
Priority Area


Legend
Healthy Eating and Food Safety
Physical Activity
Chronic Disease Preventative care and management
Tobacco Prevention
Promotion of Well-being
Mental and Substance Use Disorders Prevention
Injuries, violence, and occupational health
Water quality
Outdoor Air Quality
Food and Consumer products
Built and Indoor Environment
Vaccine preventable diseases
Antibiotic resistance and healthcare-associated infections
Human Immunodeficiency Virus (HIV)
Reduction of annual growth rate of STIs
Hepatitis C Virus (HCV)
Child and Adolescent Health
Reduce racial, ethnic, economic, geographic disparities in maternal and child health outcomes, and promote health equity for maternal and child health population
Maternal and women's health
Perinatal and Infant Health

ROCKLAND COUNTY

In Rockland County, 26 survey responses were collected from community service providers that are engaged with various at-risk populations such as persons experiencing homelessness, persons with disabilities, persons with a mental health diagnosis, persons with substance use disorders, veterans, seniors, non-English speakers, and low-income individuals [see Appendix L]. The Rockland County Department of Health distributed the regional provider survey via the listservs of both the Haverstraw and Spring Valley Collaboratives, as well as among active health improvement workgroups that are focused on school health, COVID-19 and 2022 polio outbreak response. Respondents included members of government agencies (RC Dept of Mental Health, RC Dept of Health, RC Dept of Social Services), health care organizations (Good Samaritan Hospital, Sun River Health, Fidelis Care), primary and secondary education (Rockland Community College, East Ramapo Central School District, Mount Saint Mary College), advocacy groups (Hudson Valley Community Services, NAACP, American Lung Association), religious groups (All Souls Community Church), non-profits (Hudson Valley Adoption Services, Meals on Wheels of Rockland, Regional Economic Community Action Program), and others.

The results showed that the top three issues that affect health in Rockland County were [see Figure 145]:

1) Access to affordable, decent, and safe housing
2) Access to mental health providers
3) Access to affordable, nutritious food

The survey also showed that the top three barriers to people achieving better health in Rockland County were [see Figure 146]:

1) Knowledge of existing resources
2) Drug and/or alcohol use
3) Health literacy

Issues highly impacting health in the communities as listed by the providers include mental health and substance use issues, chronic diseases, and widening health disparities in some communities [see Figure 147]. The survey provided an opportunity for agency providers to expand upon these issues and barriers. Additionally, they were asked about how the COVID-19 pandemic has impacted the well-being of their clients and the effectiveness of the services they provide.

MAJOR FINDINGS

- There is a lack of information being disseminated about public transportation services, and a transportation system that is limited and unreliable.
- Not enough mental health providers or programs are available locally, and even fewer are offering critical services during evenings and weekends.
- The lack of affordable housing in Rockland remains a serious concern. Large portions of residents may be spending over 50% of their income simply on housing.
- Lack of cultural competency at all levels is acting as a barrier which is deterring vulnerable populations from seeking available services.
- People within the LGBTQIA+ community often fear discrimination or erasure when accessing medical care which can be a deterrent to seeking care that contributes to higher rates of preventable illness.

- Residents are unaware of the multiple community resources available in Rockland; improvements are needed in the marketing of current or future opportunities to increase awareness and program effectiveness.
- Providers also struggle to maintain a current understanding of which resources are available for referral, which organizations still have funding, and the type of services are offered.
- Health insurance is lacking in certain communities, which reduces access to care. Even Medicaid can be challenging because not all providers accept it, particularly mental health providers.
- Health literacy is a growing issue in various communities. Some educational settings are resistant to comprehensive health education, particularly around issues like teen pregnancy and sexually transmitted infections (STIs).
- Tailored outreach is needed to address issues among ethnic and religious cultures that are slow to accept or promote preventive medicine.
- The undocumented face many difficulties in accessing clinical, mental health services and substance abuse services.
- Overwhelmed providers are doing less to educate and empower patients by taking the time to explain health care diagnoses in an understandable fashion

IMPACT OF COVID-19

- Since the beginning of 2020 there has been a noticeable decline in the number and availability of accessible health practitioners for clinical and mental health needs. Preventive service uptake fell off dramatically during the pandemic and now that COVID-19 restrictions are being lifted there is a noticeable increase in the detection of conditions that could have been identified early or avoided.
- The pandemic forced all sectors of the community to offer remote options to conduct business. Health providers now rely heavily on virtual visits and patient portals which can be convenient for some but also create barriers for others. Providers mentioned that the lack of personal interaction has been detrimental to efforts to treat the whole person. It was further noted that not all residents have the means to utilize telehealth without internet access or proper equipment.
- The intense focus on COVID-19 for more than two years allowed for an erosion of partnerships and networks that were dedicated to community health locally. Certain organizations were either closed or temporarily shuttered due to restricted funding and/or social distance regulations. There was also turn-over in staff at all levels, leaving a knowledge gap. At this time there are concerted efforts to rebuild and reinforce against the critical community-based infrastructure loss.

SPECIFIC RECOMMENDATIONS

- The extreme pressure that the COVID-19 pandemic applied to public health services exacerbated the flaws and inadequacies that previously existed throughout the system. Now that gaps have been highlighted in critical support systems, they should be appropriately addressed to improve the health outcomes.
- Telehealth options will only continue to expand, and assistance will be needed to reduce inequity and provide the associated technological requirements that allow access to services by all residents.
- The dialogue around local inequities and the cooperative efforts of inter-agency collaborations should be enhanced moving forward to rebuild the staff and institutional knowledge losses experienced as a result of the pandemic.

- Data should be collected on current local care usage and outcomes, which should be further stratified by race and ethnicity so that current issues can be identified and documented, since the public health data streams we typically rely on for assessment and improvement plans are consistently outdated by several years.

Figure 145

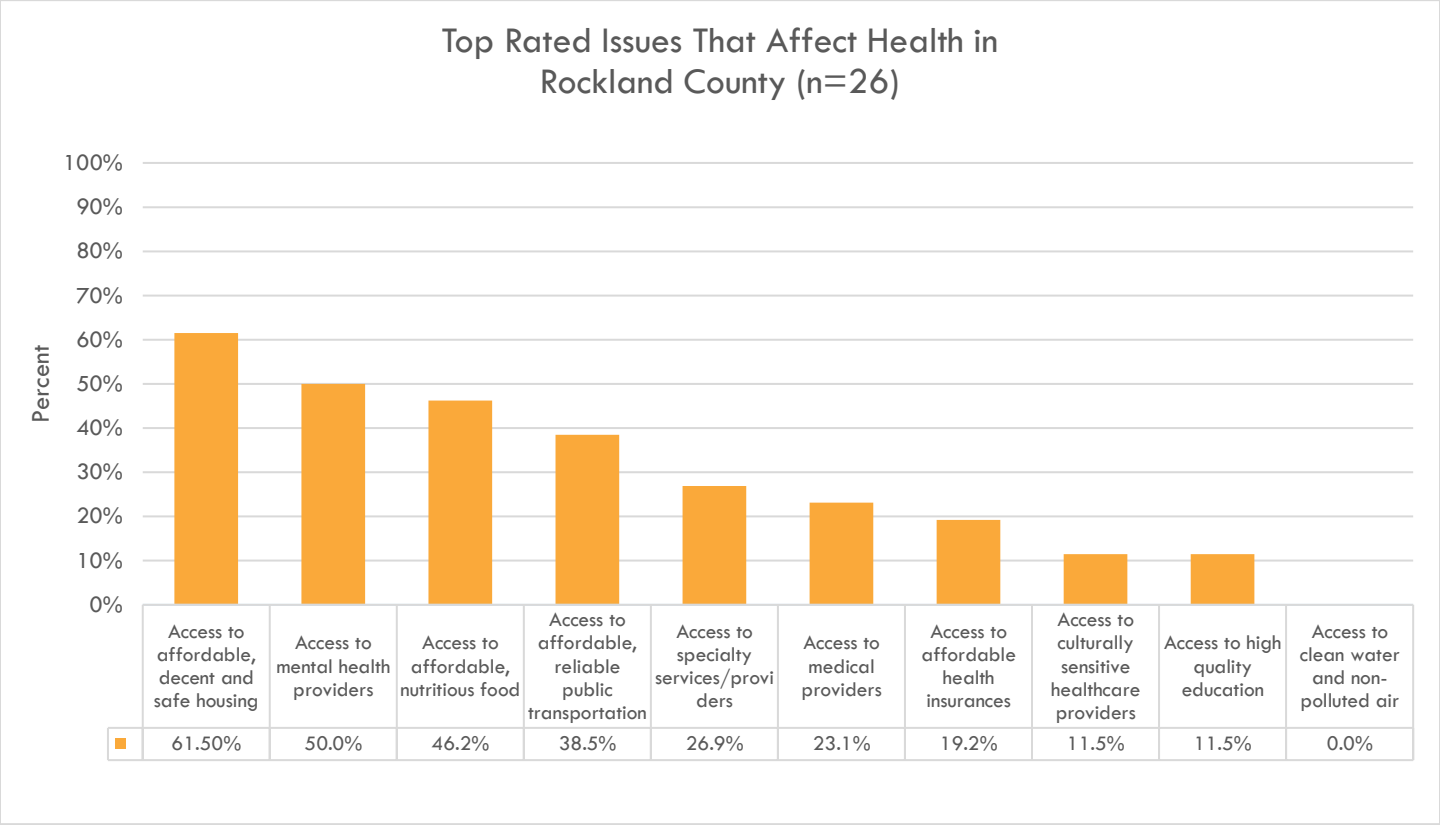
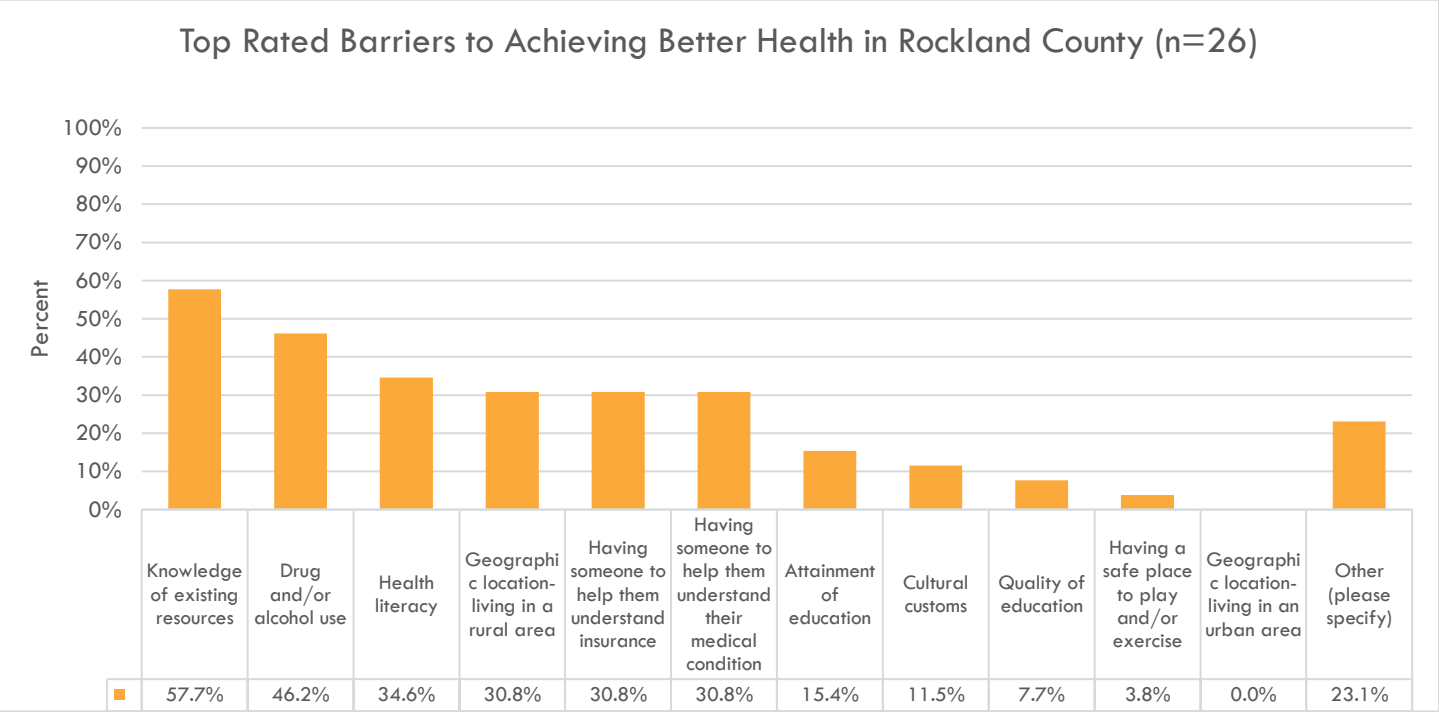
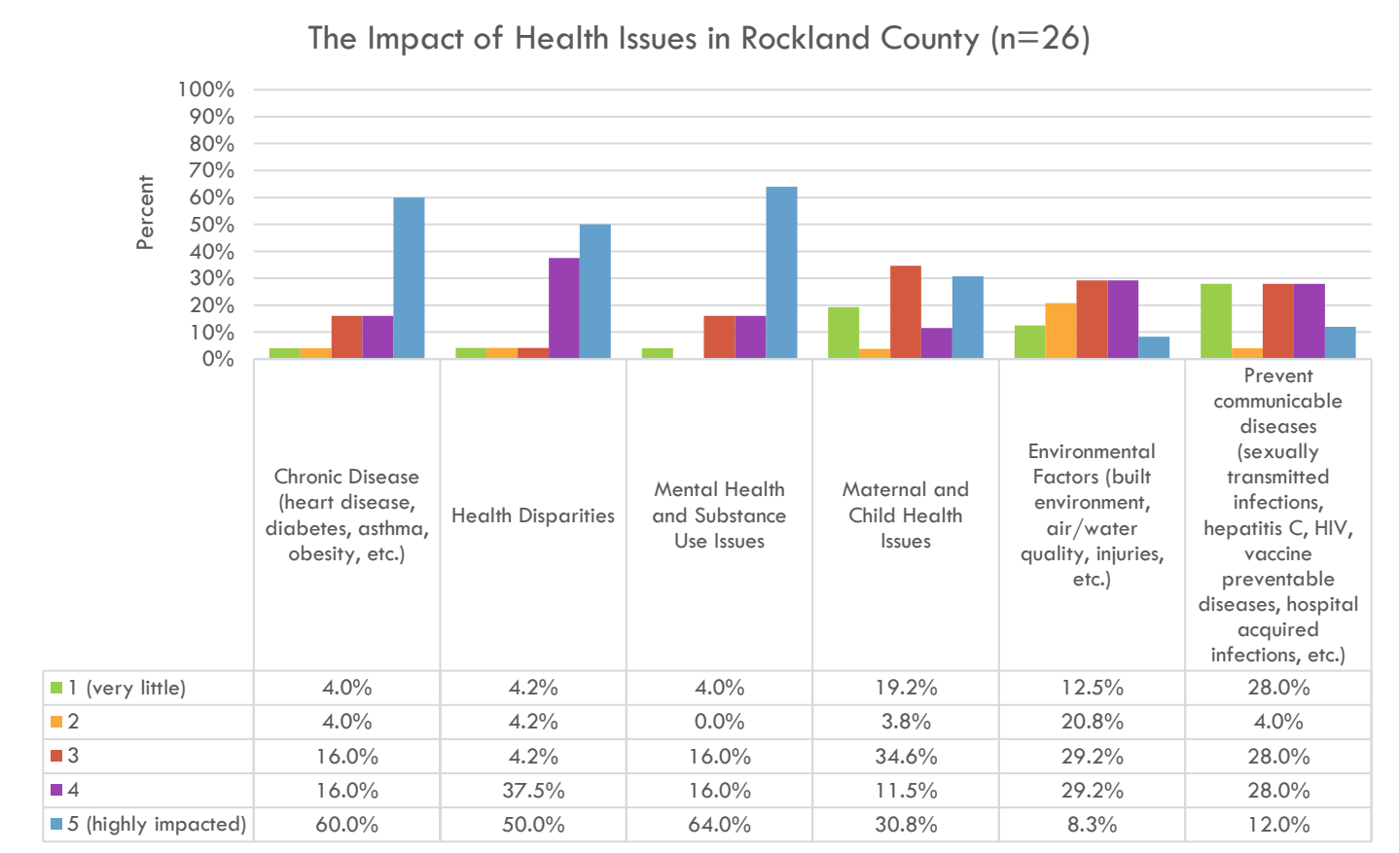


Figure 146



**Other (please specify): Some additional responses from participants include finding child care, access to health care providers who are trained in LGBTQIA+ health care needs, mental health services, immigration issues, language and cultural barriers, and financial issues.*

Figure 147



	Chronic Disease (heart disease, diabetes, asthma, obesity, etc.)	Health Disparities	Mental Health and Substance Use Issues	Maternal and Child Health Issues	Environmental Factors (built environment, air/water quality, injuries, etc.)	Prevent communicable diseases (sexually transmitted infections, hepatitis C, HIV, vaccine preventable diseases, hospital acquired infections, etc.)
1 (very little)	4.0%	4.2%	4.0%	19.2%	12.5%	28.0%
2	4.0%	4.2%	0.0%	3.8%	20.8%	4.0%
3	16.0%	4.2%	16.0%	34.6%	29.2%	28.0%
4	16.0%	37.5%	16.0%	11.5%	29.2%	28.0%
5 (highly impacted)	60.0%	50.0%	64.0%	30.8%	8.3%	12.0%

SULLIVAN COUNTY

In Sullivan County, responses were collected from providers that serve various populations [see Appendix L] through two provider surveys, one answered by service providers, and the second by health care providers. In addition, Sullivan County Public Health conducted several focus groups of community partners and residents. These focus groups were conducted with The Rural Health Network, Sullivan 180, Health Services Advisory Board, and community residents including two senior groups and a group conducted at the local community college. Many community partners participated in these focus groups to discuss the health concerns of Sullivan County.

In the service providers survey, conducted through the M-H Community Partner Survey, 20 respondents completed the survey. These providers identified the following as the top three issues that affect the health of Sullivan County residents [see Figure 148]:

1) Access to mental health providers
2) Access to affordable, decent, and safe housing
3) Access to affordable, reliable public transportation

The survey also identified that the top three barriers to people achieving better health in Sullivan County were [see Figure 149]:

1) Drug and/or alcohol use
2) Knowledge of existing resources
3) Geographic location – living in a rural area

When asked about the impact of health issues in Sullivan County, the providers identified the following as having the biggest impact on the health of the community [see Figure 150]:
1) Mental health and substance use
2) Chronic disease (heart disease, diabetes, asthma, obesity, etc.)
3) Maternal and child health issues

An additional survey, administered by Garnet Health Systems Catskills, was completed by 17 health care providers. The results of this survey identified the top issues affecting health of Sullivan County residents as:
1) Access to medical providers
2) Access to mental health providers
3) Access to affordable, reliable transportation

The top three barriers to people achieving better health in Sullivan County communities were identified as:
1) Geographic location – living in a rural area
2) Drug and/or alcohol use
3) Lack of health literacy and not having someone to help them understand their medical condition

Other issues highly impacting health of communities in Sullivan County include health disparities and communicable diseases. The focus groups gave community partners a chance to expand upon these issues and barriers.

MAJOR FINDINGS

- Lack of medical services and providers was an area of concern for focus group participants. Consolidation of medical providers into medical care organizations has left many rural areas of the county without basic medical access. Providers are leaving Sullivan County and access to specialty services requires travel out of county, which creates a barrier to access. Also, providers that remain in Sullivan County often have only have office hours during regular business hours. For those who may not be able to take time off from work, this makes accessing health care or well visits difficult.
- Transportation is also another major barrier to accessing services. While "Move Sullivan" has increased transportation options to the major hubs of Sullivan County (Monticello, Liberty, Fallsburg), access to public transportation in the more rural areas of Sullivan County remains difficult. The rising cost of gas is also affecting the ability and willingness to drive to appointments and errands for everyday items.
- The lack of affordable housing was identified by participants as a barrier to improving health in Sullivan County. Lack of affordable housing inventory due to population growth and the increasing cost of housing create economic strain for many residents. Along with the cost of housing, inflation is increasing the cost of healthy food, pharmaceuticals, health care products and services, and utilities, widening the financial and health disparity gaps already seen in Sullivan County.
- High taxes, lack of return on investment from taxes, lack of good paying jobs, and a lack of educational opportunities were all identified as barriers to health equity and better health.
- The increase in substance use, alcohol use, legalization of marijuana, suicide, and mental health issues were all identified by participants as concerns in Sullivan.
- Difficulties in hiring and retaining staff was also identified by several community partners.

SPECIFIC RECOMMENDATIONS

- Improving communication between agencies and the community to improve the knowledge of resources available to the community and find solutions that are effective and efficient.
- A single, umbrella agency to coordinate services for all residents.
- Improved access to health care by having more providers with offices in Sullivan County, not just referral services to Orange County, as well as ensuring the local hospital remains open and offers more surgeries and procedures so residents do not have to travel.
- The development of a cancer support group in Sullivan County.

Figure 148

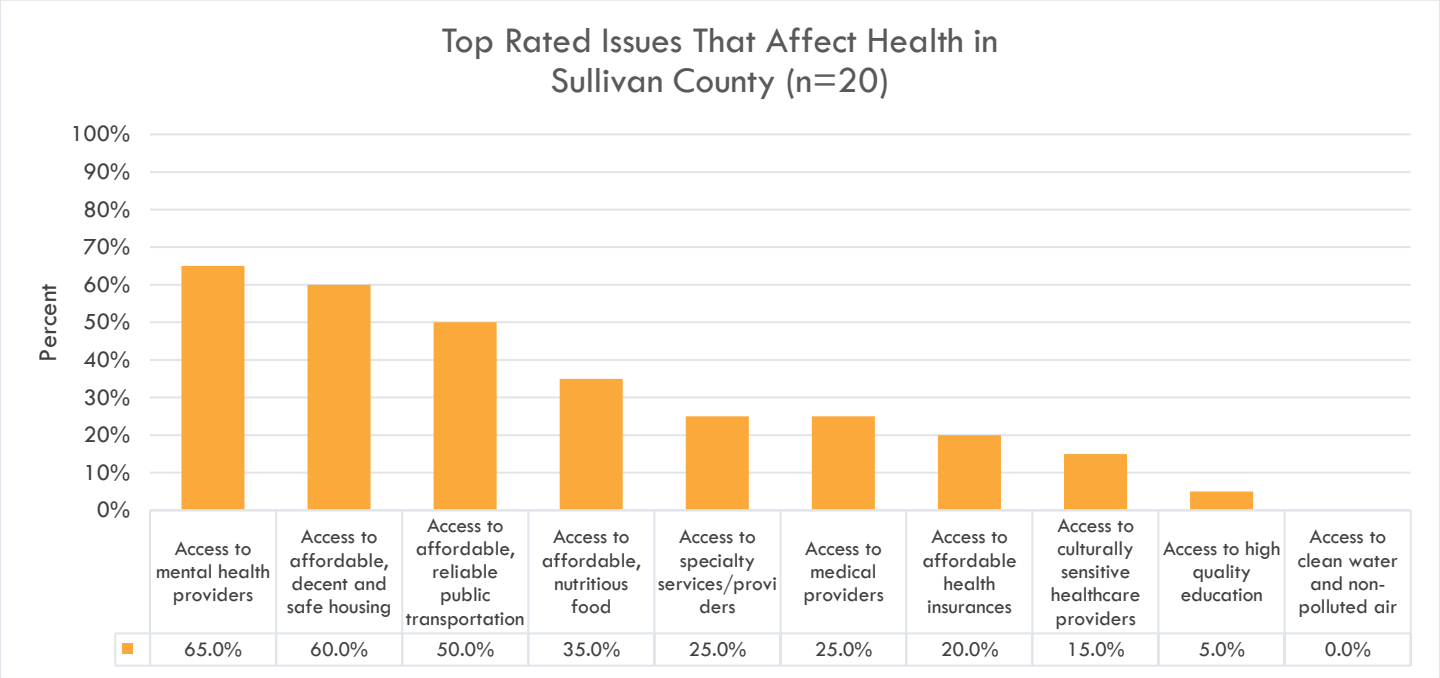
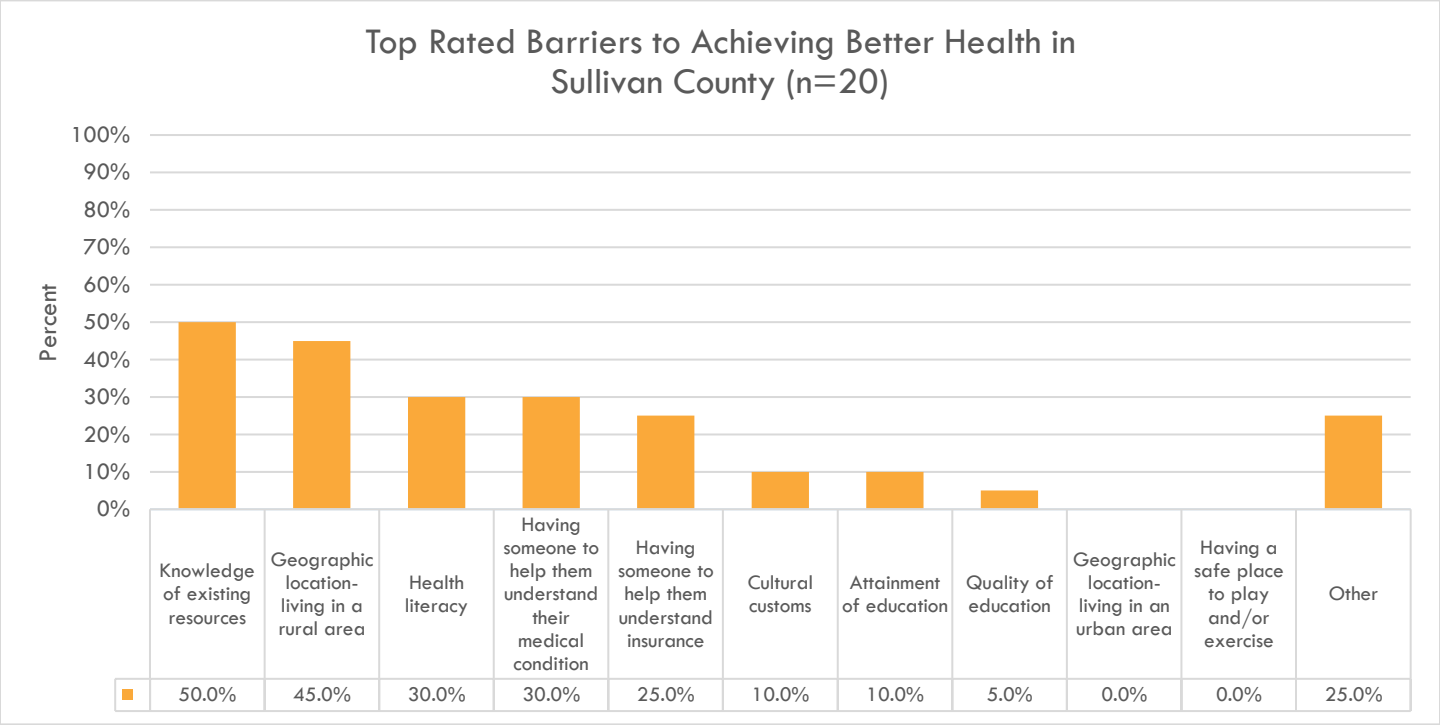
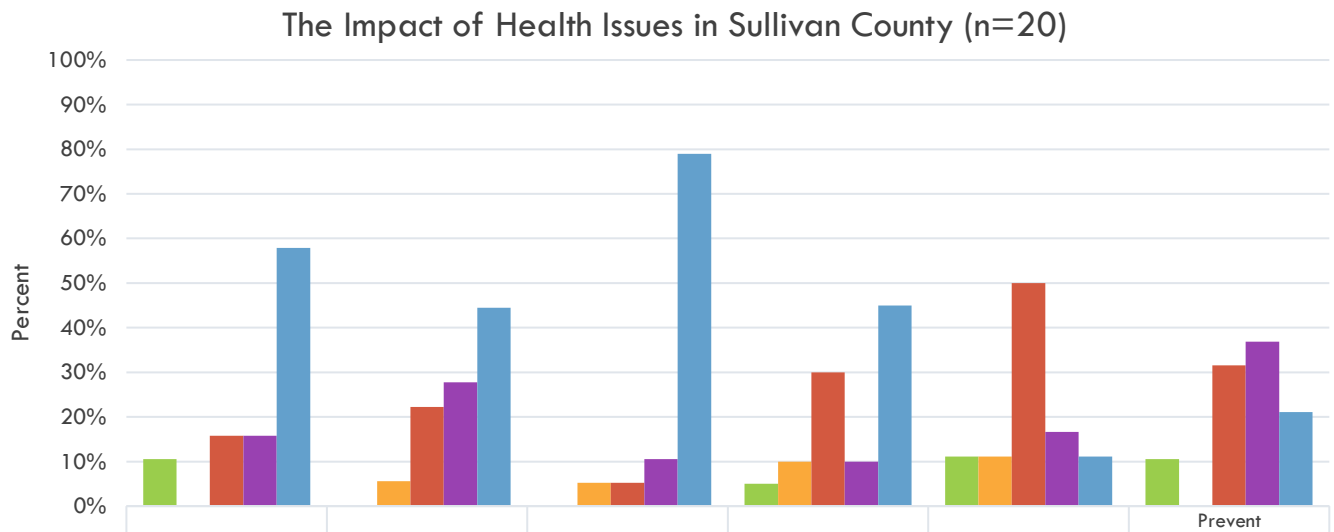


Figure 149



**Other (please specify): Some additional responses from participants include navigating health care access, poverty, affordable transportation, and accessibility and availability of quality services.*

Figure 150



	Chronic Disease (heart disease, diabetes, asthma, obesity, etc.)	Health Disparities	Mental Health and Substance Use Issues	Maternal and Child Health Issues	Environmental Factors (built environment, air/water quality, injuries, etc.)	Prevent communicable diseases (sexually transmitted infections, hepatitis C, HIV, vaccine preventable diseases, hospital acquired infections, etc.)
1 (very little)	10.5%	0.0%	0.0%	5.0%	11.1%	10.5%
2	0.0%	5.6%	5.3%	10.0%	11.1%	0.0%
3	15.8%	22.2%	5.3%	30.0%	50.0%	31.6%
4	15.8%	27.8%	10.5%	10.0%	16.7%	36.8%
5 (highly impacted)	57.9%	44.4%	78.9%	45.0%	11.1%	21.1%

ULSTER COUNTY

In Ulster County, 40 responses were collected from providers that serve various populations [see Appendix L]. The Ulster County Department of Health distributed a survey via the health and human services listservs as well as among members of the Healthy Ulster Council, which is a community meeting where organizations come together to build on existing strengths, share services with one another, and create an integrated system of chronic disease prevention. Many agencies were represented as respondents to the survey, the questions for which can be found in Appendix K.

The survey results showed that the top three issues that affect health in Ulster County were [see Figure 151]:

1) Access to affordable, decent, and safe housing
2) Access to mental health providers
3) Access to affordable, reliable public transportation

The survey also showed that the top three barriers to people achieving better health in Ulster County were [see Figure 152]:

1) Drug and/or alcohol use
2) Knowledge of existing resources
3) Geographic location – living in a rural area

Issues highly impacting health in the communities, as listed by the providers include mental health and substance use issues, chronic diseases, and health disparities [see Figure 153]. The survey provided an opportunity for agency providers to expand upon these issues and barriers.

MAJOR FINDINGS

- Providers noted affordable housing is limited, and one respondent noted that accessible housing is severely limited.
- Low availability of mental health services and providers was frequently cited, as well as lack of health literacy surrounding mental health and substance use, and clients' own mental health and substance use conditions preventing them from either knowing what resources are available or seeking help at all.
- Lack of adequate means of transportation in Ulster County. Living in a large county geographically isolates some people from getting the care that they need and the transportation to get to these services.
- Poverty, stigma, and culture were all noted as factors that affect likelihood of seeking treatment.

IMPACT OF COVID-19

- Increased need for already lacking mental health services
- Increased need for community and home-based services
- Need for remote services while at the same time lacking computer resources and/or knowledge
- Isolation and lack of social contacts and supports
- Staffing shortages causing increased problems with service access

Figure 151

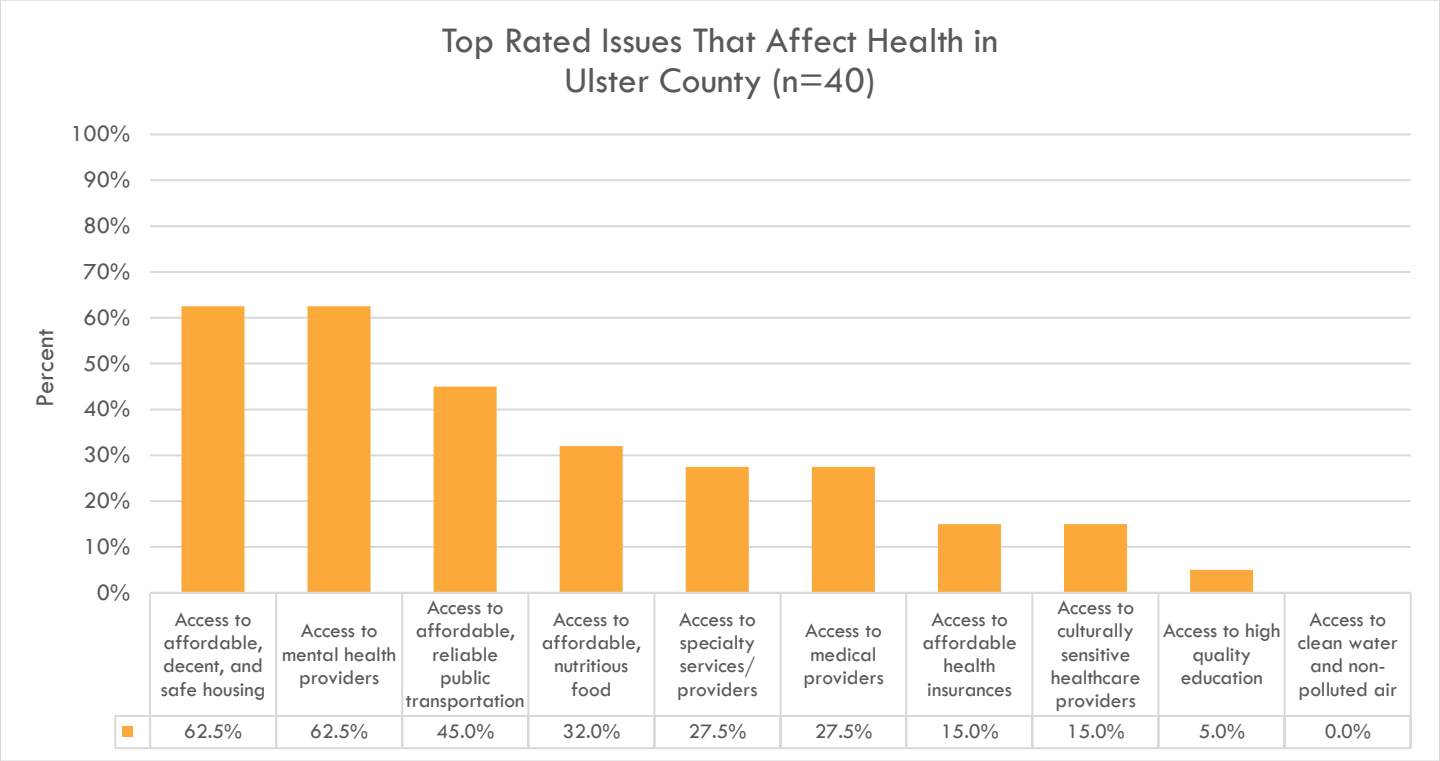
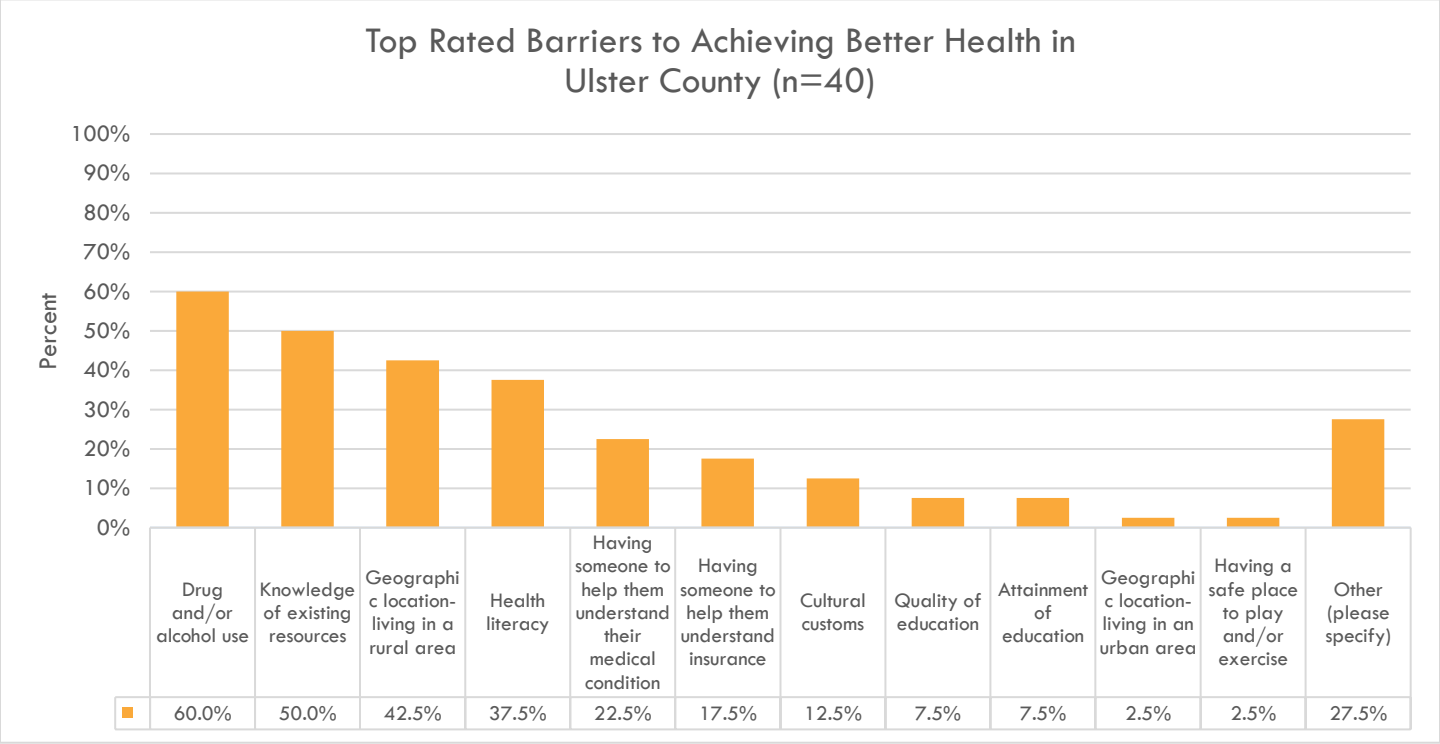
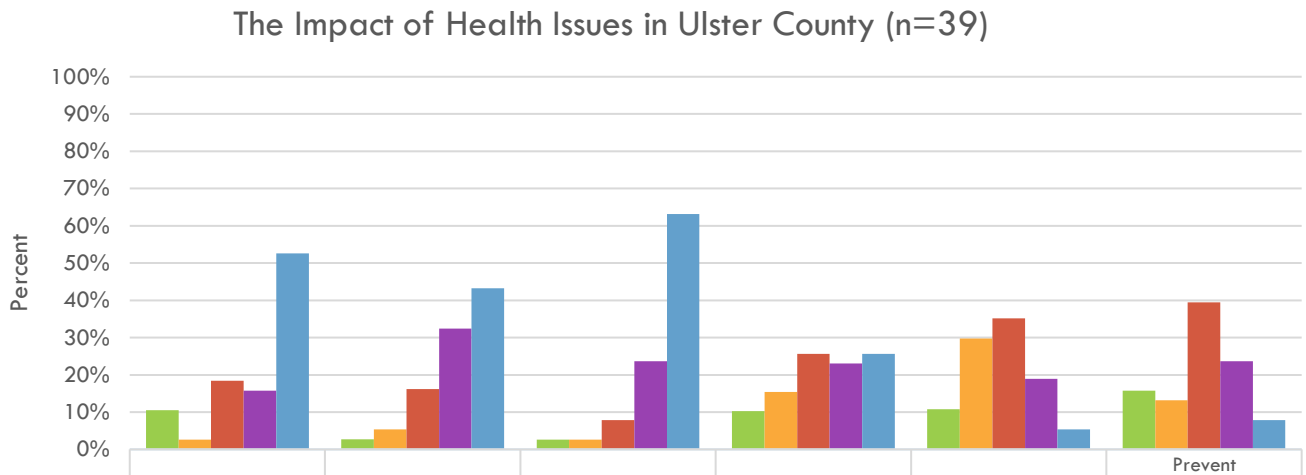


Figure 152



**Other (please specify): Some additional responses from participants include access to healthy affordable food, transportation, valuing health as a family priority, affordable housing, lack of chronic disease self-management programs, lack of social support systems, language barriers.*

Figure 153



	Chronic Disease (heart disease, diabetes, asthma, obesity, etc.)	Health Disparities	Mental Health and Substance Use Issues	Maternal and Child Health Issues	Environmental Factors (built environment, air/water quality, injuries, etc.)	Prevent communicable diseases (sexually transmitted infections, hepatitis C, HIV, vaccine preventable diseases, hospital acquired infections, etc.)
1 (very little)	10.5%	2.7%	2.6%	10.3%	10.8%	15.8%
2	2.6%	5.4%	2.6%	15.4%	29.7%	13.2%
3	18.4%	16.2%	7.9%	25.6%	35.1%	39.5%
4	15.8%	32.4%	23.7%	23.1%	18.9%	23.7%
5 (highly impacted)	52.6%	43.2%	63.2%	25.6%	5.4%	7.9%

WESTCHESTER COUNTY

From the Hudson Valley Regional Community Service Provider Surveys, responses were collected from 18 providers located in Westchester County. Those providers identified several issues that affect health in Westchester, including:

- Access to affordable, decent, and safe housing
- Access to mental health providers
- Access to affordable, nutritious food
- Access to affordable, reliable public transportation

The respondents also acknowledged barriers to people achieving better health in Westchester County, among them, the top three includes:

- Drug and/or alcohol use
- Geographic location – living in a rural area
- Having someone to help them understand their medical condition

When asked about the issues impacting and/or highly impacting the health status in Westchester communities, these respondents suggested that chronic diseases (such as heart disease, diabetes, asthma, obesity, etc.), mental health and substance use issues, and health disparities are the top three issues currently affecting the communities.

MAJOR FINDINGS

Although an affluent county in general, there are pockets of neighborhoods in Westchester County where residents have limited access to affordable, decent, and safe housing, affordable nutritious food, and affordable and reliable public transportation. Such major socioeconomic disadvantages are major issues affecting people's health status.

In addition to underservice due to major socioeconomic disadvantages, people living in rural areas could feel isolated and far away from easily accessible care. People from immigrant families, people with limited health care literacy, and people who have complicated health problems could encounter major difficulties while obtaining necessary care due to language barriers, the complexity of current health care and health insurance infrastructure, and/or the severity of their medical conditions.

Another emerging and serious health issue is drug and/or alcohol use among residents, which was acknowledged among most of the providers who responded to the surveys. Substance use is not only a serious health problem among those who are suffering, it also burdens the already strained mental health care infrastructure and further increases the limitations of access to care. Over half of the respondents listed "access to mental health providers" as a top-rated issue that affects health in Westchester, more than sixty percent of the respondents listed "drug and/or alcohol use" as a top-rated barrier to achieving better health in the county, and almost ninety percent of the respondents identified "mental health and substance use" as one of the major issues impacting and/or highly impacting the health status of Westchester residents.

SPECIFIC RECOMMENDATIONS

Based on data collected from the 18 community care providers, three major areas need to be addressed in future health care and community services:

1) Mental health and substance use issues – 88.2% listed it as one of the major issues impacting and/or highly impacting the health status of Westchester residents (with 58.8% listed it as highly impacting and 29.4% listed it as impacting)
2) Health disparities – 81.3% listed it as one of the major issues impacting and/or highly impacting the health status of Westchester residents (with 50.0% listed it as highly impacting and 31.3% listed it as impacting)
3) Chronic disease (heart disease, diabetes, asthma, obesity, etc.) – 76.5% listed it as one of the major issues impacting and/or highly impacting the health status of Westchester residents (with 64.7% listed it as highly impacting and 11.8% listed it as impacting)

Given the complexity of Westchester County's geographic, demographic, and socioeconomic compositions, a collection of 18 respondents from the large pool of health care and community service providers existing in the county can by no means present a thorough picture of current health status and service needs of people residing in Westchester. Therefore, the findings and recommendations presented in this section are suggestive and only shed some lights on the possibly more complicated issues to be addressed.

Figure 154

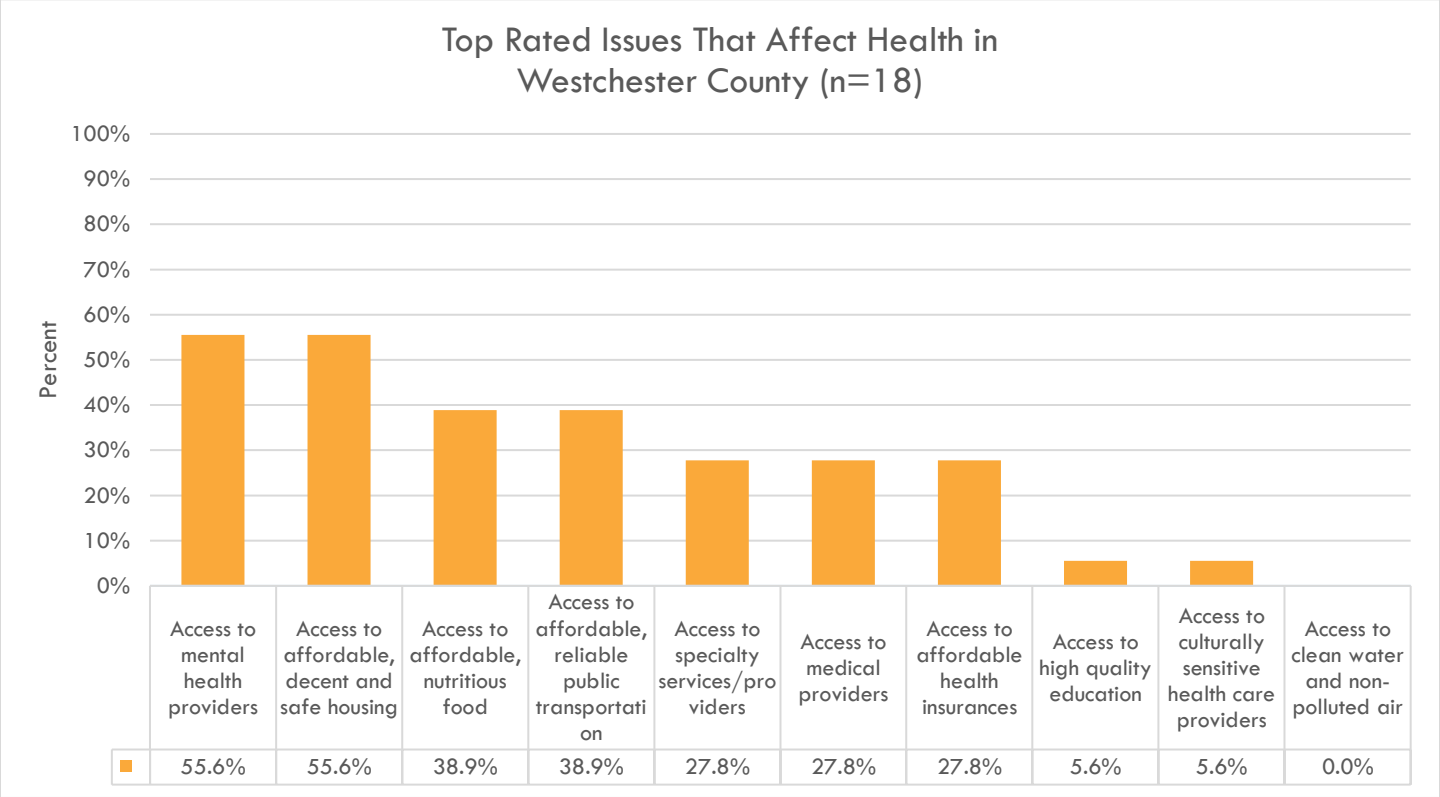
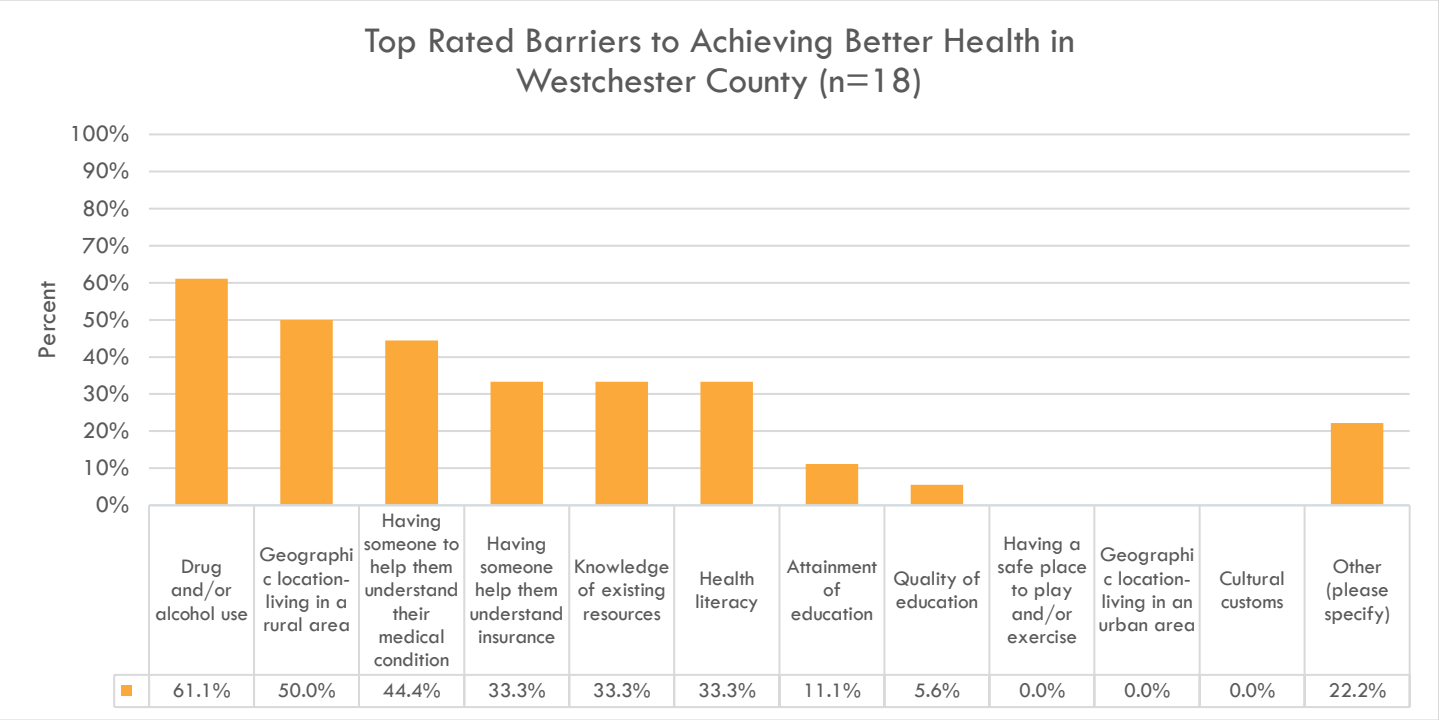


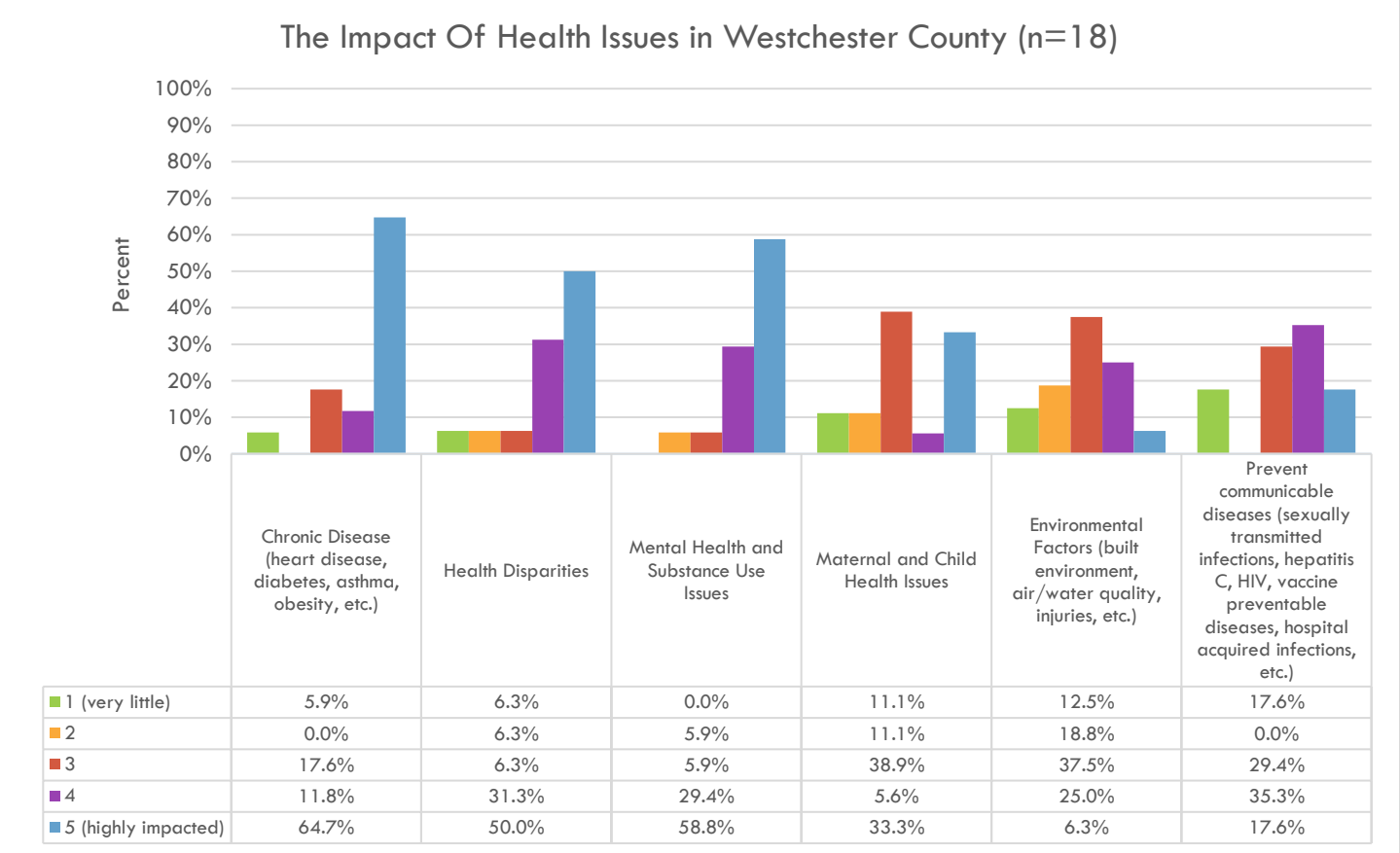
Figure 155



	Drug and/or alcohol use	Geographic location-living in a rural area	Having someone to help them understand their medical condition	Having someone help them understand insurance	Knowledge of existing resources	Health literacy	Attainment of education	Quality of education	Having a safe place to play and/or exercise	Geographic location-living in an urban area	Cultural customs	Other (please specify)
	61.1%	50.0%	44.4%	33.3%	33.3%	33.3%	11.1%	5.6%	0.0%	0.0%	0.0%	22.2%

**Other (please specify): Some additional responses from participants include stigma, language barrier as a large portion of the population being served speaks Spanish, navigating the health system, and places to play and/or exercise.*

Figure 156



	Chronic Disease (heart disease, diabetes, asthma, obesity, etc.)	Health Disparities	Mental Health and Substance Use Issues	Maternal and Child Health Issues	Environmental Factors (built environment, air/water quality, injuries, etc.)	Prevent communicable diseases (sexually transmitted infections, hepatitis C, HIV, vaccine preventable diseases, hospital acquired infections, etc.)
1 (very little)	5.9%	6.3%	0.0%	11.1%	12.5%	17.6%
2	0.0%	6.3%	5.9%	11.1%	18.8%	0.0%
3	17.6%	6.3%	5.9%	38.9%	37.5%	29.4%
4	11.8%	31.3%	29.4%	5.6%	25.0%	35.3%
5 (highly impacted)	64.7%	50.0%	58.8%	33.3%	6.3%	17.6%

UNITED NATIONS DECADE OF HEALTHY AGEING 2021-2030

The *United Nations (UN) Decade of Healthy Ageing, 2021*-2030 is the World Health Organization's (WHO) current initiative on aging. This global collaboration brings together various agencies, including but not limited to governments, civil society, academia, and private sector, to "improve the lives of older people, their families, and the communities in which they live."[99]

The UN Decade of Healthy Ageing initiative is intended to foster the health, well-being, and inclusion of older people everywhere. Older people's leadership is crucial to the initiative, and their voices must be uplifted by those around them, including caregivers, policy makers, and younger generations.[100]

"Nothing about us without us." -James Charlton

As people live longer, society can benefit from older people's experience, wisdom, skills, and knowledge. The UN Decade of Healthy Ageing 2021-2030 initiative highlights four action areas including age-friendly environments, combating ageism, integrated care, and long-term care.

Source: Decade of Healthy Ageing, The Platform, https://www.decadeofhealthyageing.org/home, accessed August 2022

AGE-FRIENDLY ENVIRONMENTS

Age-friendly environments can be achieved by constructing social and physical environments in ways that are conducive to the health of older people. In the previous Mid-Hudson Region Community Health Assessment 2019-

[99] World Health Organization, UN Decade of Healthy Ageing, 2022, https://www.who.int/initiatives/decade-of-healthy-ageing, accessed August 2022

[100] YouTube, Enabling Knowledge for Healthy Ageing: Launching the UN Decade of Healthy Ageing Platform, 2021, https://www.youtube.com/watch?v=clZJh9jpLFY&t=2127s, accessed August 2022

2021, the Eight Domains of Livability created by WHO and American Association of Retired Persons (AARP) were highlighted.

The Eight Domains of Livability provided a framework on how to make communities livable for people of all ages. Domains included outdoor spaces and buildings; transportation, respect and social inclusion, housing, communication and information, civic participation and employment, community support and health services, and social participation.[101] Key ways to make all communities age-friendly include ensuring outdoor spaces and buildings are safe, clean, and promote older people to pursue a more active lifestyle; providing ample transportation options, including public and community transportation for older populations to get to medical appointments and grocery stores; providing safe, affordable housing options for older populations; hosting age-friendly social, cultural and spiritual events for older people to participate in; involving older adults in the activities of the community, and socially engage them in a way where they are respected, included, and valued; offering a multitude of opportunities for older people to contribute to society after retirement, including volunteer and paid work, and remaining engaged in political processes;[102] disseminating information through a variety of means that will reach all populations, including traditional print and broadcast methods; and securing accessible and affordable health care.

COMBATING AGEISM

Combating ageism is essential to ensuring healthy aging. Ageism is the discrimination of an individual or group based solely on their age.[103] Older populations are more susceptible to the negative consequences of ageism.[104] Ageism can affect how we think, feel, and act towards others and ourselves based on age and has the ability to impose powerful barriers to the development of good policies and programs for older and younger people.[105] According to the *Global Report on Ageism*, ageism can be combatted through policy and law, educational activities, and intergenerational contact interventions.[106] Policy and law can be used to address discrimination and inequality based on age and protect human rights. Educational activities help deliver knowledge and skills that enhance empathy towards others of all ages. Intergenerational contact interventions include direct and indirect contact between older and younger people, and research shows that "intergenerational contact and educational interventions are among the most effective interventions for reducing ageism against older people."[107] Refer to the *Global Report on Ageism*, linked in the footnotes, to learn more about combating ageism.

INTEGRATED CARE

[101] AARP Livable Communities, 2021, https://www.aarp.org/livable-communities/network-age-friendly-communities/info-2016/8-domains-of-livability-introduction.html, accessed August 2022

[102] World Health Organization, https://extranet.who.int/agefriendlyworld/age-friendly-practices/civic-participation-and-employment/#:~:text=Civic%20Participation%20and%20Employment%20Older%20people%20are%20an,and%20keeps%20them%20engaged%20in%20the%20political%20process, accessed August 2022

[103] Ageism, 2022, https://www.ageism.org/what-is-ageism/, accessed August 2022

[104] World Health Organization, Combatting Ageism, https://www.who.int/teams/social-determinants-of-health/demographic-change-and-healthy-ageing/combatting-ageism, accessed August 2022

[105] World Health Organization, https://www.who.int/teams/social-determinants-of-health/demographic-change-and-healthy-ageing/combatting-ageism, accessed October 2022

[106] World Health Organization, Global Report on Ageism, 2021, https://www.who.int/publications/i/item/9789240016866, accessed August 2022

[107] World Health Organization, United Nations Department of Economic and Social Affairs, United Nations Human Rights Office of the High Commissioner, UNFPA, 2021, https://www.who.int/publications/i/item/9789240020504, accessed October 2022

Integrated care for older people (ICOPE) is a continuum of care that is intended to help reorient health and social services towards a more person-centered and coordinated model of care.[108] ICOPE is important because as people age, physiological changes occur and may result in the decline of physical and mental capacities. Declines of physical and mental capacities include "visual impairment, hearing loss, cognitive decline, malnutrition, mobility loss, depressive symptoms, urinary incontinence and falls."[109] The key to supporting healthy aging for all is to enhance people's intrinsic capacity and functional ability, throughout all stages of life.[110] Health services including prevention, promotion, end-of-life care, etc., should be accessible, especially financially, to older people, everywhere. Refer to the *WHO ICOPE Handbook* "Integrated care for older people (ICOPE): guidance for person-centered assessment and pathways in primary care,"[111] for information on how to implement ICOPE.

LONG-TERM CARE

The fourth UN Decade of Healthy Ageing action area is long-term care. Many older people experience substantial declines in physical and/or mental capacities and require additional support and assistance from others, such as family or caregivers. Older people deserve access to good-quality, long-term care in order to preserve their functional ability, live with dignity, and enjoy their basic human rights. Long-term care includes management of chronic geriatric conditions, rehabilitation, palliation, promotion and preventative services, and assistive care services such as caregiving and social support for older people.[112] WHO has identified three approaches to assist countries in the development of long-term care programs that include:

- "Establishing the foundations necessary for provision of long-term care as part of universal health coverage;
- Building and maintaining a sustainable and appropriately trained workforce and supporting unpaid caregivers; and
- Ensuring the quality of long-term care."[113]

The WHO Global Network on Long-term Care[114] and The World Health Data on long-term care[115] aim to support long-term care givers in creating improved long-term care systems.

Aging is an inevitable and important process that should be celebrated in society. Healthy aging can be made possible through the *UN Decade of Healthy Ageing 2021-2030* initiative's four action areas: age-friendly environments, combating ageism, integrated care, and long-term care. Refer to their website for more information: https://www.decadeofhealthyageing.org/

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[108] World Health Organization, Ageing and Health Unit, https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health/integrated-care-for-older-people-icope, accessed August 2022

[109] World Health Organization, https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health/integrated-care-for-older-people-icope, accessed September 2022

[110] World Health Organization, Integrated care for older people (ICOPE): Guidance for person-centred assessment and pathways in primary care, https://www.who.int/publications/i/item/WHO-FWC-ALC-19.1, accessed August 2022

[111] World Health Organization, https://www.who.int/publications/i/item/WHO-FWC-ALC-19.1, accessed September 2022

[112] World Health Organization, Ageing and Health Unit, https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health/integrated-continuum-of-long-term-care, accessed August 2022

[113] World Health Organization, https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/ageing-and-health/integrated-continuum-of-long-term-care#:~:text=WHO%20has%20identified%20three%20approaches%20that%20will%20be,long-term%20care%20as%20part%20of%20universal%20health%20coverage%3B, accessed September 2022

[114] World Health Organization, Data Platform, https://platform.who.int/data/maternal-newborn-child-adolescent-ageing/ageing-data/ageing---long-term-care-for-older-people, accessed August 2022

[115] World Health Organization, Data Platform, https://platform.who.int/data/maternal-newborn-child-adolescent-ageing/ageing-data/ageing---long-term-care-for-older-people, accessed August 2022

HEALTH BEHAVIORS INDICATORS

PHYSICAL ACTIVITY

The Physical Activity Guidelines for Americans state that to attain the most health benefits from physical activity, adults need at least 150 to 300 minutes each week of moderate intensity aerobic activity, such as brisk walking or fast dancing. Adults also need at least two days of muscle-strengthening activities each week, such as lifting weights or doing pushups.[116]

Nearly 80% of adults do not meet the guidelines for both aerobic and muscle-strengthening activities. Regular physical activity can improve both health and quality of life for people of all ages and abilities. Among adults and older adults, physical activity can lower the risk of early death, coronary artery disease, high blood pressure, type 2 diabetes, falls, and depression.[117]

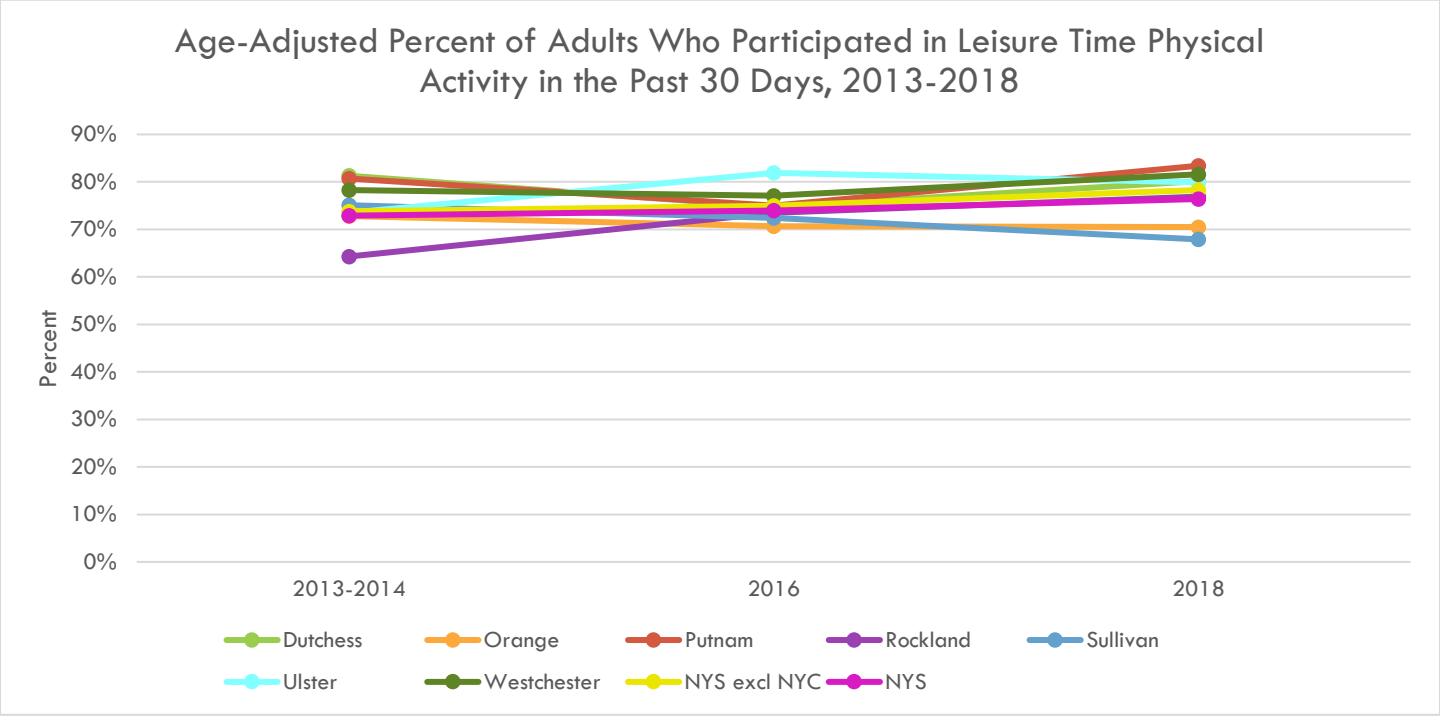
Healthy People 2030 has created objectives to reduce the proportion of adults who engage in no leisure time physical activity to 21.8%.[118] NYS excluding NYC reached this target with 21.7% of adults not participating in leisure time physical activity within the past 30 days in 2018. Putnam County had the highest percentage of adults who participated in leisure time physical activity in the past 30 days (83.4%), while Sullivan had the lowest percentage (67.9%). The percentage of adults participating in leisure time physical activity has increased since 2013 for most counties and NYS excluding NYC and NYS, with the exception of Dutchess, Orange, and Sullivan Counties, which saw slight decreases [see Figure 157].

[116] Department of Health and Human Services, 2018, https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf, accessed May 2022

[117] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/physicalactivity/basics/pa-health/index.htm, accessed October 2022

[118] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/objectives-and-data/browse-objectives/physical-activity, accessed May 2022

Figure 157



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	81.3%	72.8%	80.7%	64.3%	75.1%	73.5%	78.3%	73.8%	72.9%
2016	74.7%	70.7%	75.0%	73.5%	72.4%	81.9%	77.1%	75.0%	74.0%
2018	80.2%	70.5%	83.4%	76.9%	67.9%	79.9%	81.6%	78.3%	76.4%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

NUTRITION

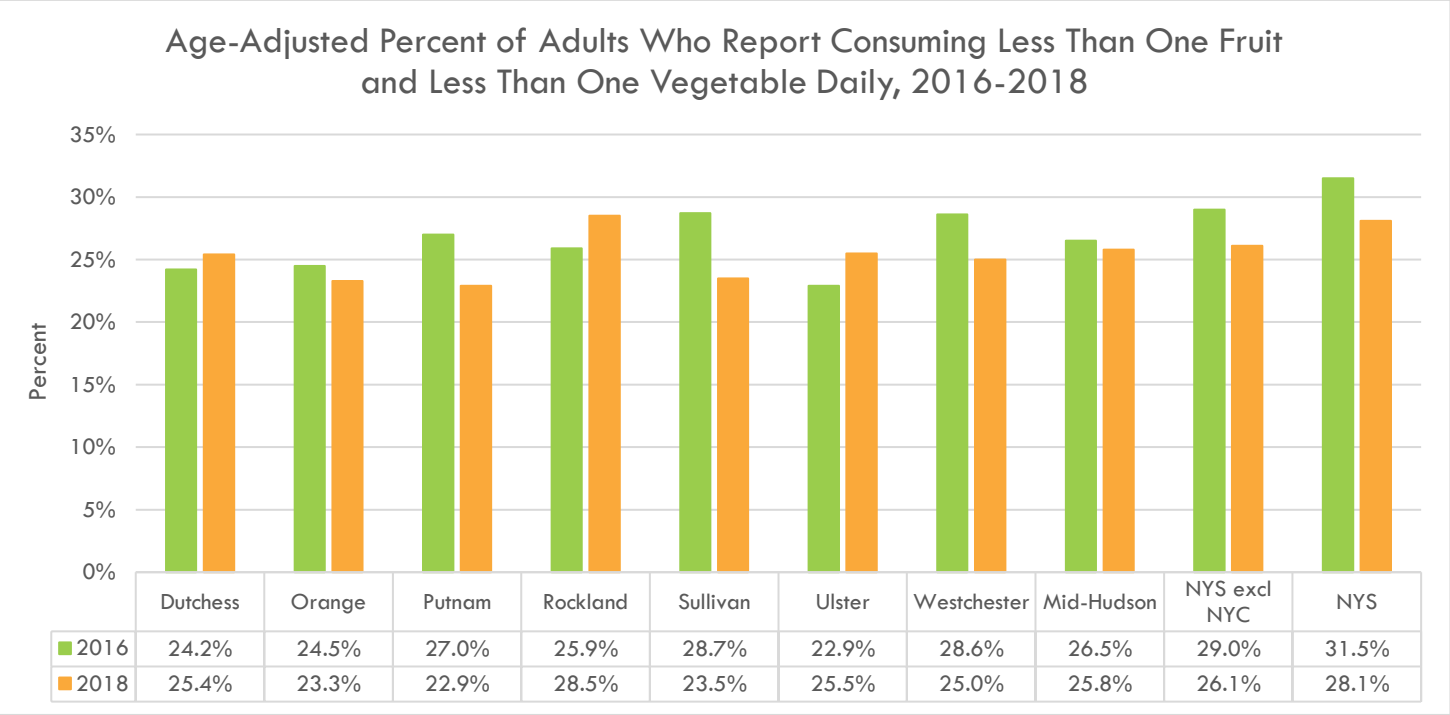
FRUIT AND VEGETABLE CONSUMPTION

Nutrition has a significant impact on health, and diet is one of the most powerful tools utilized to prevent and reduce the burden of diseases, such as high blood pressure, heart disease, and type 2 diabetes.

The *Dietary Guidelines for Americans* recommends following a healthy eating pattern across the lifespan, focusing on variety, nutrient density, and amount of food; limiting calories from added sugars and saturated fats; reducing sodium intake; shifting to healthier food and beverage choices; and supporting healthy eating patterns for all.[119] To meet these guidelines, it is important that fruits and vegetables are accessible and affordable.

The *Dietary Guidelines for Americans* recommends adults consume 1.5-2 cups of fruit and 2-3 cups of vegetables a day, yet only one in ten United States (US) adults eat this recommended amount of fruits or vegetables.[120] In 2018, 25.8% of adults in the M-H Region reported eating less than one fruit and less than one vegetable daily, which is lower than the percentage in New York State (NYS) (28.1%). Putnam County had the lowest percentage of adults who reported consuming less than one fruit and less than one vegetable a day (22.9%) and saw a decrease from 2016, while Rockland had the highest percentage (28.5%). Dutchess, Rockland, and Ulster Counties were the only counties that had an increase from 2016 to 2018, while all other counties, as well as the M-H Region, NYS, and NYS excluding NYC, had a decrease [see Figure 158].

Figure 158



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
2016	24.2%	24.5%	27.0%	25.9%	28.7%	22.9%	28.6%	26.5%	29.0%	31.5%
2018	25.4%	23.3%	22.9%	28.5%	23.5%	25.5%	25.0%	25.8%	26.1%	28.1%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

[119] Dietary Guidelines for Americans, https://www.dietaryguidelines.gov/resources/2020-2025-dietary-guidelines-online-materials/top-10-things-you-need-know-about-dietary#:~:text=To%20help%20improve%20Americans%E2%80%99%20eating%20patterns%2C%20the%20Dietary,food%20group.%203%20Pay%20attention%20to%20portion%20size, accessed September 2022

[120] Centers for Disease Control and Prevention, Lee SH, Moore LV, Park S, Harris DM, Blanck HM, 2019, http://dx.doi.org/10.15585/mmwr.mm7101a1, accessed May 2022

SUGARY BEVERAGES

Sugar-sweetened beverages are one of the main sources of added sugars in US diets. Consumption of sugar-sweetened beverages is linked to metabolic syndrome, cavities, and type 2 diabetes in adults. Foods and beverages high in calories from added sugar often provide few or no essential nutrients or dietary fiber, which therefore contribute to excess calorie intake without contributing to diet quality.[121] Intake of sugar-sweetened beverages should be limited in a varied, healthy diet.

The *Dietary Guidelines for Americans* suggests reducing added sugars in the diet by reducing the consumption of sugar-sweetened beverages. This can be accomplished by choosing beverages with no added sugars, reducing portions of sugar-sweetened beverages, drinking these beverages less often, and selecting beverages low in added sugars. In place of sugar-sweetened beverages, low-fat or fat-free milk or 100% fruit or vegetable juice can also be consumed within recommended amounts.[122]

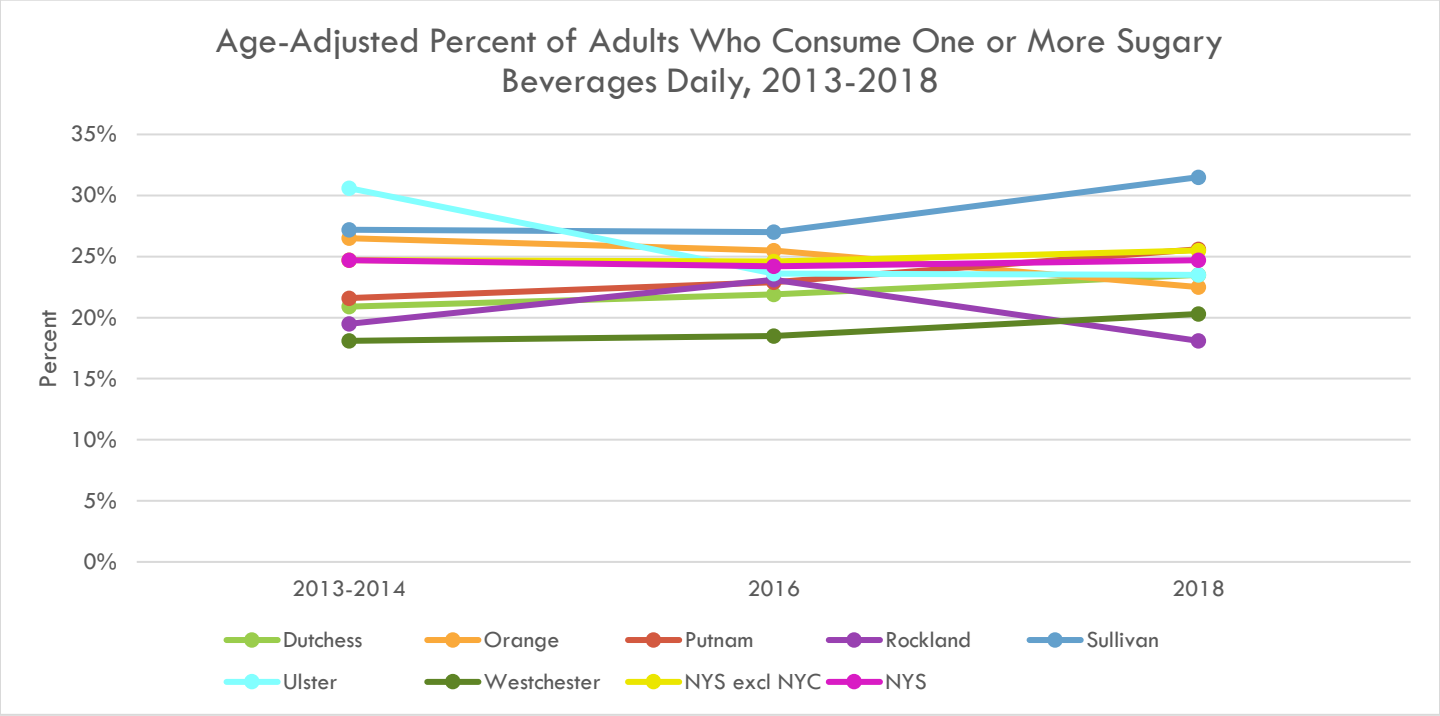
According to the NYS Department of Health (DOH), Americans consume an average of 138 calories from sugary beverages on a given day. In NYS, more than one in five adults drank at least one sugar-sweetened beverage daily in 2018.[123] This was highest in Sullivan and Putnam Counties (31.5% and 25.6%, respectively), while Rockland had the lowest percentage of adults who consumed one or more sugary drinks daily (18.1%). In the M-H Region, 22.3% of people consumed one or more sugary beverages daily. From 2013 to 2016, Dutchess, Putnam, Sullivan, and Westchester Counties saw slight increases in the percentage of adults who consumed one or more sugary beverages daily, while Orange, Rockland, and Ulster saw slight decreases [see Figure 159].

[121] Center for Disease Control and Prevention, 2022, https://www.cdc.gov/nutrition/data-statistics/sugar-sweetened-beverages-intake.html, accessed May 2022

[122] Dietary Guidelines for Americans, US Department of Agriculture, Department of Health and Human Services, 2020, https://www.dietaryguidelines.gov/sites/default/files/2021-03/Dietary_Guidelines_for_Americans-2020-2025.pdf, accessed September 2022

[123] New York State Department of Health, 2018, https://www.health.ny.gov/statistics/brfss/reports/docs/2002_sugar_sweetened_beverages.pdf, accessed May 2022

Figure 159



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	20.9%	26.5%	21.6%	19.5%	27.2%	30.6%	18.1%	24.7%	24.7%
2016	21.9%	25.5%	22.9%	23.1%	27.0%	23.6%	18.5%	24.6%	24.2%
2018	23.5%	22.5%	25.6%	18.1%	31.5%	23.5%	20.3%	25.5%	24.7%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

HEALTH INDICATORS

MORTALITY

Before discussing the different health indicators in the M-H Region, it is useful to have an overall sense of the burden of diseases facing residents in these seven counties. Morbidity measures illness and it is defined in terms of incidence or prevalence. Incidence is the number of new cases of a disease divided by the number of people at risk for the disease over a particular period of time. Prevalence is the total number of cases of disease existing in a population during a specific period of time or at a particular time point. Mortality is another term for death. A mortality rate is the number of deaths due to a disease during a particular period of time divided by the total population.

Table 37 lists the top five causes of mortality in the M-H Region counties, as well as NYS and NYS excluding New York City (NYC).

In 2019, Sullivan County had the highest total mortality rate out of all seven counties in the M-H Region, as well as NYS (790.3 per 100,000 population). In 2019, the leading cause of death in most of the M-H Region counties and NYS was heart disease, with the exception of Sullivan County, where cancer was the primary cause of death. The causes of death in most of the counties included heart disease, cancer, unintentional injury, chronic lower respiratory diseases (CLRD), and cerebrovascular disease (stroke). However, in Orange County, the fifth leading cause of death was Alzheimer's disease; in Sullivan County, the fifth leading cause of death was diabetes.

Table 37

Top Five Leading Causes of Death in the Mid-Hudson Region Counties and NYS, 2019 (Age-Adjusted Rate per 100,000 Population)

	Total Deaths	#1 Cause of Death	#2 Cause of Death	#3 Cause of Death	#4 Cause of Death	#5 Cause of Death
Dutchess		**Heart Disease**	**Cancer**	**CLRD**	**Unintentional Injury**	**Cerebrovascular Disease**
	No.: 2,573	No.: 665	No.: 533	No.: 134	No.: 133	No.: 95
	Rate: 644.8	Rate: 161.4	Rate: 130.1	Rate: 32.3	Rate: 42.1	Rate: 24.0
Orange		**Heart Disease**	**Cancer**	**Unintentional Injury**	**CLRD**	**Alzheimer's Disease**
	No.: 2,773	No.: 636	No.: 621	No.: 164	No.: 144	No.: 112
	Rate: 675.2	Rate: 154.7	Rate: 145.6	Rate: 43.9	Rate: 34.5	Rate: 28.0
Putnam		**Heart Disease**	**Cancer**	**Unintentional Injury**	**Cerebrovascular Disease**	**CLRD**
	No.: 740	No.: 208	No.: 180	No.: 29	No.: 29	No.: 19
	Rate: 583.2	Rate: 160.7	Rate: 136.7	Rate: 30.3	Rate: 22.5	Rate: 14.6
Rockland		**Heart Disease**	**Cancer**	**Unintentional Injury**	**CLRD**	**Cerebrovascular Disease**
	No.: 2,296	No.: 603	No.: 481	No.: 134	No.: 97	No.: 96
	Rate: 558.2	Rate: 138.9	Rate: 121.6	Rate: 39.1	Rate: 23.8	Rate: 22.9
Sullivan		**Cancer**	**Heart Disease**	**Unintentional Injury**	**CLRD**	**Diabetes**
	No.: 772	No.: 167	No.: 166	No.: 60	No.: 51	No.: 23
	Rate: 790.3	Rate: 156.3	Rate: 164.4	Rate: 75.9	Rate: 48.8	Rate: 20.8
Ulster		**Heart Disease**	**Cancer**	**CLRD**	**Unintentional Injury**	**Cerebrovascular Disease**
	No.: 1,765	No.: 452	No.: 388	No.: 99	No.: 85	No.: 70
	Rate: 684.4	Rate: 166.6	Rate: 149.9	Rate: 36.9	Rate: 44.1	Rate: 26.6
Westchester		**Heart Disease**	**Cancer**	**CLRD**	**Cerebrovascular Disease**	**Unintentional Injury**
	No: 7,244	No.: 1,934	No.: 1,612	No.: 319	No.: 281	No.: 265
	Rate: 524.1	Rate: 132.0	Rate: 121.5	Rate: 22.4	Rate: 19.6	Rate: 24.3
NYS excl NYC		**Heart Disease**	**Cancer**	**CLRD**	**Unintentional Injury**	**Cerebrovascular Disease**
	No.: 102,344	No.: 25,602	No.: 21,782	No.: 5,255	No.: 4,832	No.: 4,225
	Rate: 673.5	Rate: 161.3	Rate: 143.1	Rate: 33.7	Rate: 39.6	Rate: 27.0
NYS		**Heart Disease**	**Cancer**	**Unintentional Injury**	**CLRD**	**Cerebrovascular Disease**
	No.: 156,405	No.: 43,472	No.: 33,418	No.: 7,308	No.: 7,065	No.: 6,125
	Rate: 622.4	Rate: 167.1	Rate: 133.6	Rate: 33.8	Rate: 27.7	Rate: 23.9

Note: Ranks are based on numbers of deaths, then on mortality rates.
Source: NYS Leading Causes of Death, 2019
https://apps.health.ny.gov/public/tabvis/PHIG_Public/lcd/reports/#state
https://apps.health.ny.gov/public/tabvis/PHIG_Public/lcd/reports/#county

The following sub-sections under Health Indicators will provide more specific details about the different diseases that are impacting the health of the population in the M-H Region. For some indicators at the county level, three-year averages were used due to greater stability of data. If a single year is posted for a three-year average, the years averaged include the year preceding and year following. For example, if the single year written is 2008, the three-year average would be from 2007-2009. Additionally, there are indicators derived from Statewide Planning and Research Cooperative System (SPARCS) where data from 2016 forward cannot be compared to data prior to 2014 and data is absent for 2015. According to the NYSDOH, this is due to SPARCS data transitioning on October 1, 2015 from International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) to International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated and data for 2016-and-forward should not be compared with data for 2014-and-prior.

PHYSICAL HEALTH

CHRONIC DISEASES

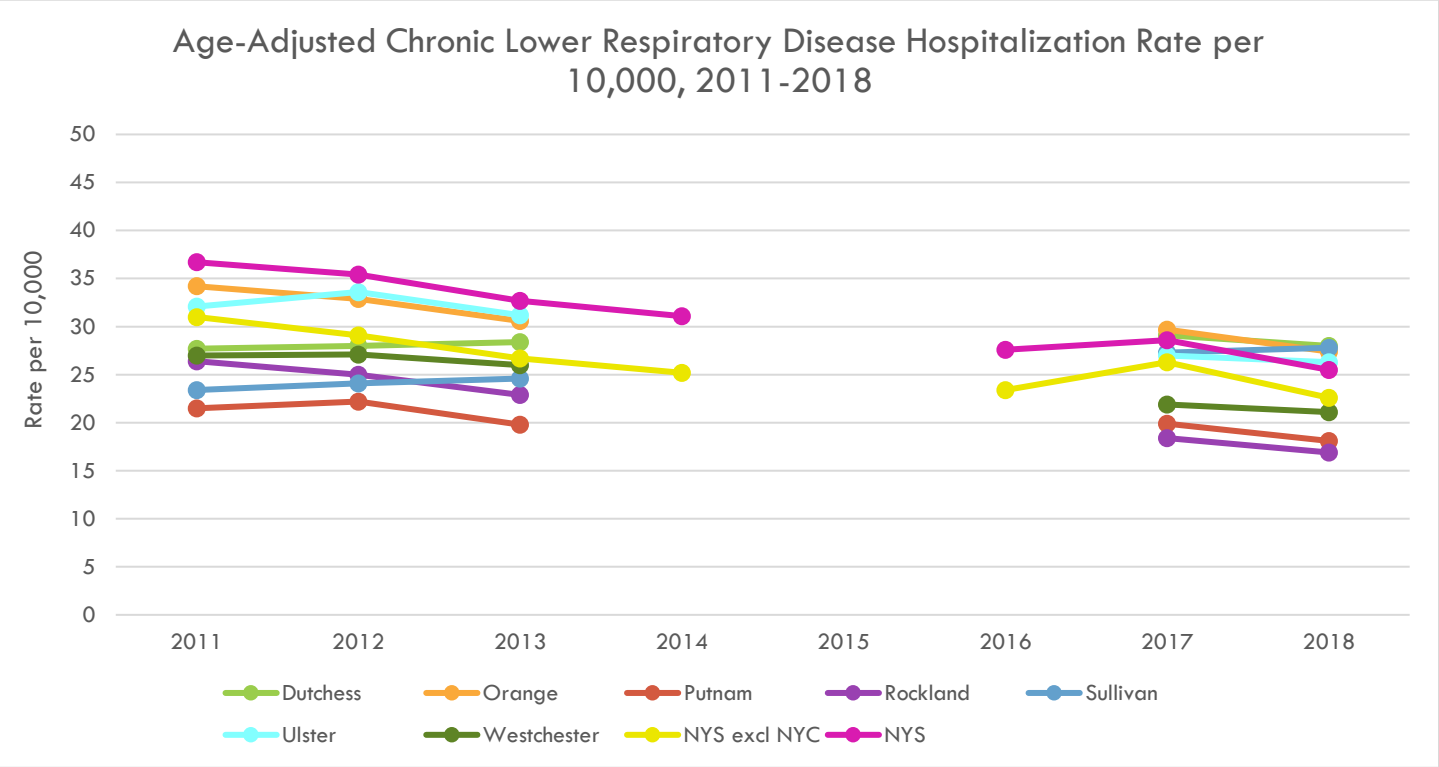
CHRONIC LOWER RESPIRATORY DISEASES

CLRD is a classification of diseases that affect the lungs and the respiratory tract. Some of these diseases include asthma and chronic obstructive pulmonary diseases (COPD) such as chronic bronchitis and emphysema. CLRD was the fourth leading cause of death in the US in 2019.[124]

Annual CLRD hospitalization rates decreased in NYS and NYS excluding NYC from 2016 to 2018. Three-year average CLRD hospitalization rates also decreased in almost all counties in 2018 as compared to the three-year average rates for 2017. This is excluding Sullivan County, which had a slight increase from 2017 to 2018 (27.3 vs 27.8 per 10,000 population, respectively), as seen in Figure 160.

[124] JAMA Network, 2021, https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2786682, accessed June 2022

Figure 160

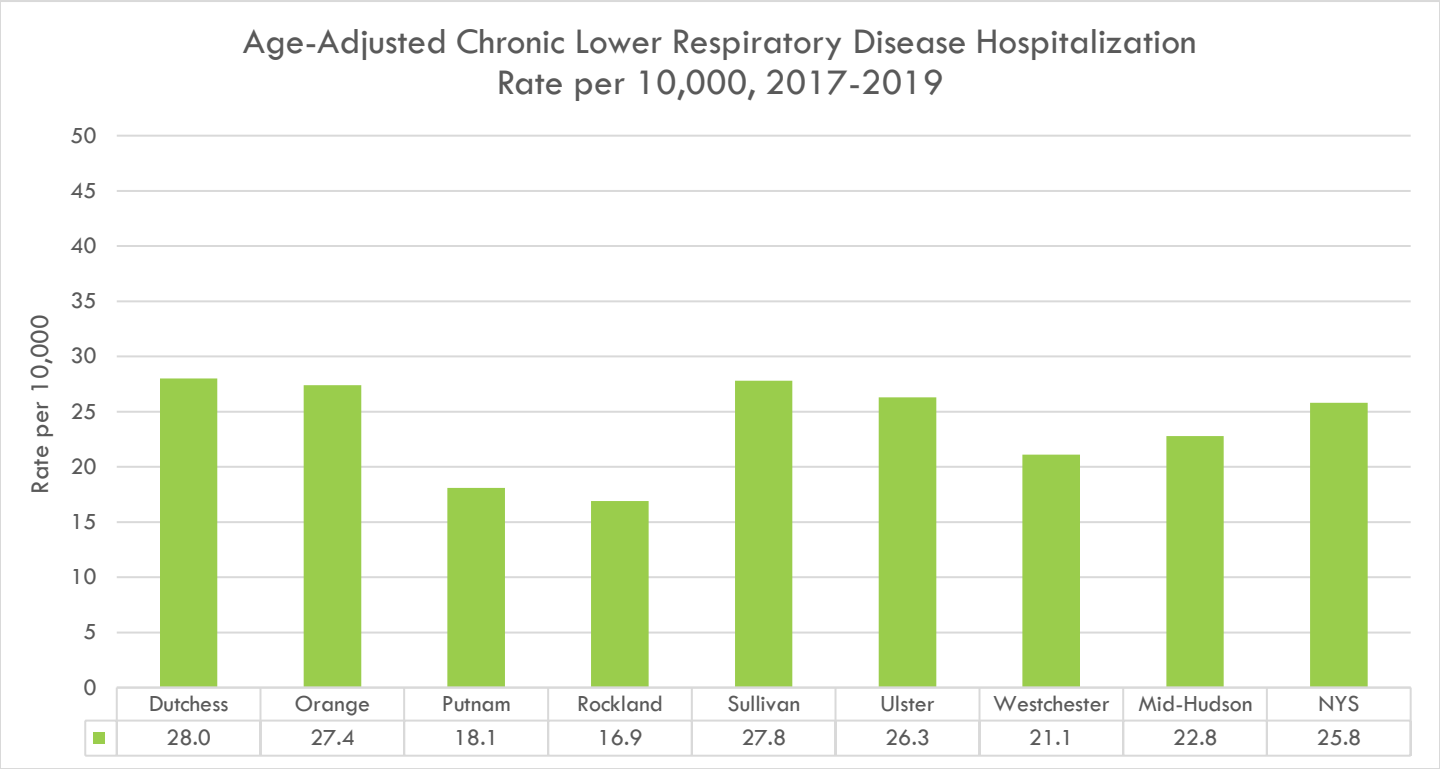


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	27.7	34.2	21.5	26.4	23.4	32.1	27.0	31.0	36.7
2012	28.0	32.9	22.2	25.0	24.1	33.6	27.1	29.1	35.4
2013	28.4	30.6	19.8	22.9	24.6	31.2	26.0	26.7	32.7
2014								25.2	31.1
2015									
2016								23.4	27.6
2017	29.1	29.7	19.9	18.4	27.3	27.0	21.9	26.3	28.6
2018	28.0	27.4	18.1	16.9	27.8	26.3	21.1	22.6	25.5

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015 from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Mh34a

As seen in Figure 161, from 2017-2019, the CLRD hospitalization rate in the M-H Region was less than that of NYS. Dutchess County had the highest rate of CLRD hospitalizations (28.0 per 10,000) closely followed by Sullivan and Orange Counties (27.8 and 27.4 per 10,000, respectively). Rockland County had the lowest CLRD hospitalization rate (16.9 per 10,000).

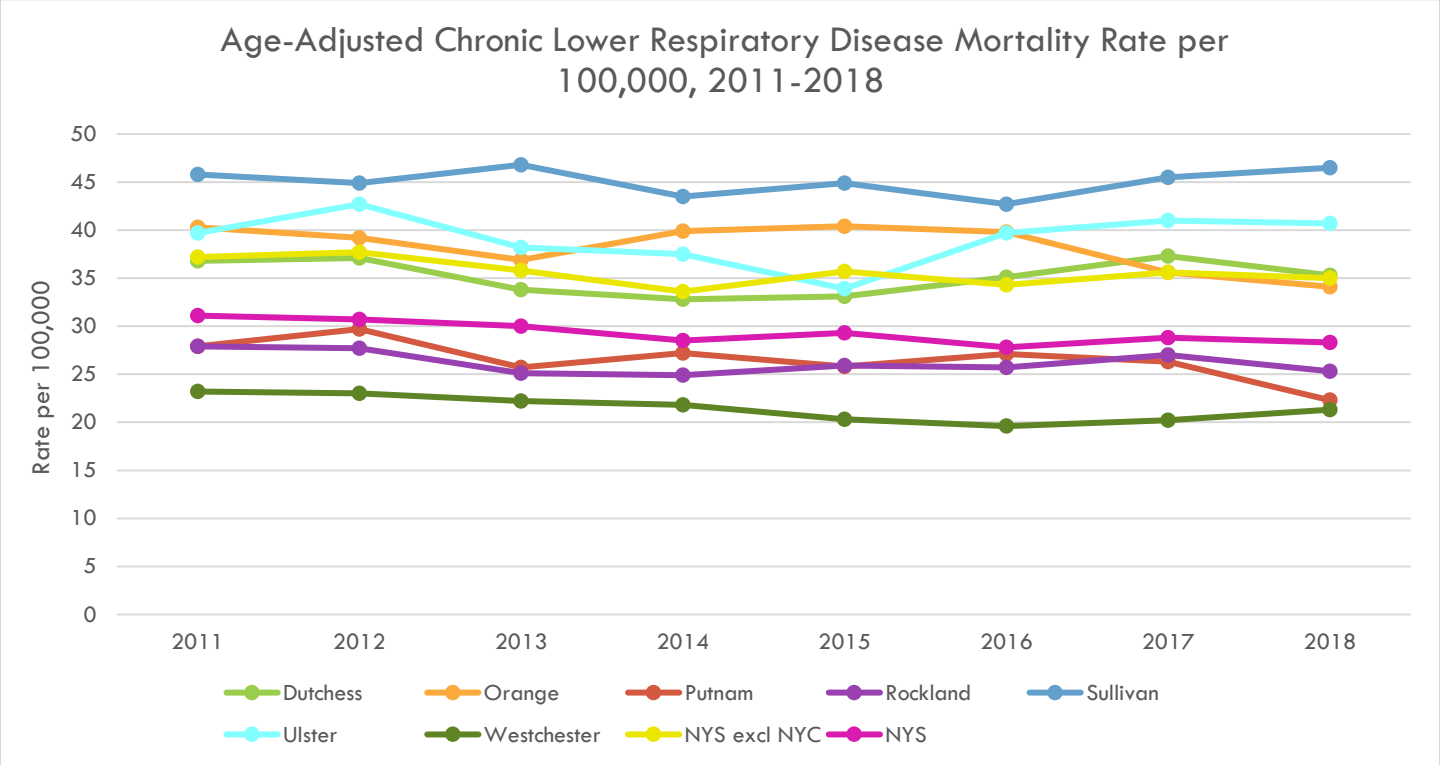
Figure 161



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Mh34

When looking over time in Figure 162, CLRD mortality rates varied across the seven counties in the M-H Region. Between 2017 and 2018, Putnam County had the greatest decrease in CLRD mortality rate in the region. Though it had the lowest rate of CLRD mortality, Westchester saw the largest increase between 2017 and 2018 in the region.

Figure 162

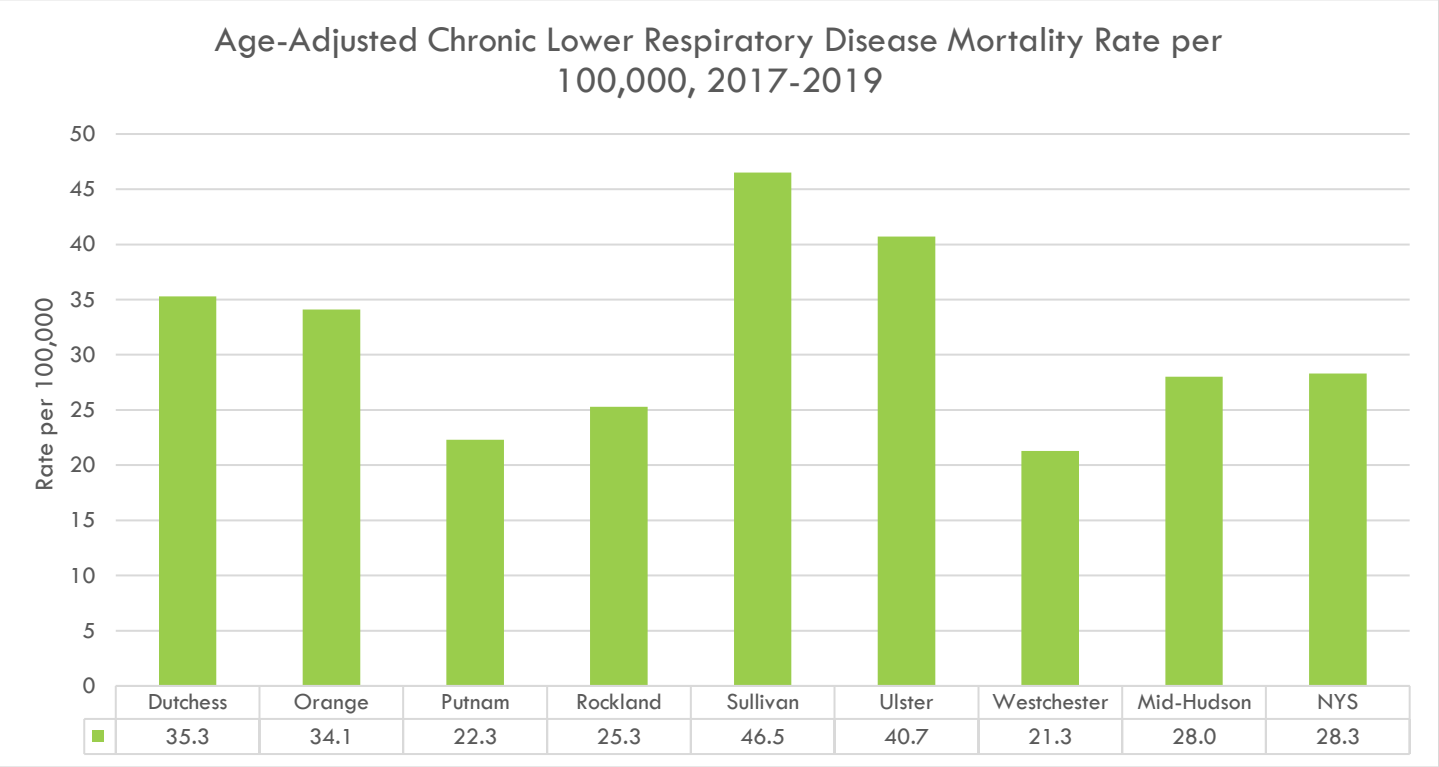


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	36.8	40.3	27.9	27.9	45.8	39.7	23.2	37.2	31.1
2012	37.1	39.2	29.7	27.7	44.9	42.7	23.0	37.7	30.7
2013	33.8	36.9	25.7	25.1	46.8	38.2	22.2	35.8	30.0
2014	32.8	39.9	27.2	24.9	43.5	37.5	21.8	33.6	28.5
2015	33.1	40.4	25.8	25.9	44.9	33.9	20.3	35.7	29.3
2016	35.1	39.8	27.1	25.7	42.7	39.7	19.6	34.3	27.8
2017	37.3	35.6	26.3	27.0	45.5	41.0	20.2	35.6	28.8
2018	35.3	34.1	22.3	25.3	46.5	40.7	21.3	35.0	28.3

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Md30

According to Figure 163 from 2017-2019, although the rate in the M-H Region was similar to the rate in NYS (28.0 vs 28.3 per 100,000 population, respectively), CLRD mortality rates varied across the region's seven counties. Of the seven counties, Sullivan had the highest CLRD mortality rate at 46.5 per 100,000 population, and Westchester had the lowest rate at 21.3 per 100,000 population.

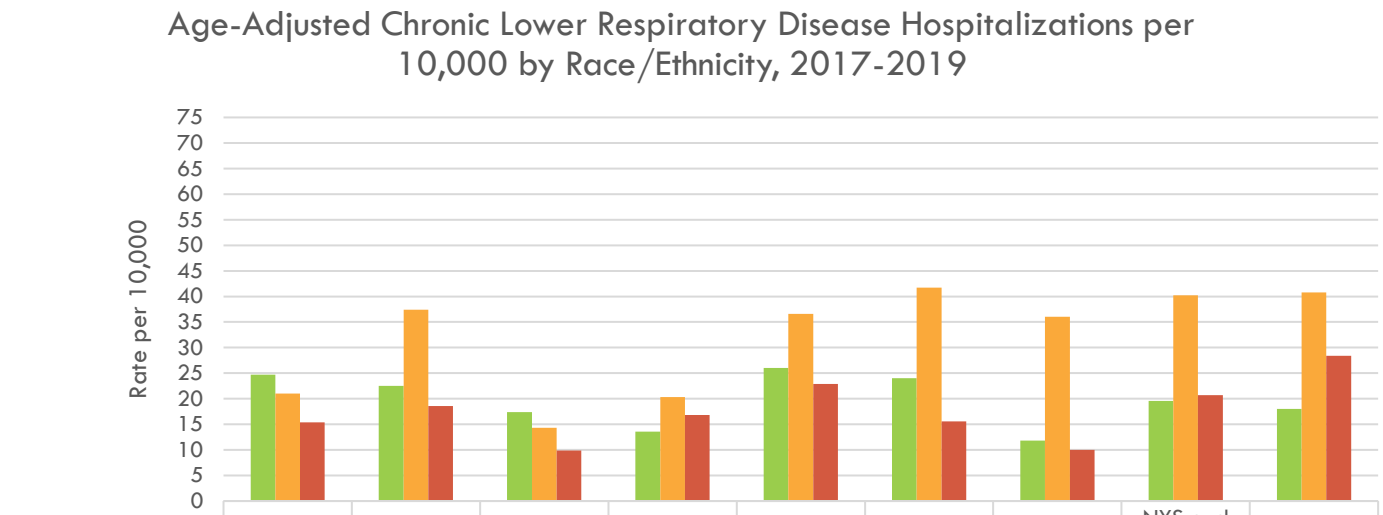
Figure 163



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Md30a

When stratifying CLRD by race/ethnicity, the disparities were not consistent among hospitalization and mortality rates. According to Figure 164, non-Hispanic Black adults had higher CLRD hospitalization rates across NYS. This was also true for most of the counties in the M-H Region, with the exception of Putnam and Dutchess Counties. However, non-Hispanic White adults had the highest CLRD mortality rates across all of the seven counties, which was also consistent with both NYS and NYS excluding NYC trends [see Figure 165].

Figure 164

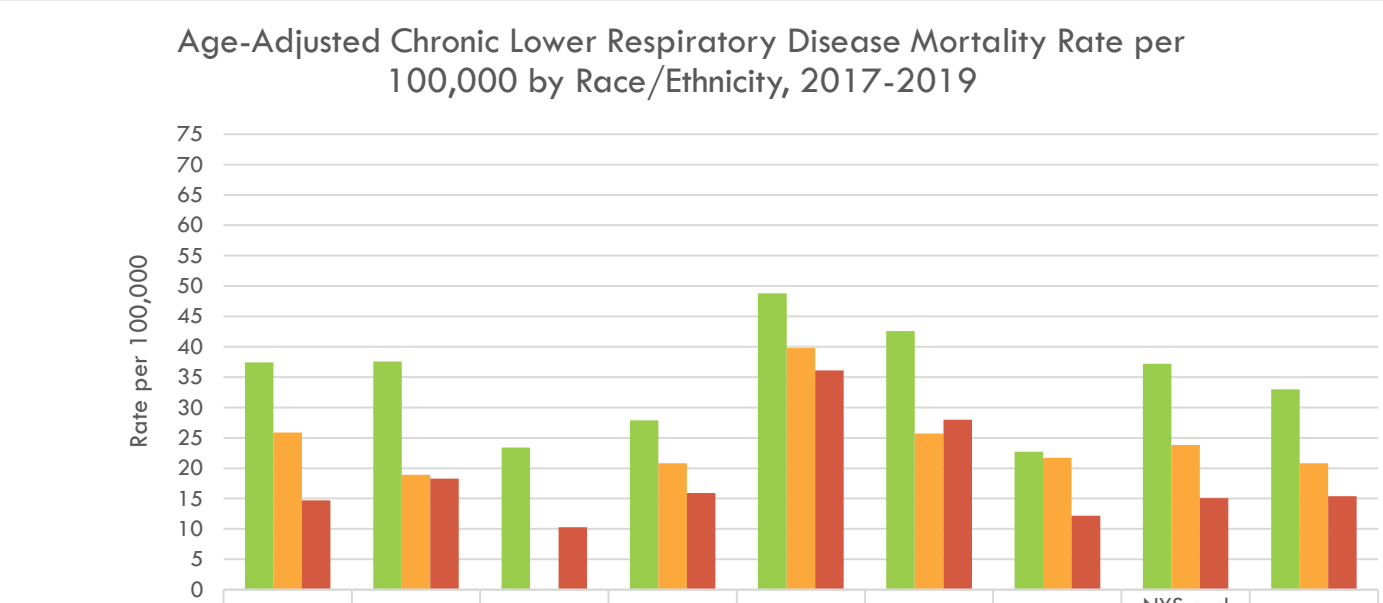


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS +
Non-Hispanic White	24.7	22.5	17.4	13.6	26.0	24.0	11.8	19.6	18.0
Non-Hispanic Black	21.0	37.4	14.3	20.3	36.6	41.7	36.0	40.2	40.8
Hispanic	15.4	18.6	9.9	16.8	22.9	15.6	10.0	20.7	28.4

+: The 2019 ED data in New York City may be incomplete and subject to change. Thus, the state rates may be underestimated and subject to change.

Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2021
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

Figure 165



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	37.4	37.6	23.4	27.9	48.8	42.6	22.7	37.2	33.0
Non-Hispanic Black	25.9	18.9	0.0*	20.8	39.8*	25.7 *	21.7	23.8	20.8
Hispanic	14.7	18.3	10.3*	15.9	36.1*	28.0 *	12.2	15.1	15.4

**: The rate is unstable.*

Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2021
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

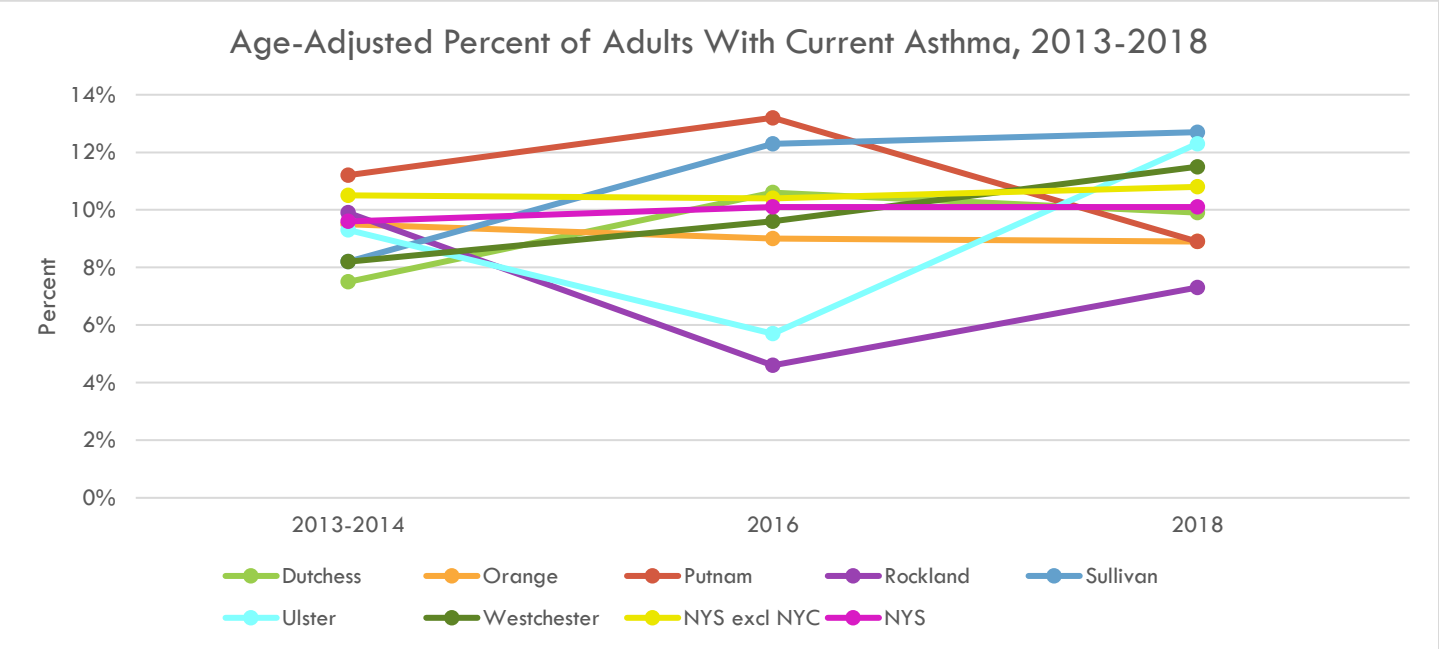
ASTHMA

Asthma is caused by airway restriction in the lungs resulting in difficulty breathing, wheezing, chest tightness, and coughing. The causes of asthma are not fully known; however, it is linked to a variety of factors that may be genetic, environmental, or viral. Other factors associated with higher asthma risk include allergies, obesity, occupation, and race. African Americans and Puerto Ricans are at a higher risk of asthma than other races and ethnicities.[125]

There is no definitive cure for the disease; however, there are ways to manage it with medication and by avoiding triggers, such as allergens, intense physical activity, emotional stress, and air pollution.[126] Asthma is a serious economic burden, costing the US $50 billion a year in healthcare costs alone.[127]

In the US, 7.7% of adults have asthma.[128] In 2018, this percentage varied across the seven counties in the M-H Region. According to Figure 166, Sullivan County had the highest percentage of adults with asthma (12.7%), while Rockland County had the lowest percentage (7.3%). Since 2013, Dutchess, Sullivan, Ulster, and Westchester Counties have had increases in the percentage of adults with asthma, while Orange, Putnam, and Rockland have had decreases. The percentages in NYS and NYS excluding NYC have stayed relatively stable.

Figure 166



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	7.5%	9.5%	11.2%	9.9%	8.2%	9.3%	8.2%	10.5%	9.6%
2016	10.6%	9.0%	13.2%	4.6%	12.3%	5.7%	9.6%	10.4%	10.1%
2018	9.9%	8.9%	8.9%	7.3%	12.7%	12.3%	11.5%	10.8%	10.1%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

[125] NIH, National Heart, Lung, and Blood Institute, 2022, https://www.nhlbi.nih.gov/health/asthma/causes, accessed June 2022

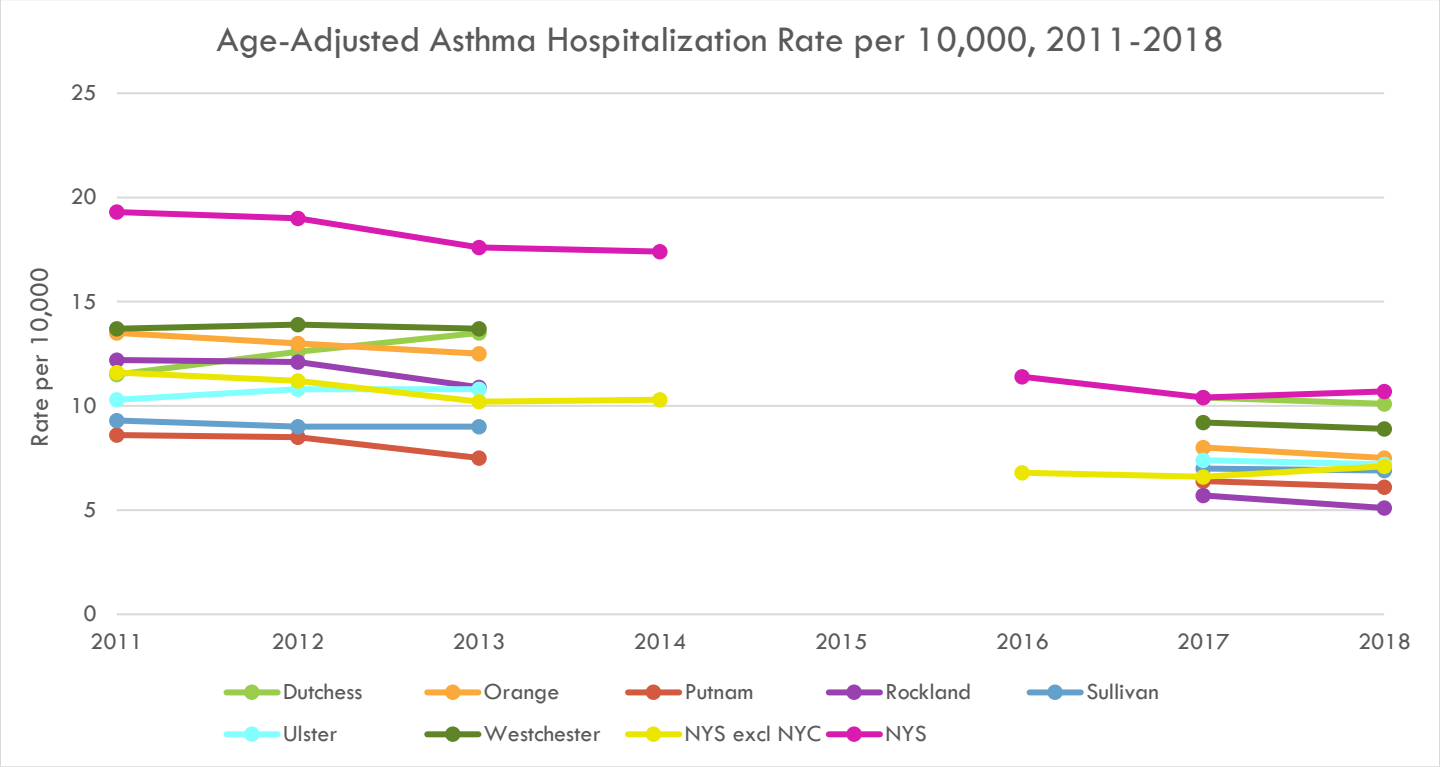
[126] NIH, National Heart, Lung, and Blood Institute, 2022, https://www.nhlbi.nih.gov/health/asthma, accessed September 2022

[127] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/sixeighteen/asthma/index.htm, accessed June 2022

[128] Medical News Today, 2017, https://www.medicalnewstoday.com/articles/315741#Who%20gets%20asthma%20and%20COPD, accessed October 2022

The rates of asthma hospitalization vary across the M-H Region and NYS. However, all rates stayed relatively stable between 2017 and 2018 [see Figure 167].

Figure 167



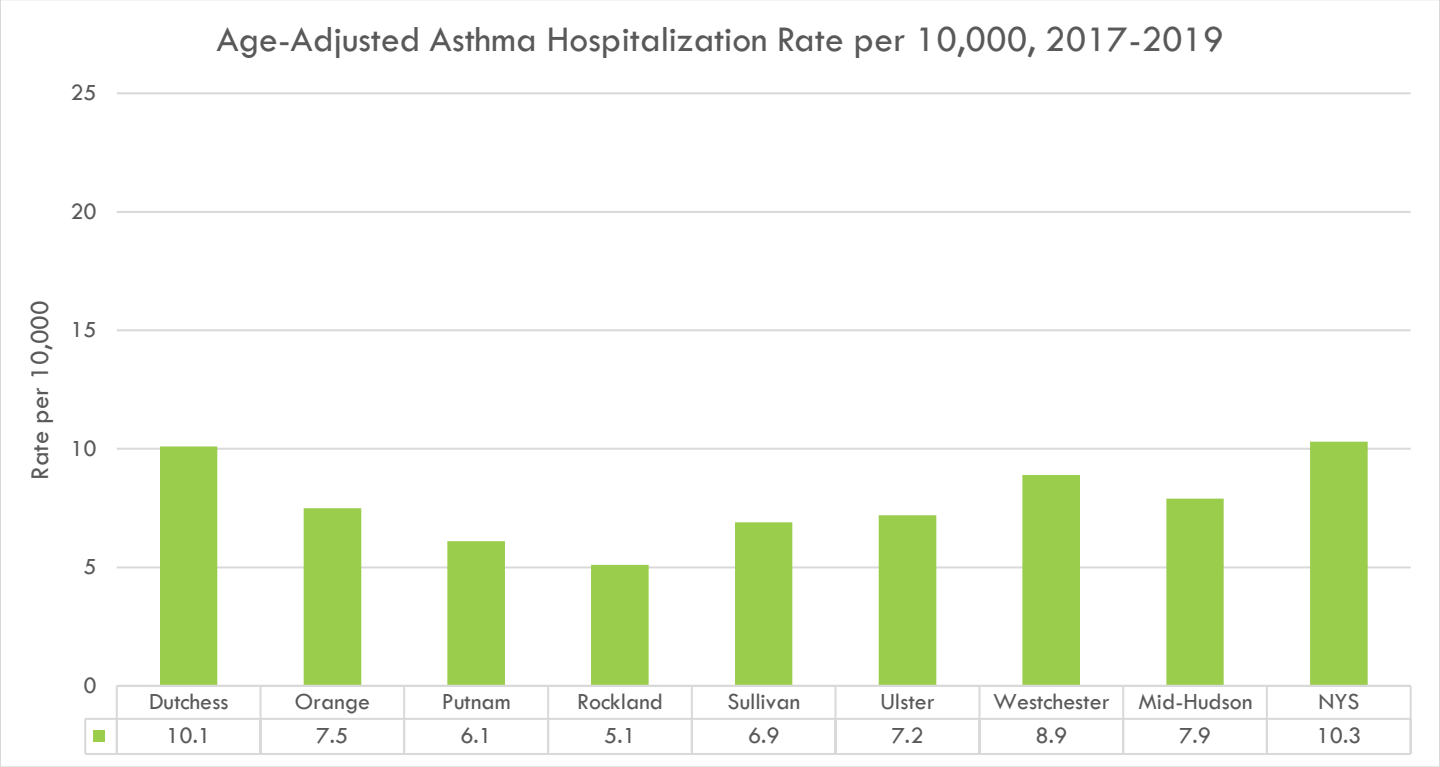
	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	11.5	13.5	8.6	12.2	9.3	10.3	13.7	11.6	19.3
2012	12.6	13.0	8.5	12.1	9.0	10.8	13.9	11.2	19.0
2013	13.5	12.5	7.5	10.9	9.0	10.8	13.7	10.2	17.6
2014								10.3	17.4
2015									
2016								6.8	11.4
2017	10.4	8.0	6.4	5.7	7.0	7.4	9.2	6.6	10.4
2018	10.1	7.5	6.1	5.1	6.9	7.2	8.9	7.1	10.7

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015 from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Mh35a

When looking at the recent three-year average from 2017-2019 in Figure 168, Dutchess County had the highest asthma hospitalization rate at 10.1 per 10,000 population, while Rockland County had the lowest rate at 5.1 per 10,000 population.

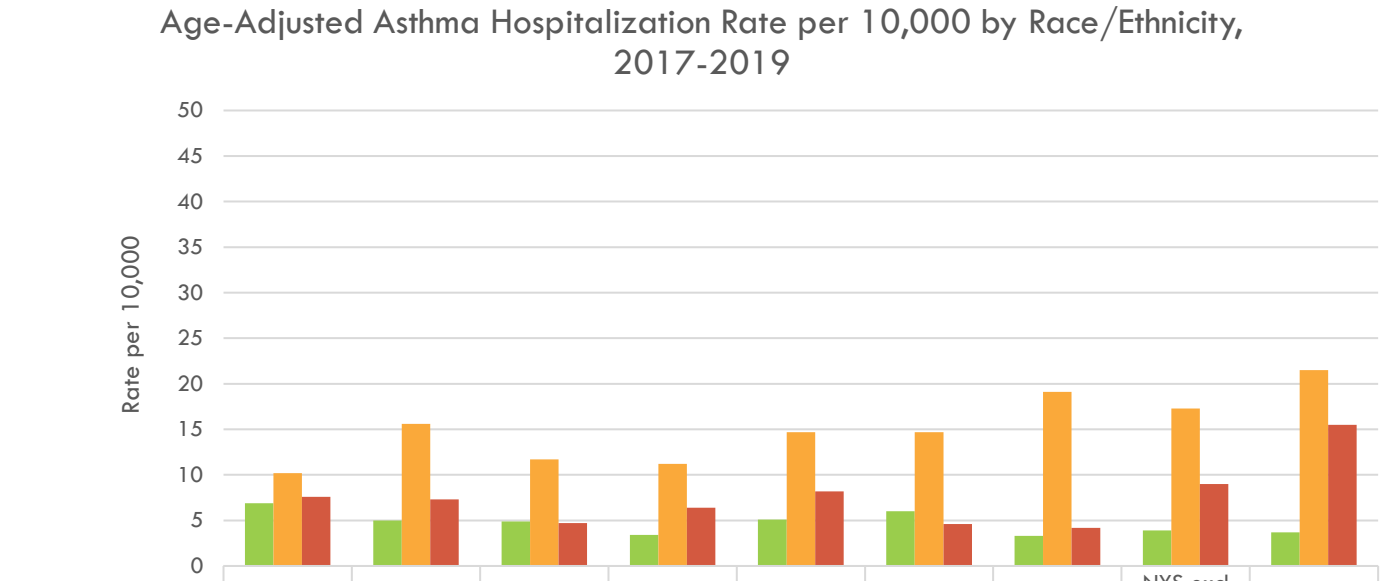
Figure 168



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Mh35a

When stratifying the data by race/ethnicity, as seen in Figure 169, non-Hispanic Black adults had higher rates of asthma hospitalization compared to non-Hispanic White and Hispanic adults. This is consistent throughout the M-H Region Counties, as well as NYS and NYS excluding NYC.

Figure 169



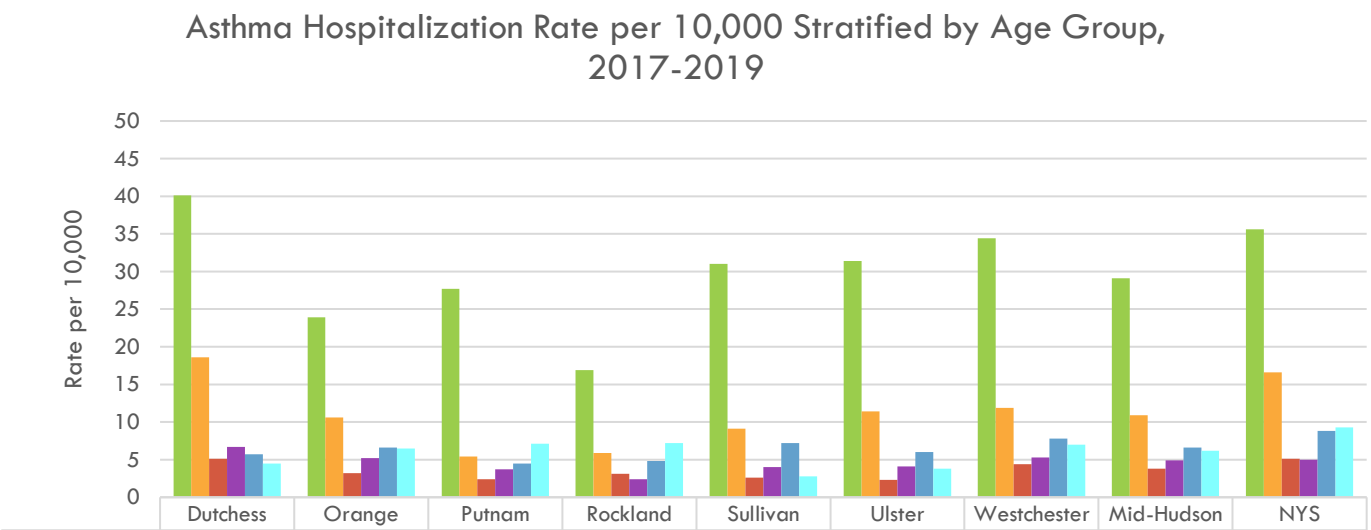
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS +
Non-Hispanic White	6.9	5.0	4.9	3.4	5.1	6.0	3.3	3.9	3.7
Non-Hispanic Black	10.2	15.6	11.7	11.2	14.7	14.7	19.1	17.3	21.5
Hispanic	7.6	7.3	4.7	6.4	8.2	4.6	4.2	9.0	15.5

+: The 2019 ED data in New York City may be incomplete and subject to change. Thus, the state rate may be underestimated and subject to change.

Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2021
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

When stratifying asthma hospitalization by age group, the rates were higher for the younger population, specifically those aged 0-4 years. According to Figure 170, in the 0-4 age group, asthma hospitalization rates were highest in Dutchess County at 40.1 per 10,000 population and lowest in Rockland County at 16.9 per 10,000 population.

Figure 170

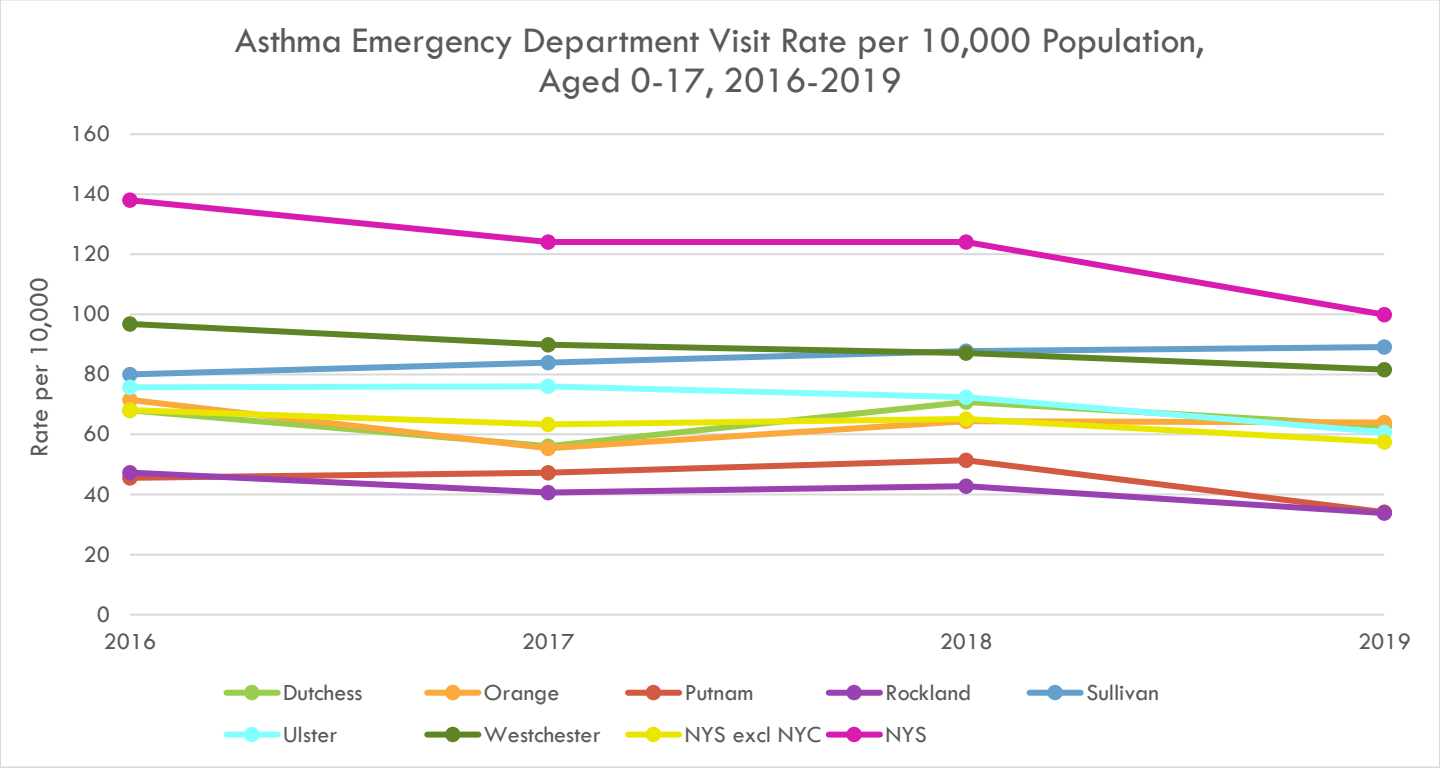


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
0-4	40.1	23.9	27.7	16.9	31	31.4	34.4	29.1	35.6
5-14	18.6	10.6	5.4	5.9	9.1	11.4	11.9	10.9	16.6
15-24	5.1	3.2	2.4 *	3.1	2.6 *	2.3	4.4	3.8	5.1
25-44	6.7	5.2	3.7	2.4	4	4.1	5.3	4.9	5
45-64	5.7	6.6	4.5	4.8	7.2	6	7.8	6.6	8.8
65 and older	4.5	6.5	7.1	7.2	2.8	3.8	7	6.2	9.3

*: *Fewer than 10 events in the numerator, therefore the rate is unstable.*
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Mh36
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Mh37
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Mh40
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Mh41
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Mh42
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Mh43

The Emergency Department (ED) is commonly used to treat asthma related complications. When looking at those aged 0-17 years in the M-H Region [see Figure 171], Sullivan County had the highest ED visit rate (89.1 per 10,000). Rockland and Putnam Counties had the lowest rates in the region (33.8 and 34.1 per 10,000, respectively). All counties in the M-H Region, NYS, and NYS excluding NYC met the Prevention Agenda 2024 objective of falling below 131.1 asthma ED visits per 10,000 in those aged 0-17 years. According to Figure 171, the rates have stayed relatively stable across the seven counties in the M-H Region.

Figure 171

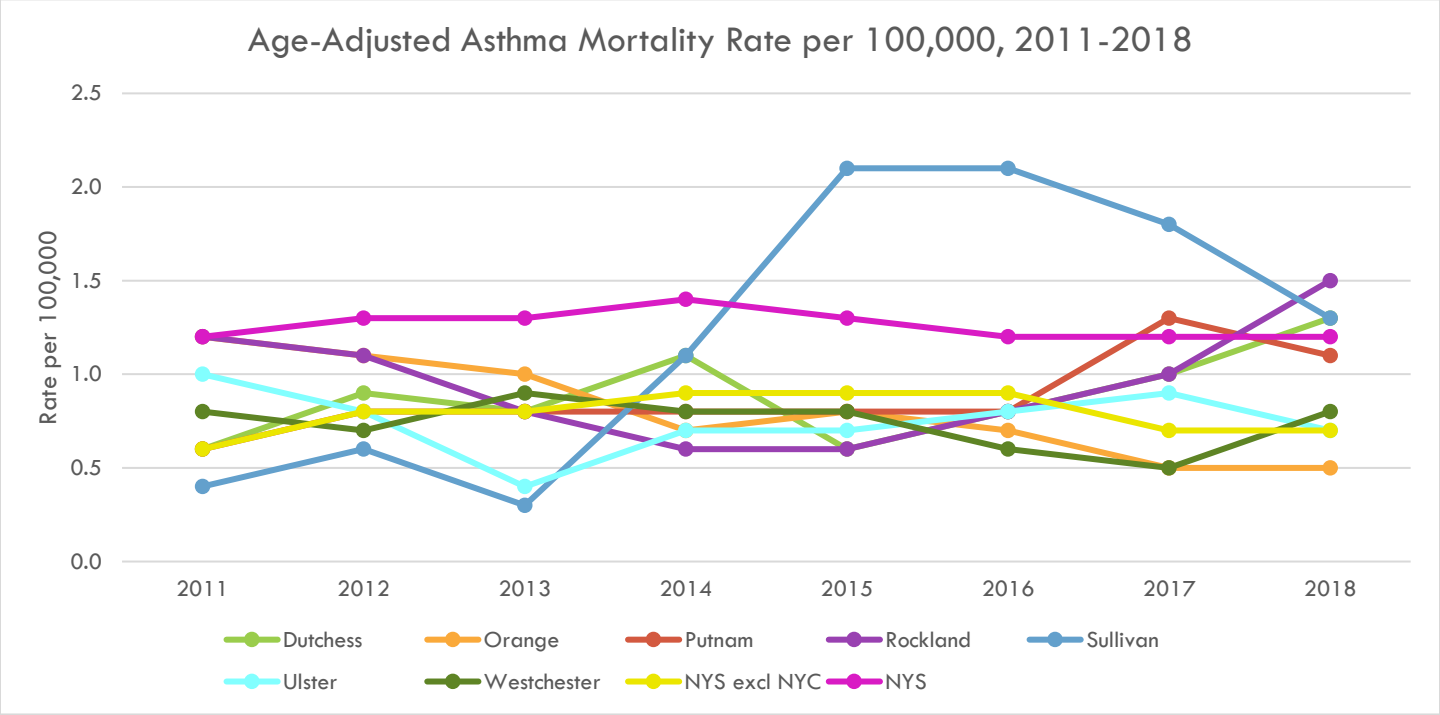


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2016	68	71.5	45.6	47.3	80	75.7	96.8	68.1	138
2017	56.1	55.4	47.3	40.7	83.9	76	89.9	63.4	124.1
2018	70.8	64.4	51.4	42.8	87.8	72.4	87.1	65.2	124.1
2019	62.8	64	34.1	33.8	89.1	60.7	81.6	57.5	99.9

Note: County of residence was assigned based on ZIP Code for cases in which patient county of residence was listed as unknown or missing but a valid NY ZIP Code was present.
The 2019 ED data in New York City may be incomplete and subject to change. Thus, the state rate may be underestimated and subject to change.
Source: NYS Prevention Agenda Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/dashboard/pa_dashboard&p=it&ind_id=pa360

From 2011-2018, most of the counties had unstable asthma mortality rates due to less than 10 asthma deaths in the given time periods. In 2018, among the seven counties, Rockland County had the highest asthma mortality rate at 1.5 deaths per 100,000 population and Orange County had the lowest (0.5 per 100,000) [see Figure 172].

Figure 172



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	0.6*	1.2	0.6*	1.2	0.4*	1.0*	0.8	0.6	1.2
2012	0.9	1.1	0.8*	1.1	0.6*	0.8*	0.7	0.8	1.3
2013	0.8*	1.0	0.8*	0.8*	0.3*	0.4*	0.9	0.8	1.3
2014	1.1	0.7*	0.8*	0.6*	1.1*	0.7*	0.8	0.9	1.4
2015	0.6*	0.8	0.8*	0.6*	2.1*	0.7*	0.8	0.9	1.3
2016	0.8*	0.7*	0.8*	0.8*	2.1*	0.8*	0.6	0.9	1.2
2017	1.0*	0.5*	1.3*	1.0	1.8*	0.9*	0.5	0.7	1.2
2018	1.3	0.5*	1.1*	1.5	1.3*	0.7*	0.8	0.7	1.2

**: Fewer than 10 events in the numerator, therefore the rate is unstable.*
Note: Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Md31a

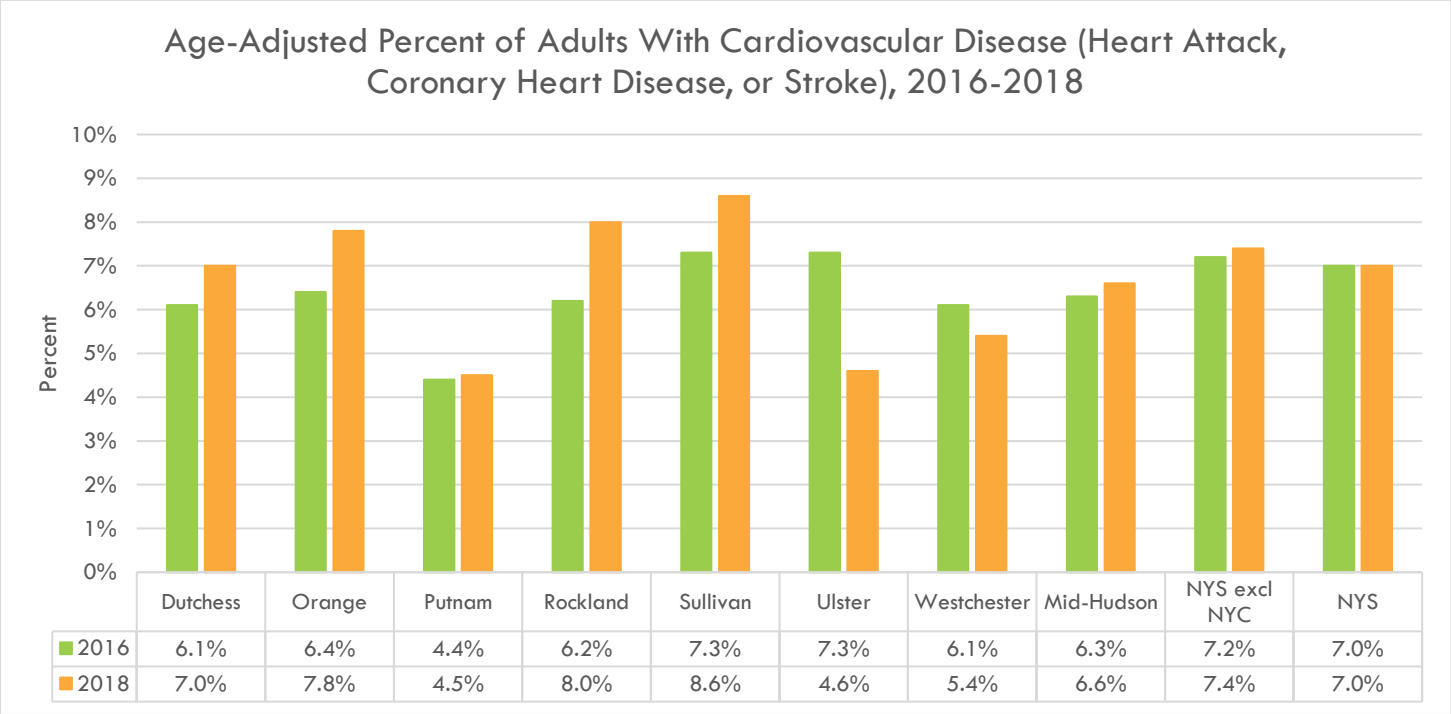
CARDIOVASCULAR DISEASE

Cardiovascular disease (CVD), which includes heart disease, is the leading cause of death in the US, killing more than 650,000 people each year.[129] CVD refers to a number of conditions that affect the heart and other components of the circulatory system including congestive heart failure, cerebrovascular disease or stroke, coronary artery disease, and heart attack. The management, treatment, and lost productivity due to CVD cost the US about $229 billion each year from 2017 to 2018.[130]

Key risk factors for CVD include high blood pressure, high cholesterol, and smoking. Other risk factors include diabetes, obesity, unhealthy diet, physical inactivity, and excessive alcohol use.[131] A growing body of research is showing an association between mental health and heart disease through both behavioral and physiologic pathways.[132]

According to Figure 173, in 2018, Sullivan County had the highest percentage of adults with CVD (limited to heart attack, coronary artery disease, and stroke) at 8.6%, which is higher than the M-H Region at 6.6% and NYS at 7.0%. Putnam and Ulster Counties had the lowest percentage of adults with CVD in 4.5% and 4.6% of adults, respectively. Ulster and Westchester Counties saw decreases from 2016 to 2018 in the percentage of adults with cardiovascular disease, while all other counties, as well as the M-H Region and NYS excluding NYC, had increases.

Figure 173



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
2016	6.1%	6.4%	4.4%	6.2%	7.3%	7.3%	6.1%	6.3%	7.2%	7.0%
2018	7.0%	7.8%	4.5%	8.0%	8.6%	4.6%	5.4%	6.6%	7.4%	7.0%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

[129] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/heartdisease/facts.htm, accessed June 2022

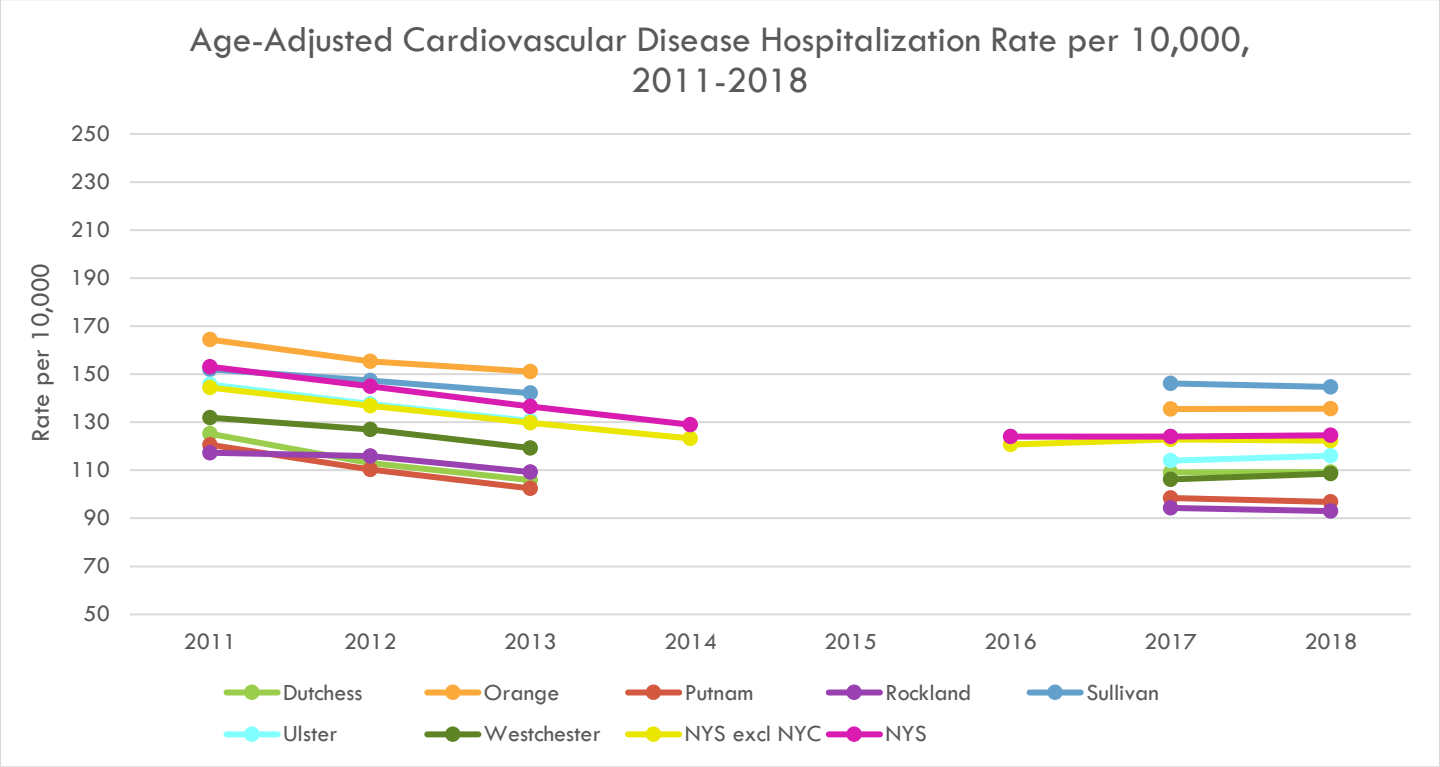
[130] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/heartdisease/facts.htm, accessed October 2022

[131] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/heartdisease/facts.htm, accessed June 2022

[132] Centers for Disease Control and Prevention, 2020, https://www.cdc.gov/heartdisease/mentalhealth.htm, accessed June 2022

Between 2016 and 2017 most counties in the M-H Region saw slight increases in CVD hospitalization rates, with the exception of Putnam, Rockland, and Sullivan Counties which saw slight decreases. NYS had a slight increase while NYS excluding NYC had a slight decrease [see Figure 174].

Figure 174



Note: Y-axis does not begin at zero in order to clearly display trend lines.

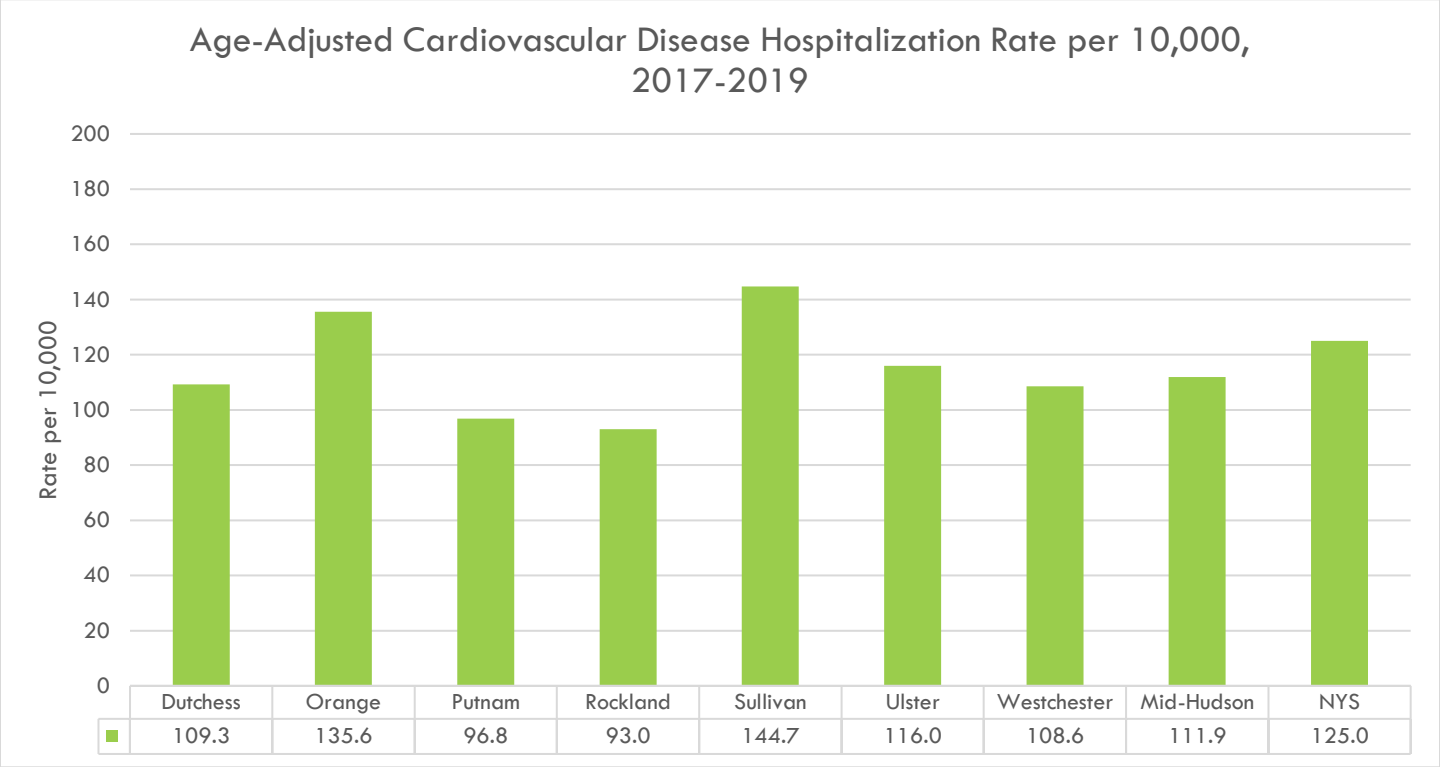
	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	125.2	164.4	120.6	117.3	152.0	145.7	131.9	144.4	153.1
2012	113.0	155.4	110.3	115.9	147.3	137.6	127.0	136.8	145.0
2013	105.9	151.1	102.4	109.2	142.1	130.6	119.3	129.7	136.6
2014								123.2	129.0
2015									
2016								120.7	124.0
2017	109.1	135.5	98.4	94.3	146.1	114.0	106.2	122.9	124.1
2018	109.3	135.6	96.8	93.0	144.7	116.0	108.6	122.3	124.6

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015 from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Bh1a

Recent data from 2017-2019 shows that Sullivan County had the highest CVD hospitalization rate at 144.7 per 10,000 population. This rate was higher than the M-H Region (111.9 per 10,000 population) and NYS (125.0 per 10,000 population) [see Figure 175].

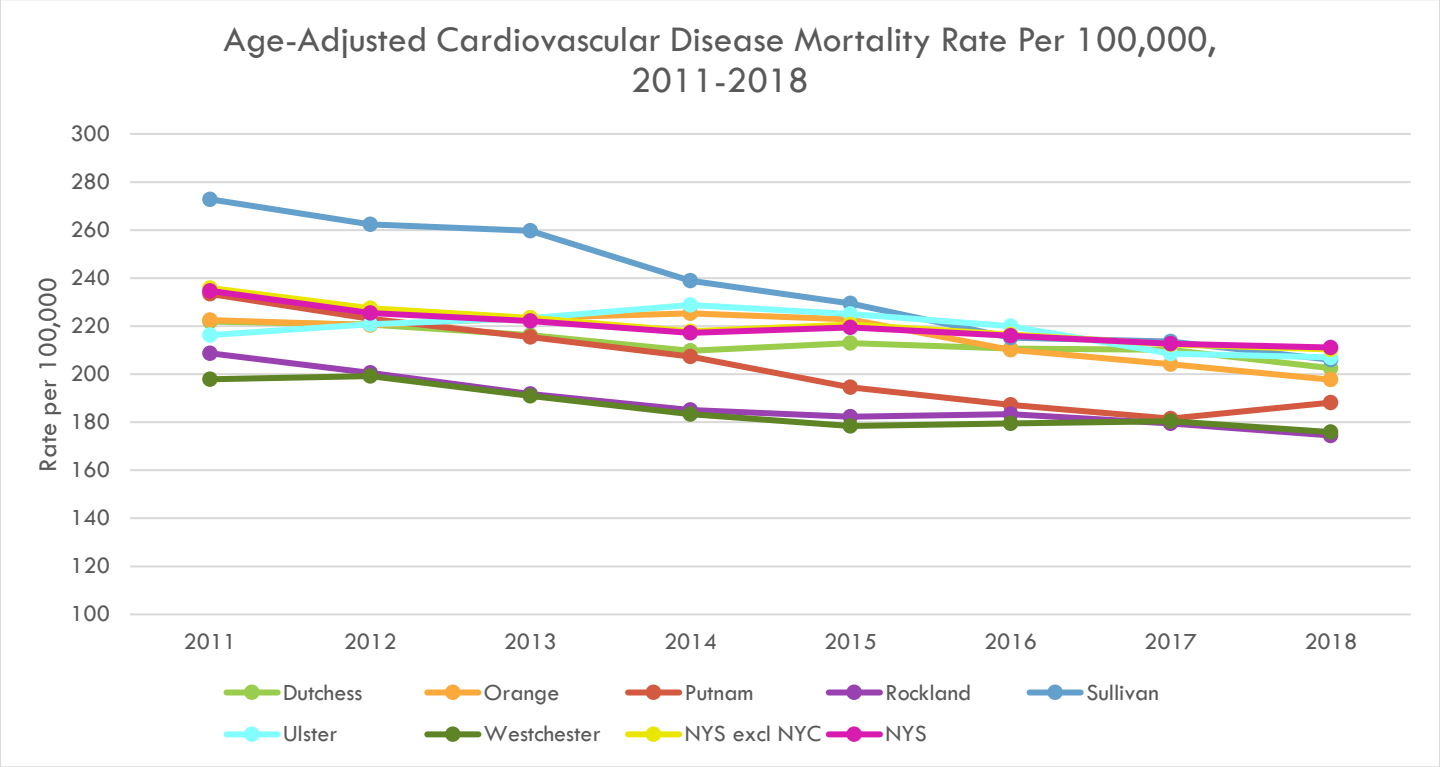
Figure 175



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bh1a

From 2011-2018, the rates of CVD mortality generally trended downward in the M-H Region counties, though Putnam County had a slight increase from 2017-2018 (181.5 to 188.1 per 100,000 population). This overall downward trend is also evident in NYS and in NYS excluding NYC [see Figure 176].

Figure 176



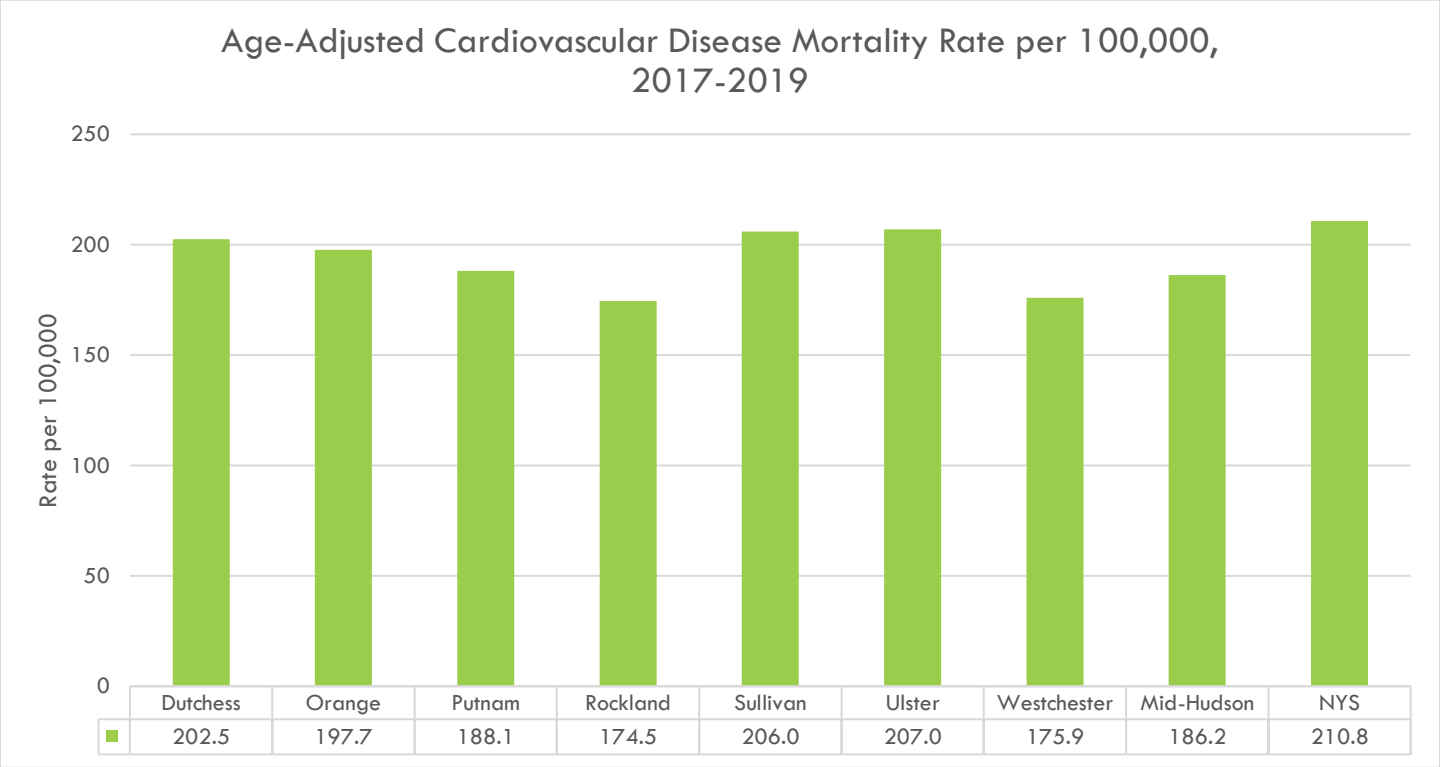
Note: Y-axis does not begin at zero in order to clearly display trend lines.

	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	221.9	222.5	233.4	208.7	272.8	216.2	197.9	235.9	234.7
2012	220.6	220.4	223.0	200.6	262.4	220.8	199.2	227.4	225.5
2013	216.2	223.4	215.4	191.7	259.7	223.3	191.0	223.5	222.1
2014	209.8	225.3	207.3	185.1	238.9	228.8	183.4	217.9	217.2
2015	212.9	222.8	194.5	182.3	229.4	225.1	178.4	220.6	219.5
2016	210.7	210.2	187.2	183.4	215.2	220.0	179.5	216.5	216.0
2017	210.2	204.2	181.5	179.5	213.6	208.5	180.4	212.4	212.7
2018	202.5	197.7	188.1	174.5	206.0	207.0	175.9	210.3	211.1

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bd1a

When looking at CVD mortality rates from 2017-2019 in Figure 177, Ulster County had the highest rate (207.0 per 100,000 population) closely followed by Sullivan County (206.0 per 100,000 population). Both counties' rates were higher than that of the M-H Region (186.2 per 100,000, respectively). Rockland County had the lowest mortality rate (174.5 per 100,000 population).

Figure 177



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bd1a

As mentioned previously, there are several risk factors for CVD, one of which includes hypertension. Hypertension, or high blood pressure, occurs when the force of blood against the arteries becomes high enough to cause diseases such as CVD. It is calculated based on the pressure in the arteries when the heart beats (systolic pressure) and the pressure in the arteries between heart beats (diastolic pressure).[133] Hypertension is defined as having a systolic blood pressure greater than 130 mmHg and a diastolic blood pressure greater than 80 mmHg (or being on medication for hypertension). Almost half of adults in the US (47%) have hypertension, and less than a quarter of those (24%) have their hypertension under control.[134] It is important to control hypertension through lifestyle modifications, as well as regular checkups with a doctor. The Surgeon General's Call to Action to Control Hypertension seeks to target hypertension and its health effects from multiple settings across the US. Sectors included in the Call to Action include the federal government, state, and local governments; health care professionals; employers; and several others.[135]

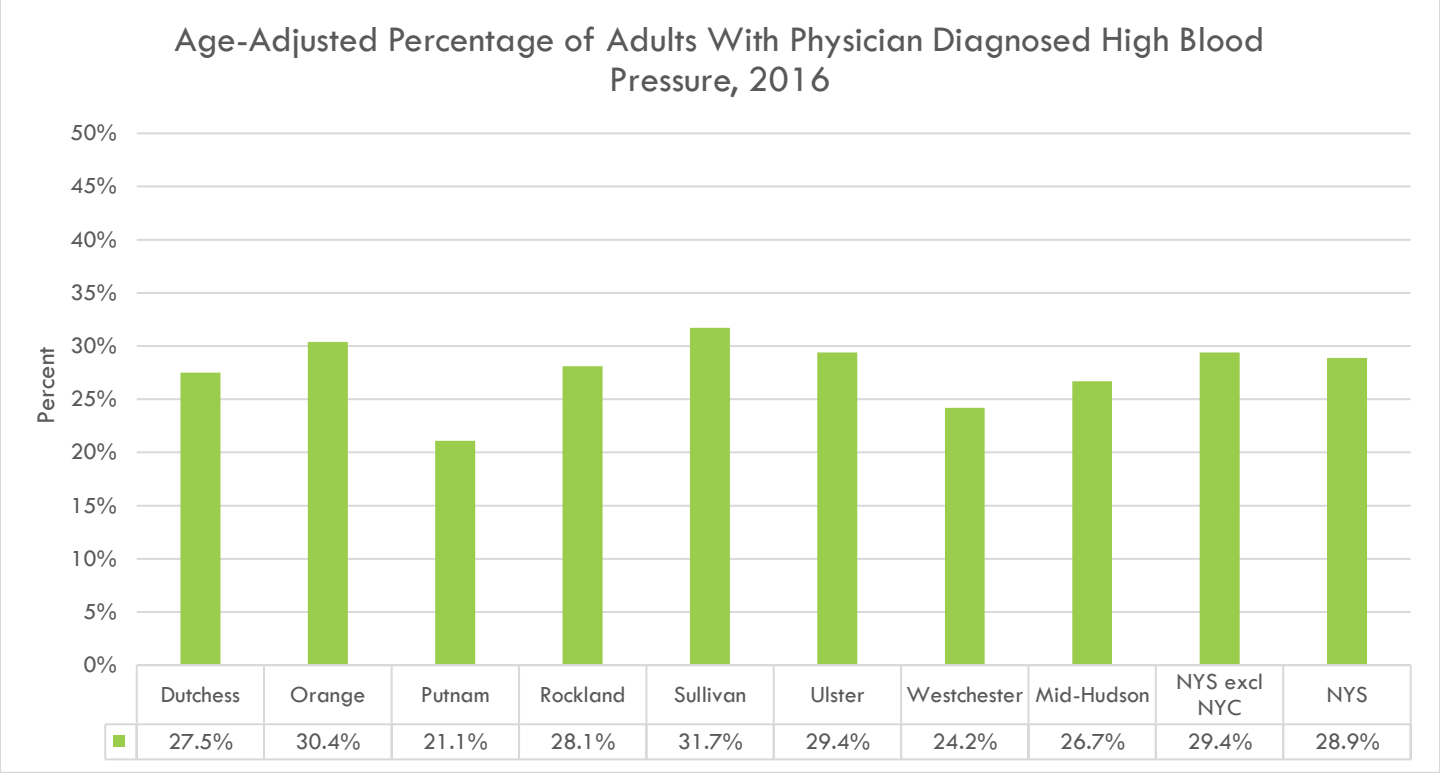
[133] Mayo Clinic, 2022, https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/symptoms-causes/syc-20373410, accessed June 2022

[134] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/bloodpressure/facts.htm, accessed June 2022

[135] Centers for Disease Control and Prevention, 2020, https://www.cdc.gov/bloodpressure/CTAstrategies.htm, accessed June 2022

As shown in Figure 178, in 2016, the age-adjusted percentage of adults with physician-diagnosed hypertension was relatively consistent across the seven counties in the M-H Region. Sullivan County had the highest percentage of adults diagnosed with hypertension (31.7%), while Putnam County had the lowest percentage (21.1%). This data remains unchanged as the last release was in 2018.

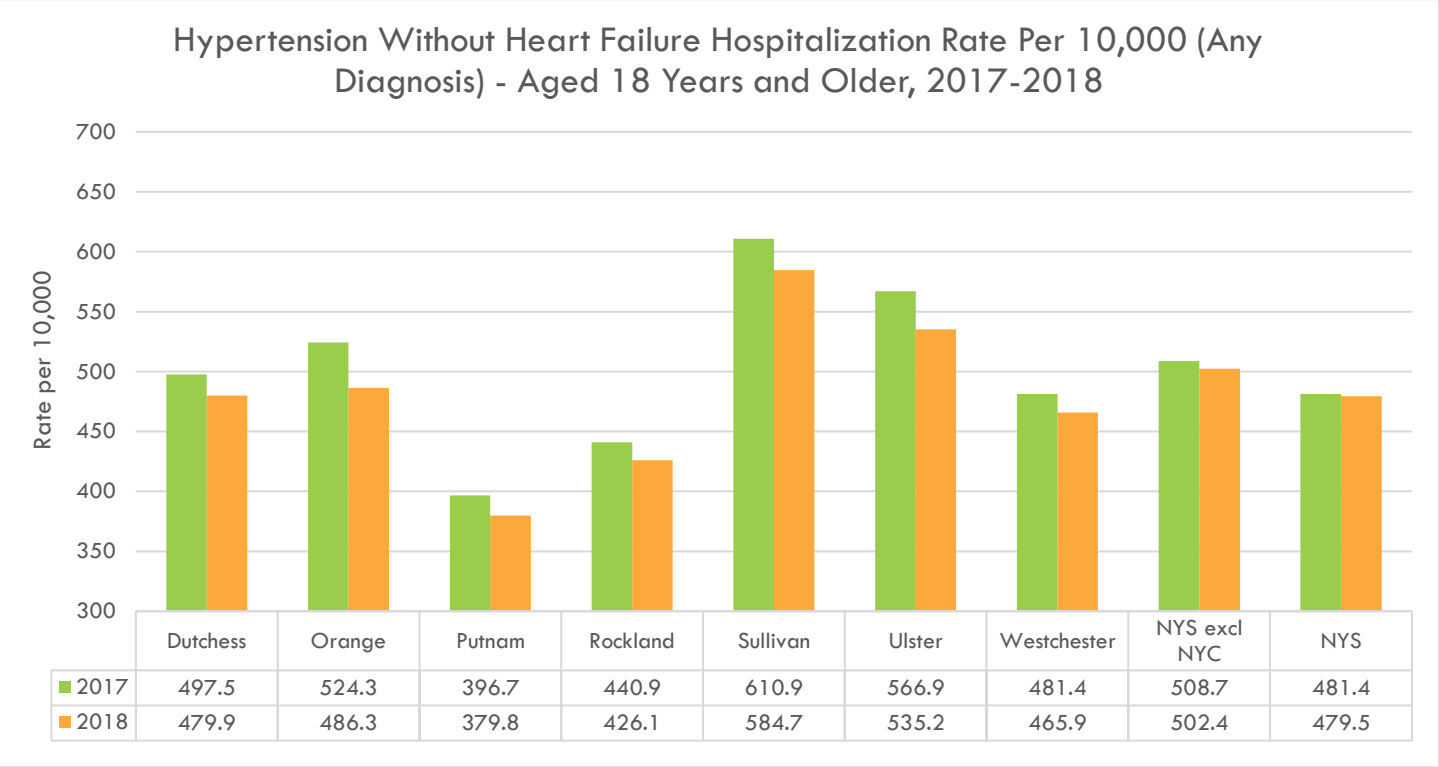
Figure 178



Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

According to Figure 179, between 2017 and 2018 all counties in the M-H Region had decreases in hypertension hospitalization rates. This was also true for NYS and NYS excluding NYC.

Figure 179

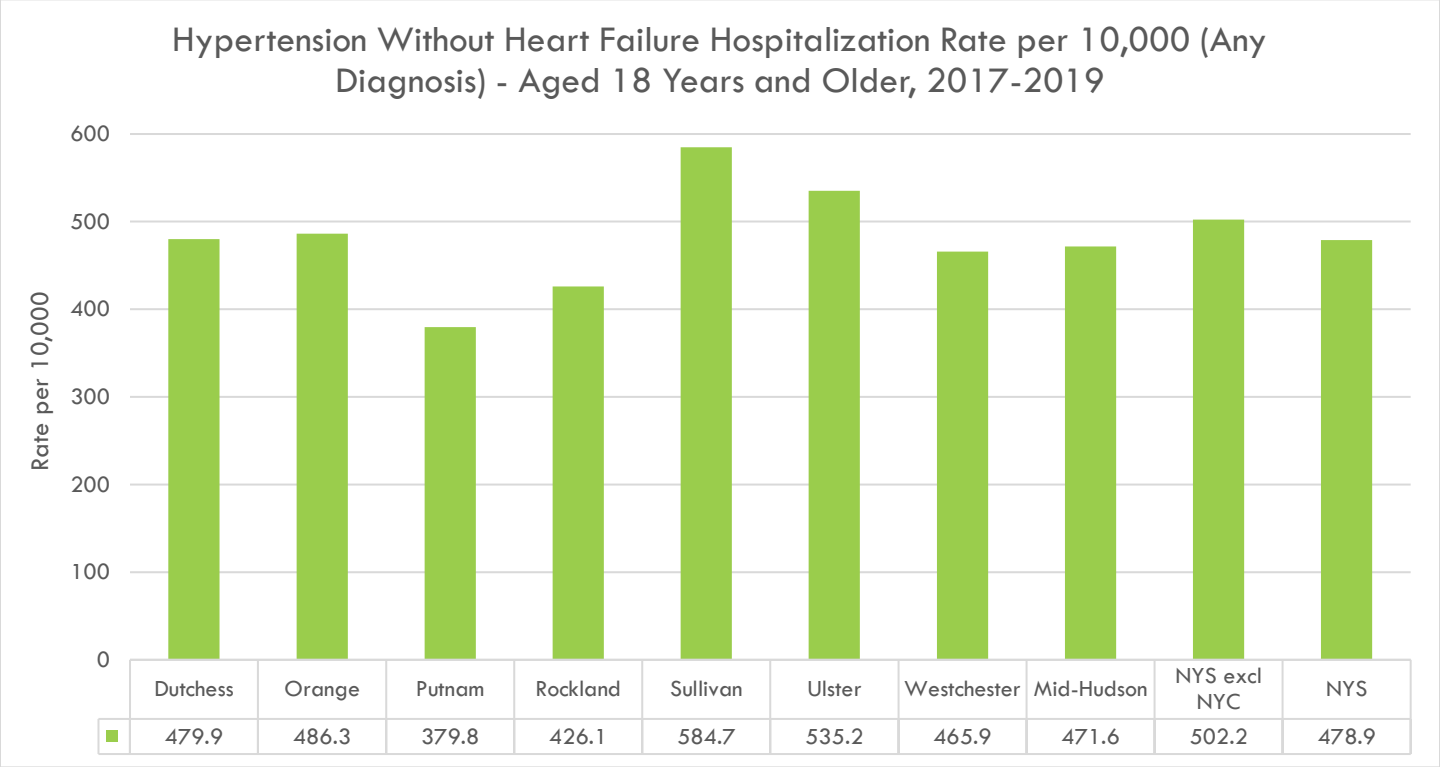


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2017	497.5	524.3	396.7	440.9	610.9	566.9	481.4	508.7	481.4
2018	479.9	486.3	379.8	426.1	584.7	535.2	465.9	502.4	479.5

Note: Y-axis does not begin at zero in order to clearly display trend lines.
Three-year averages are used for counties and single-year rates are used for NYS and NYS excluding NYC.
Only the crude rate for 2017-2019 is available for this measure.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bh51

Recent data from 2017-2019 shows that Sullivan County had the highest hypertension hospitalization rate at 584.7 per 10,000 population, while Putnam had the lowest hospitalization rate at 379.8 per 10,000 population [see Figure 180]. The M-H Region as a whole was slightly below the NYS rate (471.6 vs 478.9 per 10,000 population, respectively). It was also below the NYS rate excluding NYC (502.2 per 10,000 population).

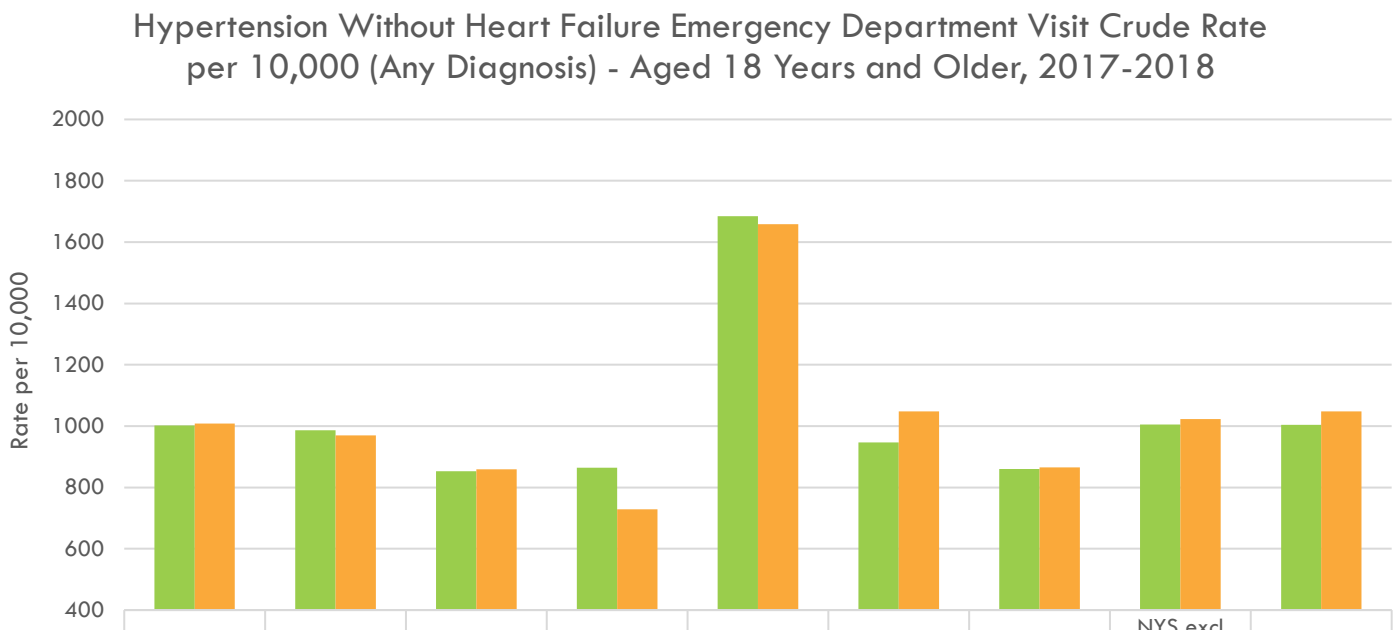
Figure 180



Note: Only the crude rate for 2017-2019 is available for this measure.
The 2019 ED data in New York City may be incomplete and subject to change. Thus, the state rate may be underestimated and subject to change.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bh51

From 2016-2018, ED visits for hypertension increased in NYS and NYS excluding NYC. Rates varied across the M-H Region. Dutchess, Putnam, Ulster, and Westchester Counties had increases in their hypertension ED visit rates, while rates in Orange, Rockland, and Sullivan Counties decreased [see Figure 181].

Figure 181

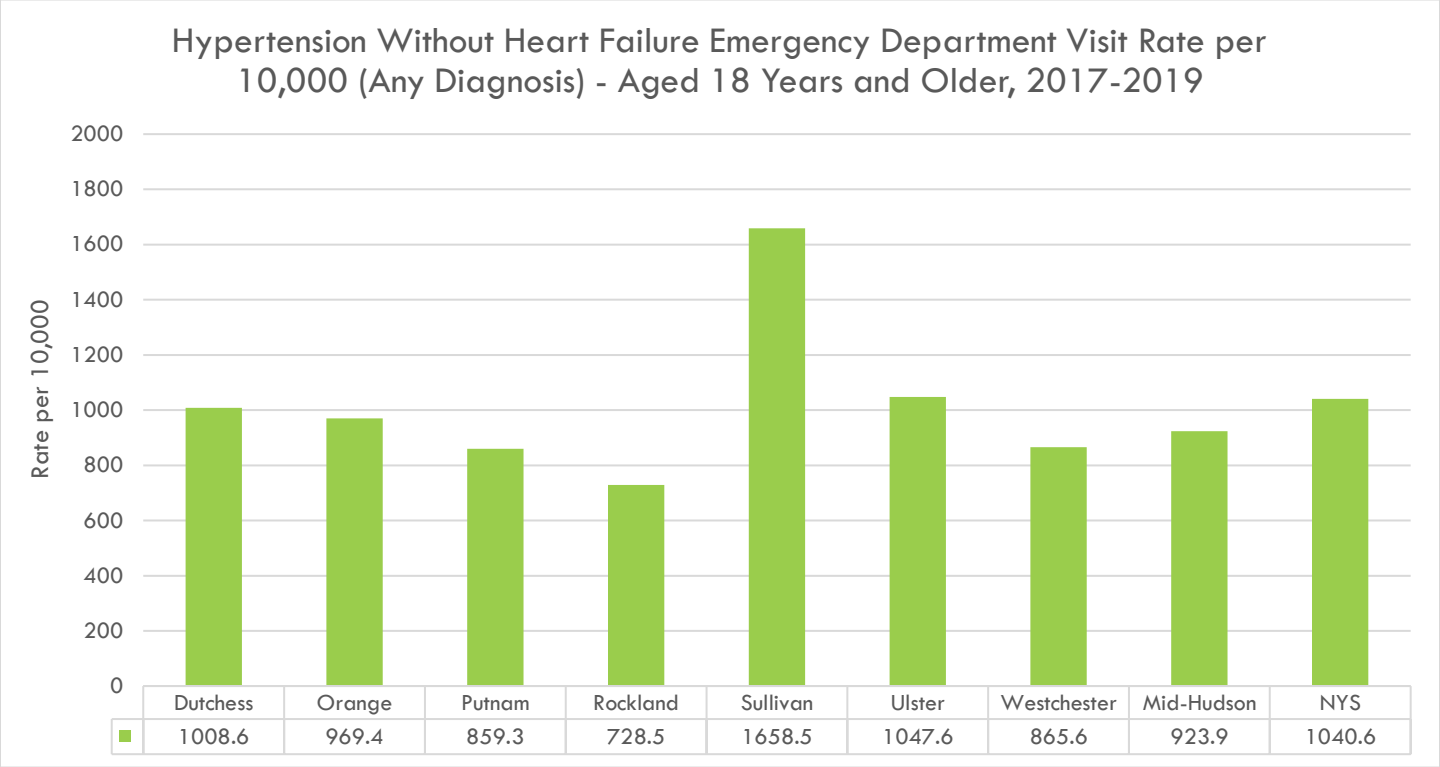


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2017	1002.3	986.3	852.9	864.6	1684.5	946.5	860.1	1005.1	1003.8
2018	1008.6	969.4	859.3	728.5	1658.5	1047.6	865.6	1022.8	1047.8

Note: Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Be4

Recent data from 2017-2019 shows that Sullivan County had the highest rate of ED visits for hypertension, which is more than double that of Rockland County, which had the lowest rate (1658.5 vs 728.5 per 10,000 population, respectively) [see Figure 182].

Figure 182



Note: Only the crude rate for 2017-2019 is available for this measure.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Be4

The three main cardiovascular conditions that affect the general population include coronary heart disease (CHD), cerebrovascular disease, and congestive heart failure (CHF).

CORONARY HEART DISEASE

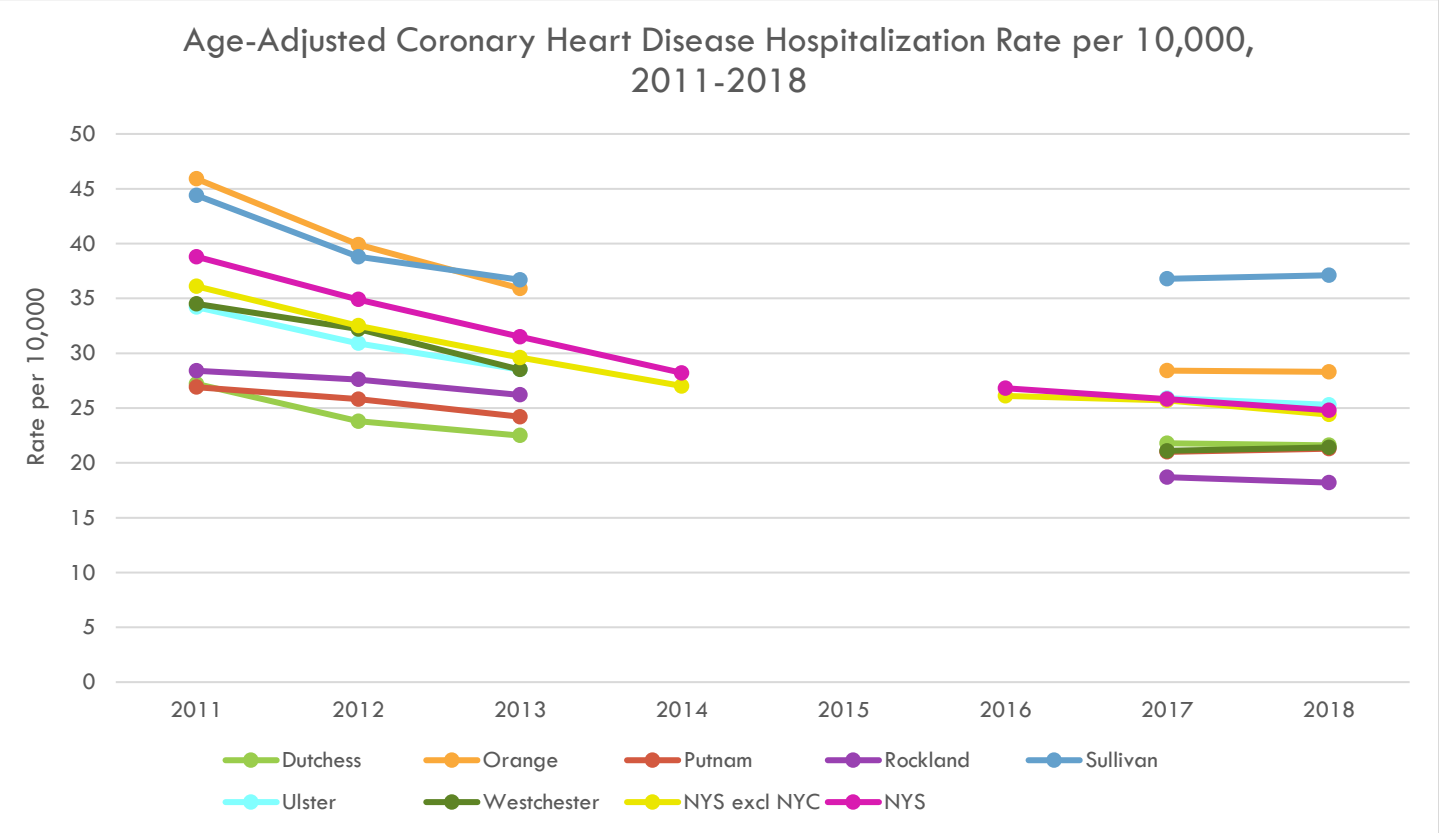
In the US, CHD, also known as coronary artery disease (CAD), is the most common type of CVD. It is caused by a buildup of plaque, which are deposits made up of substances such as fat, cholesterol, and calcium, in the arteries.[136] This can result in angina (chest pain) that usually occurs in the middle or left side of chest.[137] Complete blockage of arteries can lead to a heart attack. However, much can be done to prevent and treat this disease, such as adopting a healthier lifestyle (dietary behaviors, physical activity, reduced or termination of tobacco use) and following up regularly with a medical provider to control conditions that can increase the risk of CHD (high blood pressure, cholesterol, diabetes).

[136] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/heartdisease/coronary_ad.htm, accessed September 2022

[137] Mayo Clinic, https://www.mayoclinic.org/diseases-conditions/coronary-artery-disease/symptoms-causes/syc-20350613, accessed September 2022

When looking at hospitalization rates of CHD from 2011-2013, rates have steadily decreased over time. From 2017-2018, apart from some slight increases in Putnam, Sullivan, and Westchester Counties, rates generally appear to be plateauing [see Figure 183].

Figure 183

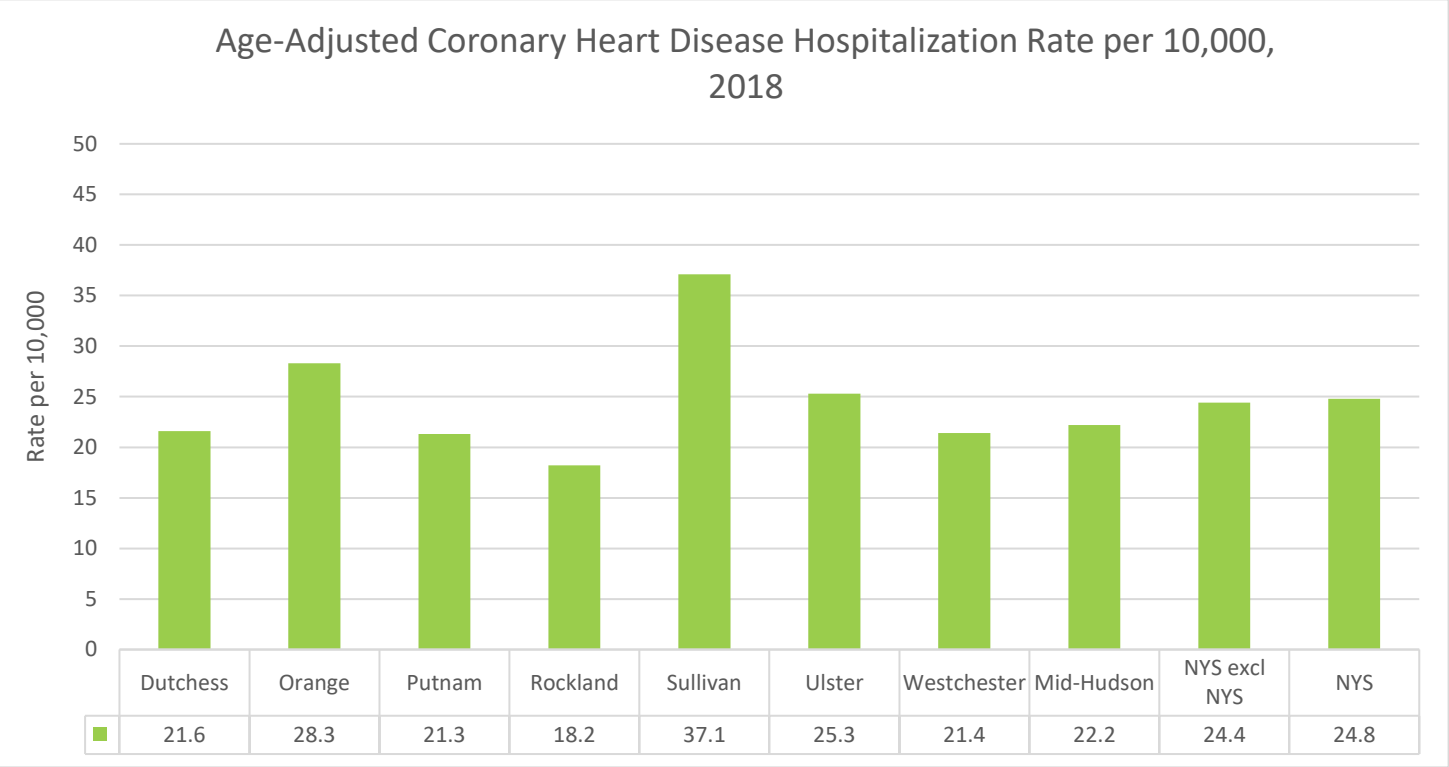


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	27.2	45.9	26.9	28.4	44.4	34.2	34.5	36.1	38.8
2012	23.8	39.9	25.8	27.6	38.8	30.9	32.2	32.5	34.9
2013	22.5	35.9	24.2	26.2	36.7	28.5	28.5	29.6	31.5
2014								27.0	28.2
2015									
2016								26.1	26.8
2017	21.8	28.4	21.0	18.7	36.8	25.9	21.1	25.7	25.8
2018	21.6	28.3	21.3	18.2	37.1	25.3	21.4	24.4	24.8

Note: Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015 from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior. On the graph, the distinction is signified by a dotted line for ICD-9-CM years and a solid line for ICD-10-CM years.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Bh3a

Data from 2018 shows that Sullivan County had the highest CHD hospitalization rate of the seven counties in the M-H Region, and Rockland had the lowest rate (37.1 and 18.2 per 10,000 population, respectively). However, rates in NYS and NYS excluding NYC were slightly higher than rates in the M-H Region (24.8 and 24.4 vs 22.2 per 10,000 population, respectively) [see Figure 184].

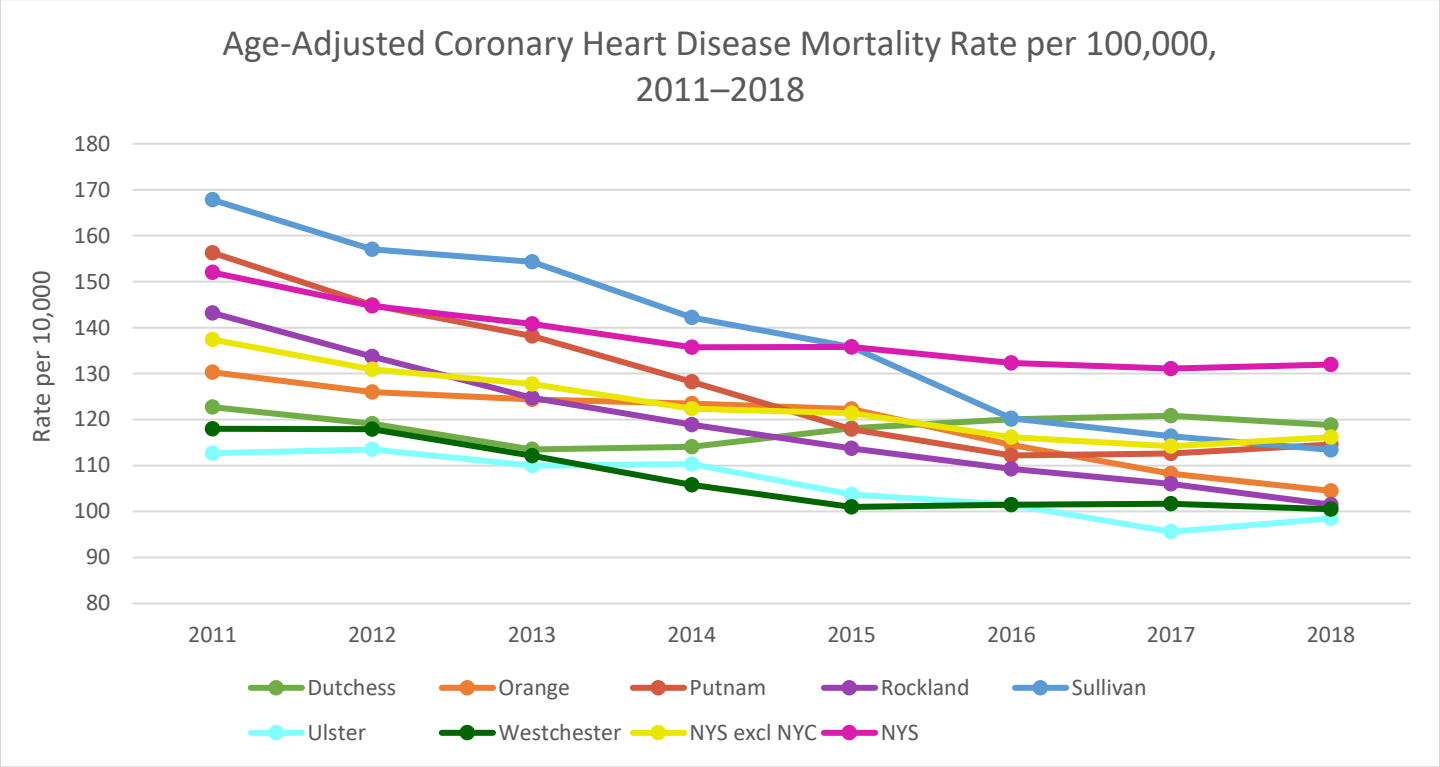
Figure 184



Note: Three-year averages are used for counties and single-year rates are used for Mid-Hudson, NYS, and NYS excluding NYC.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Bh3a

CHD mortality rates have generally decreased over time. From 2015 to 2017, there was a slight increase in mortality rates in Dutchess County, while Putnam, Ulster, and NYS excluding NYC saw a slight increase from 2017 to 2018 [see Figure 185].

Figure 185



Note: Y-axis does not begin at zero in order to clearly display trend lines.

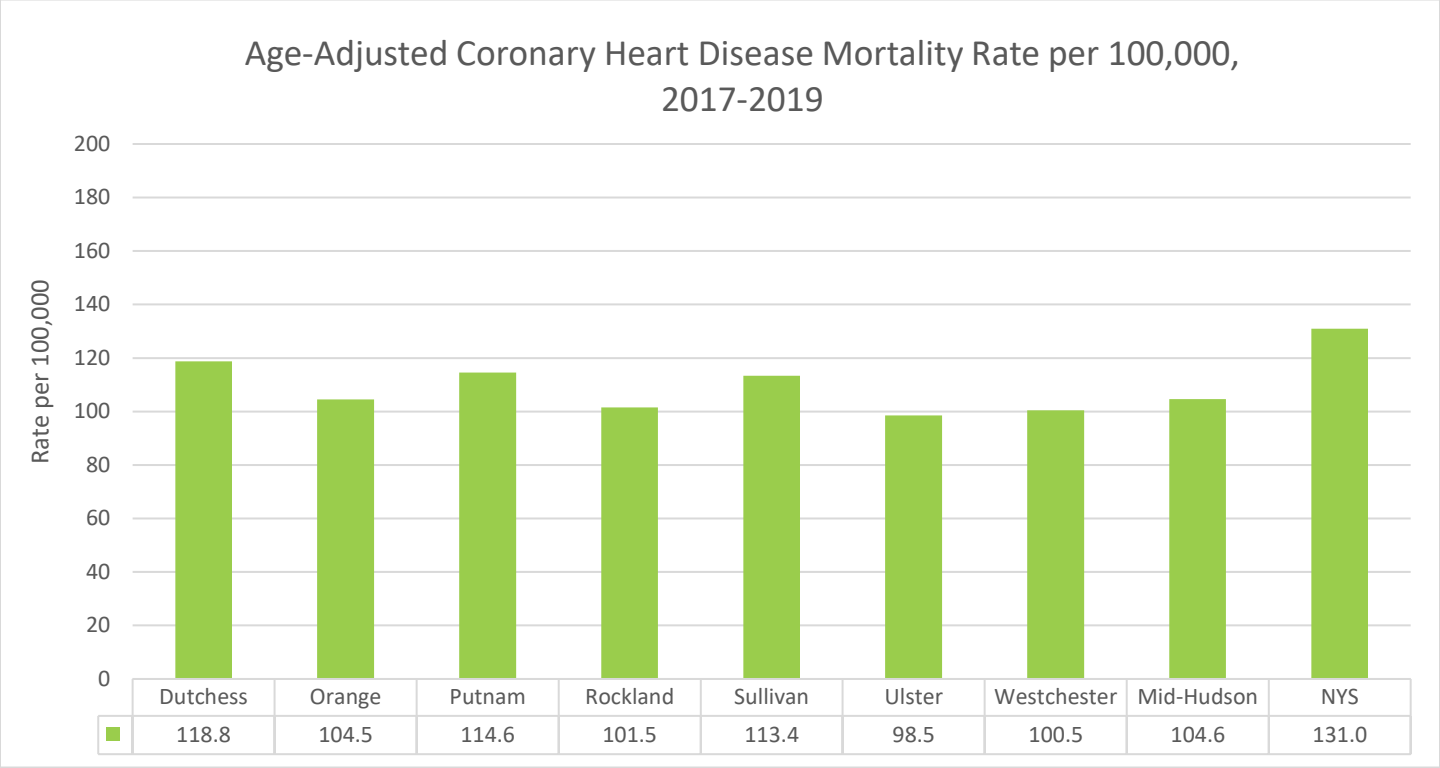
	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	122.7	130.3	156.3	143.2	167.8	112.7	118.0	137.4	152.0
2012	119.1	126.0	144.9	133.7	157.0	113.5	117.9	130.9	144.7
2013	113.5	124.4	138.2	124.7	154.3	110.0	112.1	127.7	140.8
2014	114.1	123.5	128.2	118.9	142.2	110.3	105.8	122.4	135.7
2015	118.1	122.3	117.9	113.7	135.8	103.7	101.0	121.4	135.8
2016	120.1	114.5	112.2	109.3	120.3	101.5	101.5	116.2	132.3
2017	120.8	108.2	112.6	106.0	116.4	95.6	101.7	114.2	131.1
2018	118.8	104.5	114.6	101.5	113.4	98.5	100.5	116.2	132.0

Note: Three-year age-adjusted rates for counties and single-year age-adjusted rates for NYS and NYS excluding NYC are used in both the table and graph above.

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Bd7a

At the county level, recent data from 2017-2019 shows that the CHD mortality rate was highest in Dutchess County and lowest in Ulster County (118.8 and 98.5 per 100,000 population, respectively). The CHD mortality rate in the M-H Region was lower than the NYS rate (104.6 vs 131.0 per 100,000 population, respectively) [see Figure 186]. The Healthy People 2020 goal was to reduce CHD deaths to 103.4 deaths per 100,000 population. With the exception of Rockland, Ulster, and Westchester Counties, none of the other M-H Region counties, or NYS, met this target.

Figure 186



Note: Three-year age-adjusted rates.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bd7a

As mentioned previously, complete blockage of arteries can lead to a heart attack, otherwise known as a myocardial infarction. During a heart attack, part of the heart muscle does not receive enough blood flow and the more time that passes, the greater the damage to the heart muscle.[138] Heart attacks may also be caused by a spasm of the coronary artery that may be induced by tobacco and illicit drug use. In the US, 790,000 Americans have a heart attack ever year and one in five of these heart attacks were silent.[139] Men aged 45 years and older and women aged 55 years and older are more likely to have heart attacks compared to other age groups.[140] The five major symptoms of a heart attack include pain in the jaw, neck, back, arms, or shoulders; feeling weak or fatigued; chest pain; and shortness of breath.[141]

[138] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/heartdisease/heart_attack.htm, accessed September 2022

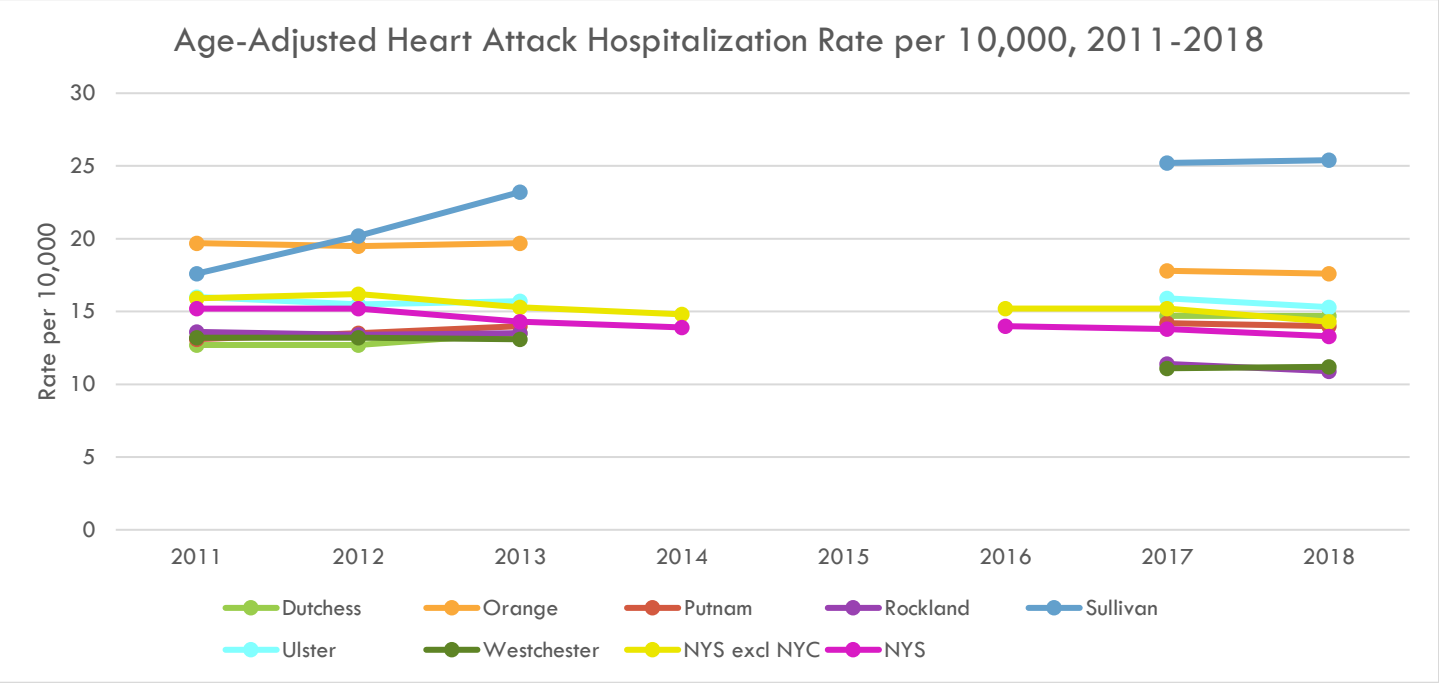
[139] 1MD Nutrition, 2021, https://1md.org/health-guide/heart/disorders/heart-attack#:~:text=%E2%99%A6%20It%20is%20estimated%20that%20a%20heart%20attack,%28damage%20is%20done%2C%20but%20the%20person%20is%20unaware%29., accessed September 2022

[140] Mayo Clinic, https://www.mayoclinic.org/diseases-conditions/heart-attack/symptoms-causes/syc-20373106, accessed September 2022

[141] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/heartdisease/heart_attack.htm, accessed September 2022

As seen in Figure 187, while a majority of the heart attack hospitalization rates in the M-H Region have slightly fluctuated from 2011-2018, Sullivan County saw a slight increase following 2012.

Figure 187

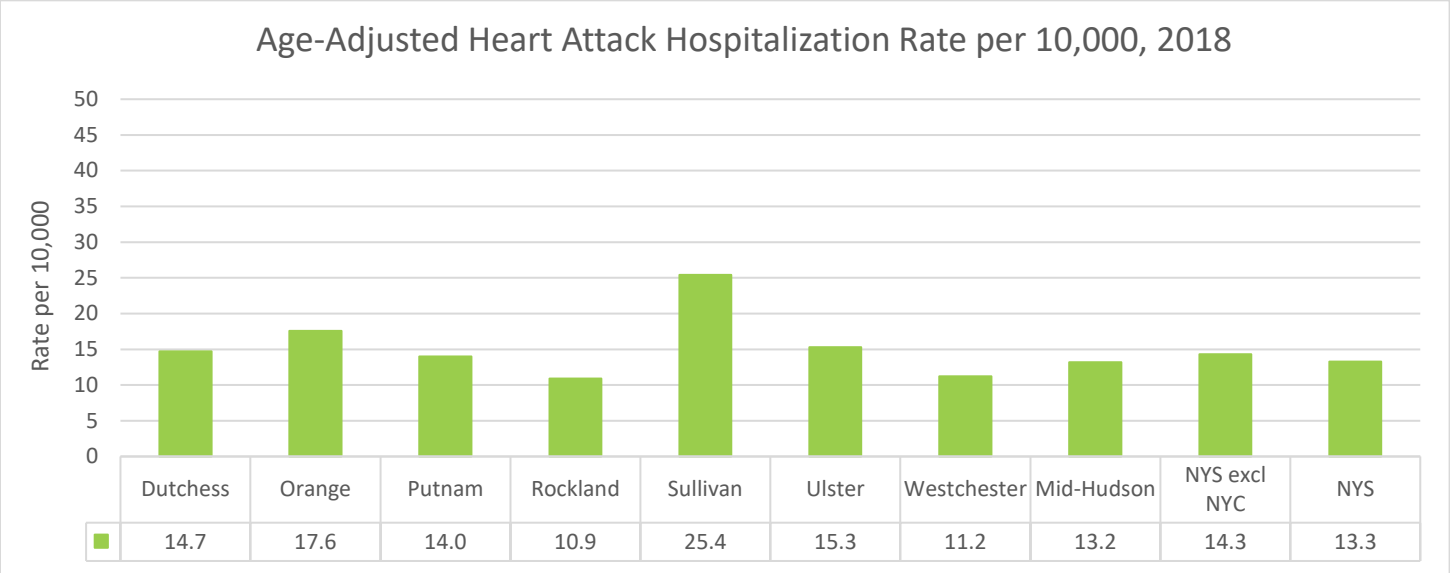


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	12.7	19.7	13.1	13.6	17.6	16.0	13.2	15.9	15.2
2012	12.7	19.5	13.5	13.4	20.2	15.5	13.2	16.2	15.2
2013	13.5	19.7	14.0	13.5	23.2	15.7	13.1	15.3	14.3
2014								14.8	13.9
2015									
2016								15.2	14.0
2017	14.7	17.8	14.2	11.4	25.2	15.9	11.1	15.2	13.8
2018	14.7	17.6	14.0	10.9	25.4	15.3	11.2	14.3	13.3

Note: Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015 from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Bh49a

When looking at recent data from 2018, the heart attack hospitalization rate was highest in Sullivan County (25.0 per 10,000 population). This rate was higher than rates in the M-H Region, NYS, and NYS excluding NYC (13.2, 13.3, and 14.3 per 10,000 population, respectively) [see Figure 188].

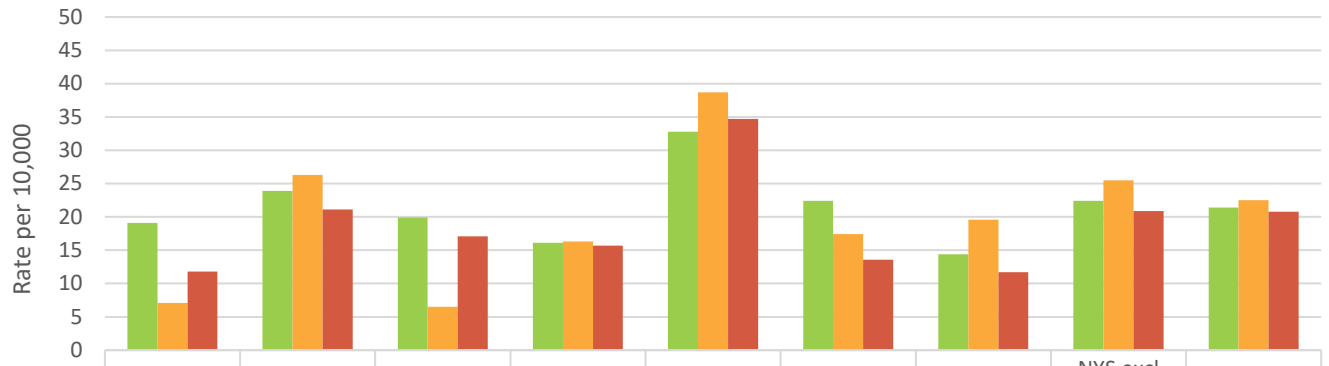
Figure 188



Note: Three-year averages are used for counties and single-year rates are used for Mid-Hudson, NYS, and NYS excluding NYC.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Bh49a

When stratifying this data by race/ethnicity, trends are not consistent through each county. For example, non-Hispanic White adults had higher CHD hospitalization rates compared to the other racial/ethnic groups in Dutchess, Putnam, and Ulster Counties. However, in the remaining counties, NYS, and NYS excluding NYC, non-Hispanic Black adults had higher CHD hospitalization rates [see Figure 189].

Figure 189



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS +
Non-Hispanic White	19.1	23.9	19.9	16.1	32.8	22.4	14.4	22.4	21.4
Non-Hispanic Black	7.1	26.3	6.5 *	16.3	38.7	17.4	19.6	25.5	22.5
Hispanic	11.8	21.1	17.1	15.7	34.7	13.6	11.7	20.9	20.8

: The rate is unstable.

+: *The 2019 ED data in New York City may be incomplete and subject to change. Thus, the state rates may be underestimated and subject to change.*

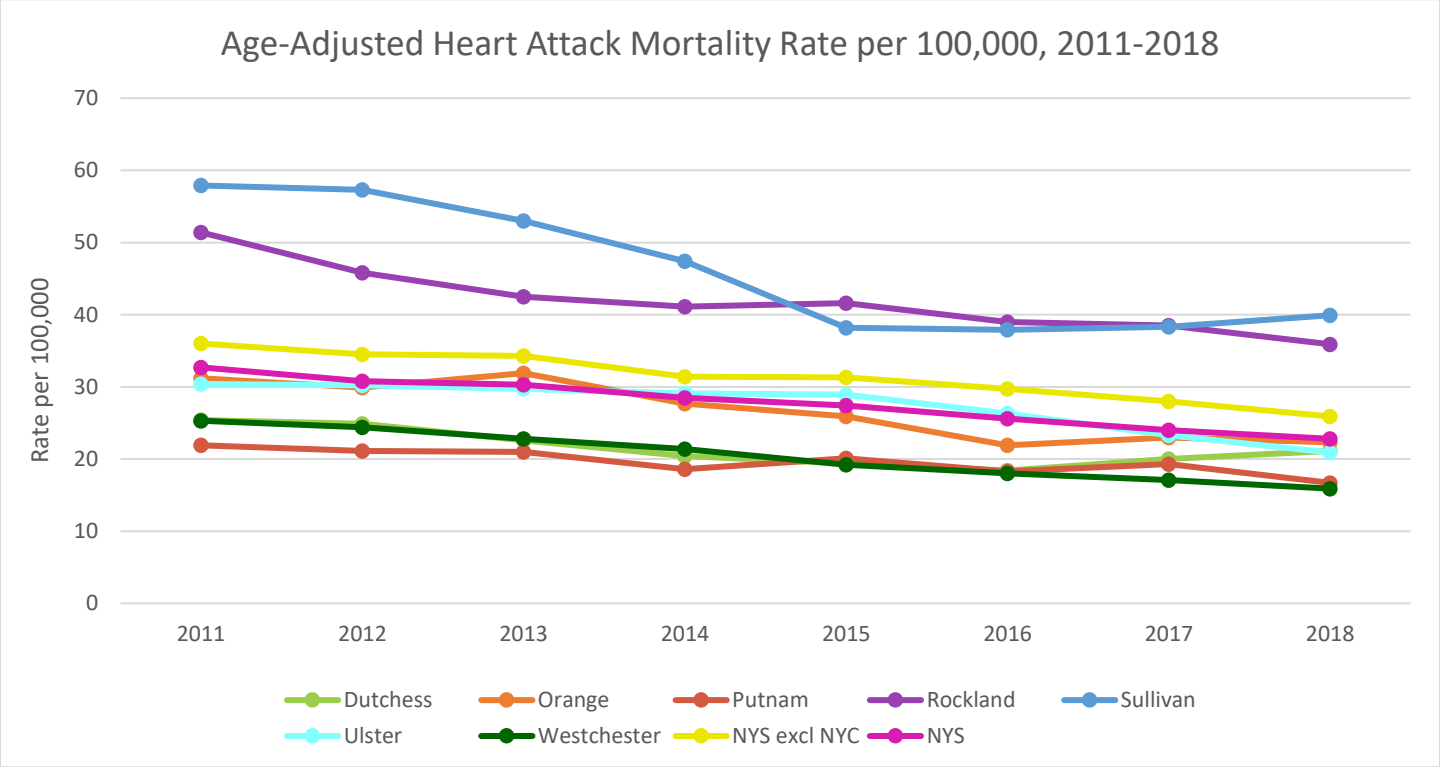
Note: Three-year age-adjusted rates.

Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2021

https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

From 2011-2018, heart attack mortality rates have generally decreased at the county and state level, with some fluctuations during different time periods for each county [see Figure 190].

Figure 190



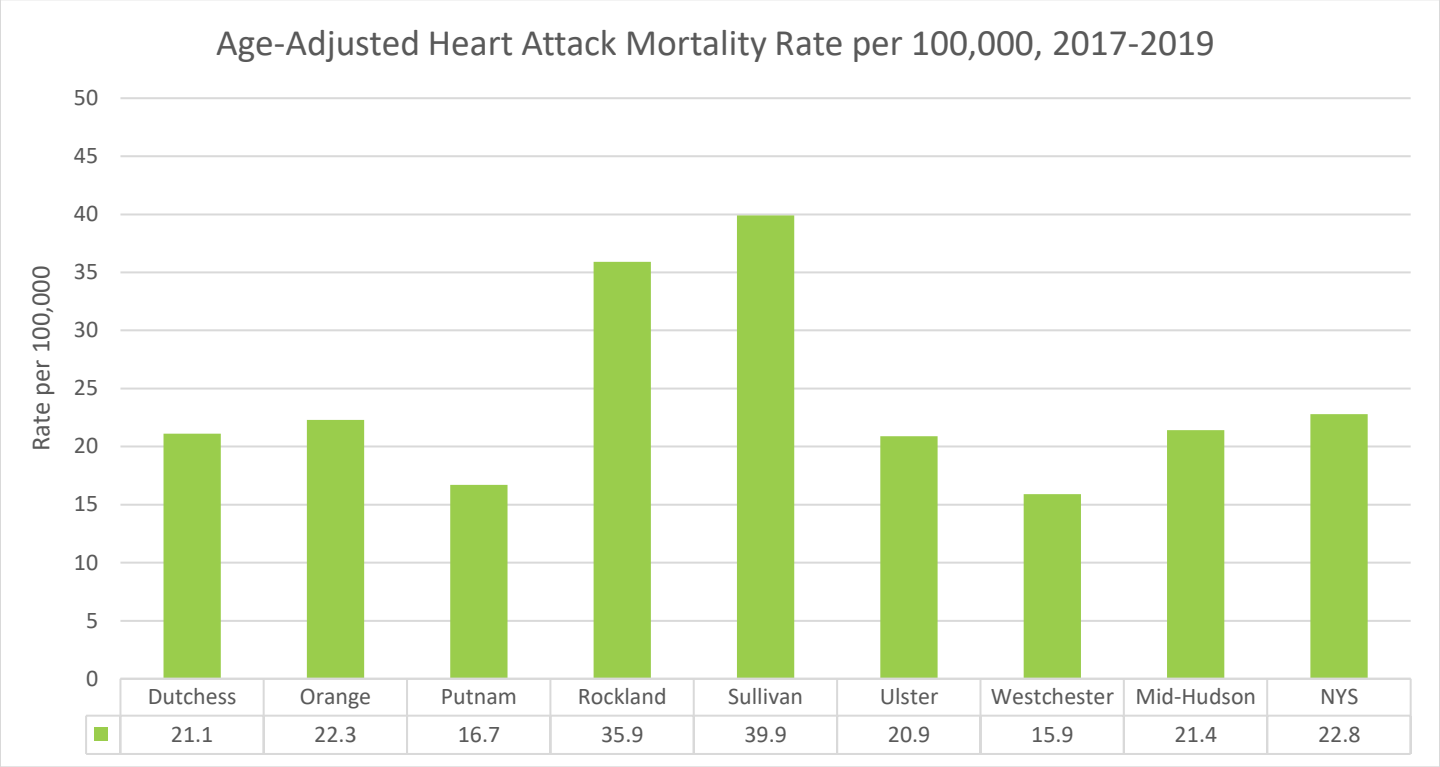
	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	25.4	31.2	21.9	51.4	57.9	30.4	25.3	36.0	32.7
2012	24.9	29.9	21.1	45.8	57.3	30.2	24.4	34.5	30.8
2013	22.6	31.9	21.0	42.5	53.0	29.7	22.8	34.3	30.3
2014	20.4	27.7	18.6	41.4	47.4	29.1	21.4	31.4	28.5
2015	19.4	25.9	20.1	41.6	38.2	28.9	19.2	31.3	27.4
2016	18.4	21.9	18.3	39.0	37.9	26.3	18.0	29.7	25.6
2017	20.0	23.0	19.3	38.5	38.3	23.3	17.1	28.0	24.0
2018	21.1	22.3	16.7	35.9	39.9	20.9	15.9	25.9	22.8

Note: Three-year age-adjusted rates for counties and single-year age-adjusted rates for NYS and NYS excluding NYC are used in both the table and graph above.

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bd35a

At the county level, recent data from 2017-2019 shows Sullivan County had the highest heart attack mortality rate of the seven counties (39.9 per 100,000 population). This rate was higher than the M-H Region as a whole and NYS (21.4 and 22.8 per 100,000 population, respectively) [see Figure 191].

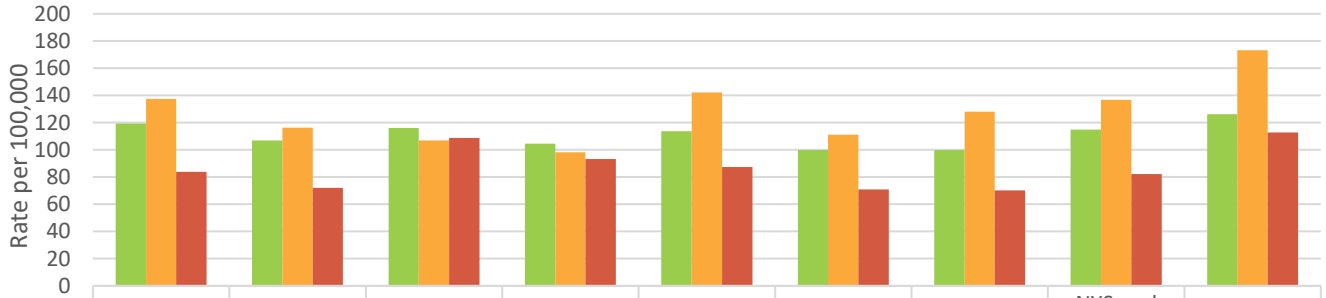
Figure 191



Note: Three-year age-adjusted rates.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bd35a

Mortality rates stratified by race/ethnicity showed a more consistent trend across the seven counties in the M-H Region, as well as NYS and NYS excluding NYC. As seen in Figure 192, non-Hispanic Black adults had higher mortality rates in most of the counties and at the state level, with the exception of Rockland and Putnam Counties, where non-Hispanic White adults had higher CHD mortality rates. However, it is important to note that the rate for Putnam County is unstable and should be interpreted with caution.

Figure 192



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	119.5	106.8	116.2	104.5	113.7	99.9	99.9	115.0	126.2
Non-Hispanic Black	137.4	116.3	106.9 *	98.2	142.2	111.1	128.0	136.9	173.2
Hispanic	83.9	72.1	108.8	93.2	87.4	70.9	70.3	82.3	112.8

*: *The rate is unstable.*
Note: Three-year age-adjusted rates.
Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

CEREBROVASCULAR DISEASE

Cerebrovascular disease, also called a stroke, occurs when blood supply to the brain is blocked, which can lead to extensive damage to the brain and even death. There are three main types of stroke: ischemic stroke, hemorrhagic stroke, and transient ischemic attack (TIA).[142] Ischemic stroke occurs when blood clots or plaques block the blood vessels to the brain, causing the brain to receive decreased oxygen. Almost 87% of strokes are ischemic strokes. A hemorrhagic stroke occurs when a blood vessel bursts inside the brain and the blood building up in the tissues causes severe damage. A TIA, which is also called a mini-stroke, occurs when blood flow is blocked to the brain for a short period of time, usually five minutes or less. More than a third of people who have a TIA and do not receive treatment have a major stroke within one year of the TIA.[143]

It is important to recognize the signs and symptoms of a stroke in order for action to be taken quickly. Signs of a stroke include numbness in the face or extremities, often on one side of the body; confusion or difficulty speaking; vision problems; loss of balance or lack of coordination; or a severe headache.[144] Some risk factors for a stroke include lifestyle behaviors (unhealthy diet, decreased physical activity, use of illicit drugs); cigarette smoking; medical conditions, including high blood pressure, high cholesterol, diabetes, other types of CVDs, and family history; and being aged 55 years and older.[145]

[142] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/stroke/types_of_stroke.htm, accessed June 2022

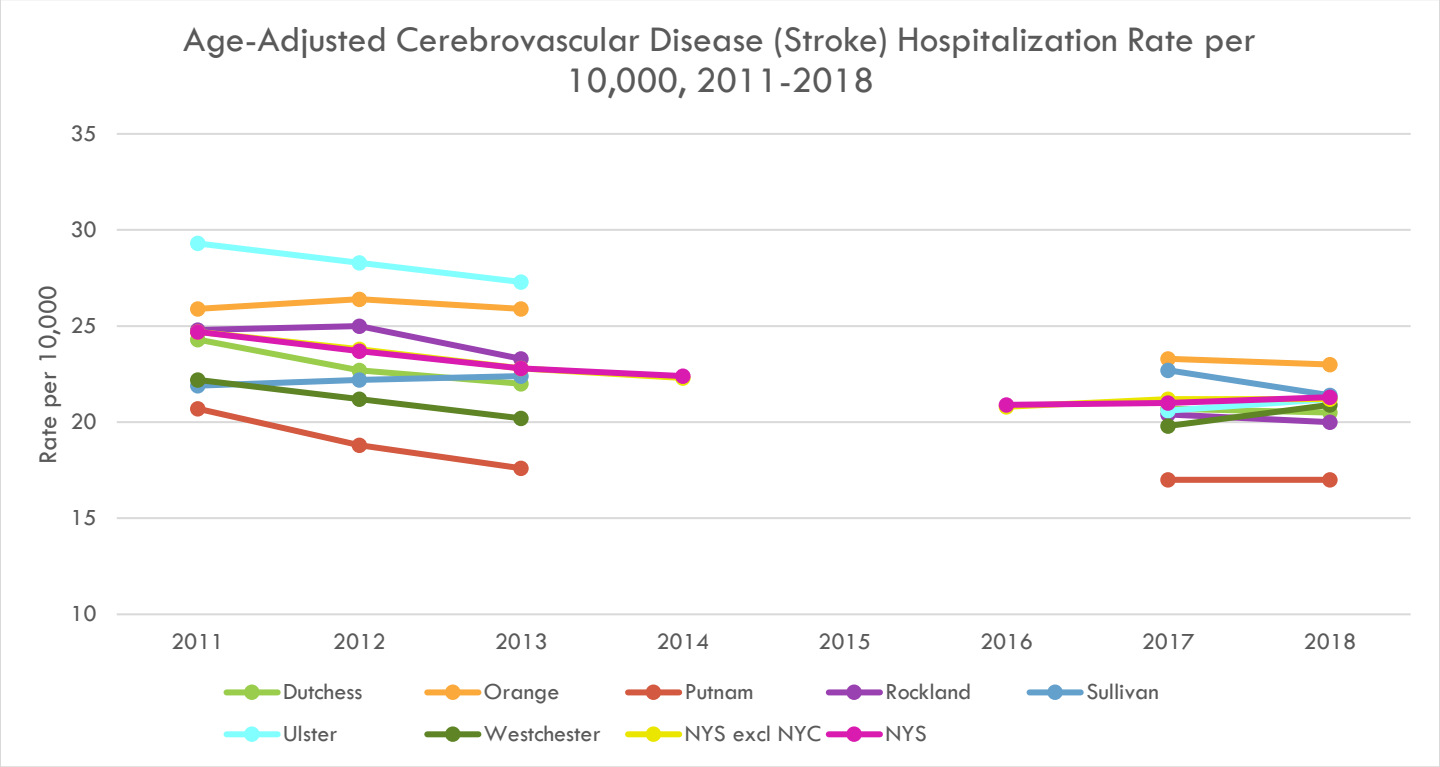
[143] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/stroke/types_of_stroke.htm, accessed June 2022

[144] Mayo Clinic, 2022, https://www.mayoclinic.org/diseases-conditions/stroke/symptoms-causes/syc-20350113, accessed June 2022

[145] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/stroke/risk_factors.htm, accessed September 2022

According to Figure 193, stroke hospitalization rates from 2017 to 2018 have generally remained stable in the M-H Region, NYS, and NYS excluding NYC.

Figure 193



Note: Y-axis does not begin at zero in order to clearly display trend lines.

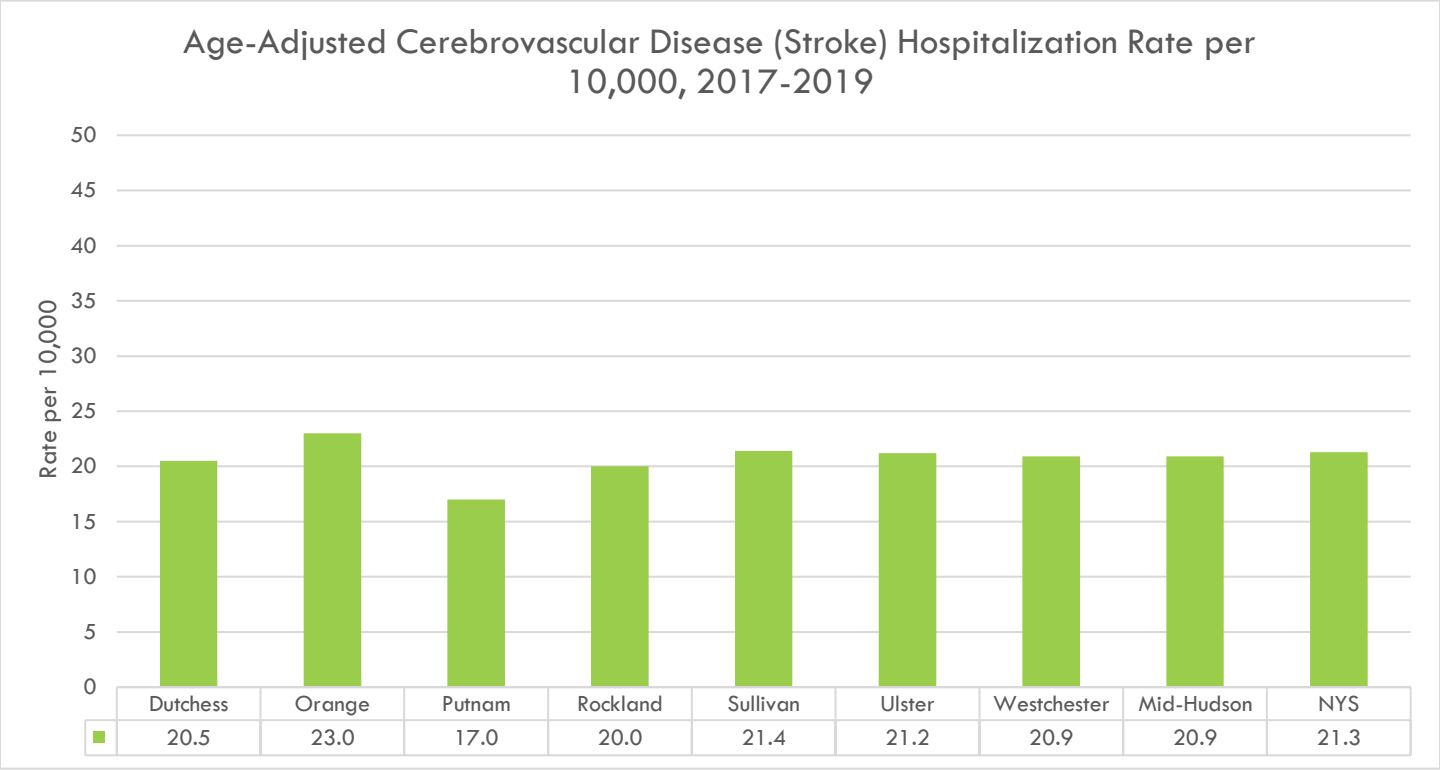
	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	24.3	25.9	20.7	24.8	21.9	29.3	22.2	24.7	24.7
2012	22.7	26.4	18.8	25.0	22.2	28.3	21.2	23.8	23.7
2013	22.0	25.9	17.6	23.3	22.4	27.3	20.2	22.8	22.8
2014								22.3	22.4
2015									
2016								20.8	20.9
2017	20.7	23.3	17.0	20.4	22.7	20.6	19.8	21.2	21.0
2018	20.5	23.0	17.0	20.0	21.4	21.2	20.9	21.2	21.3

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015 from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bh5a

Recent data from 2017-2019 shows that Orange County had the highest stroke hospitalization rate of the seven counties in the M-H Region, while Putnam had the lowest rate (23.0 and 17.0 per 10,000 population, respectively) [see Figure 194].

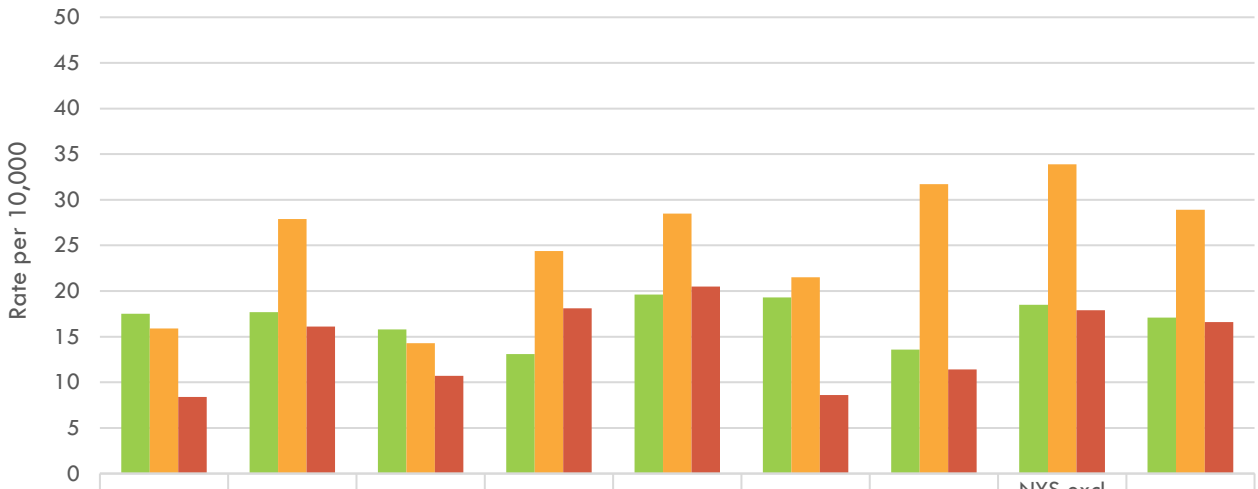
Figure 194



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bh5a

When stratifying data by race/ethnicity, non-Hispanic Black adults had higher rates of stroke hospitalization compared to other racial/ethnic groups in the majority of the counties in the M-H Region, NYS, and NYS excluding NYC. This excludes Putnam County, where Hispanic adults had the highest hospitalization rates [see Figure 195].

Figure 195



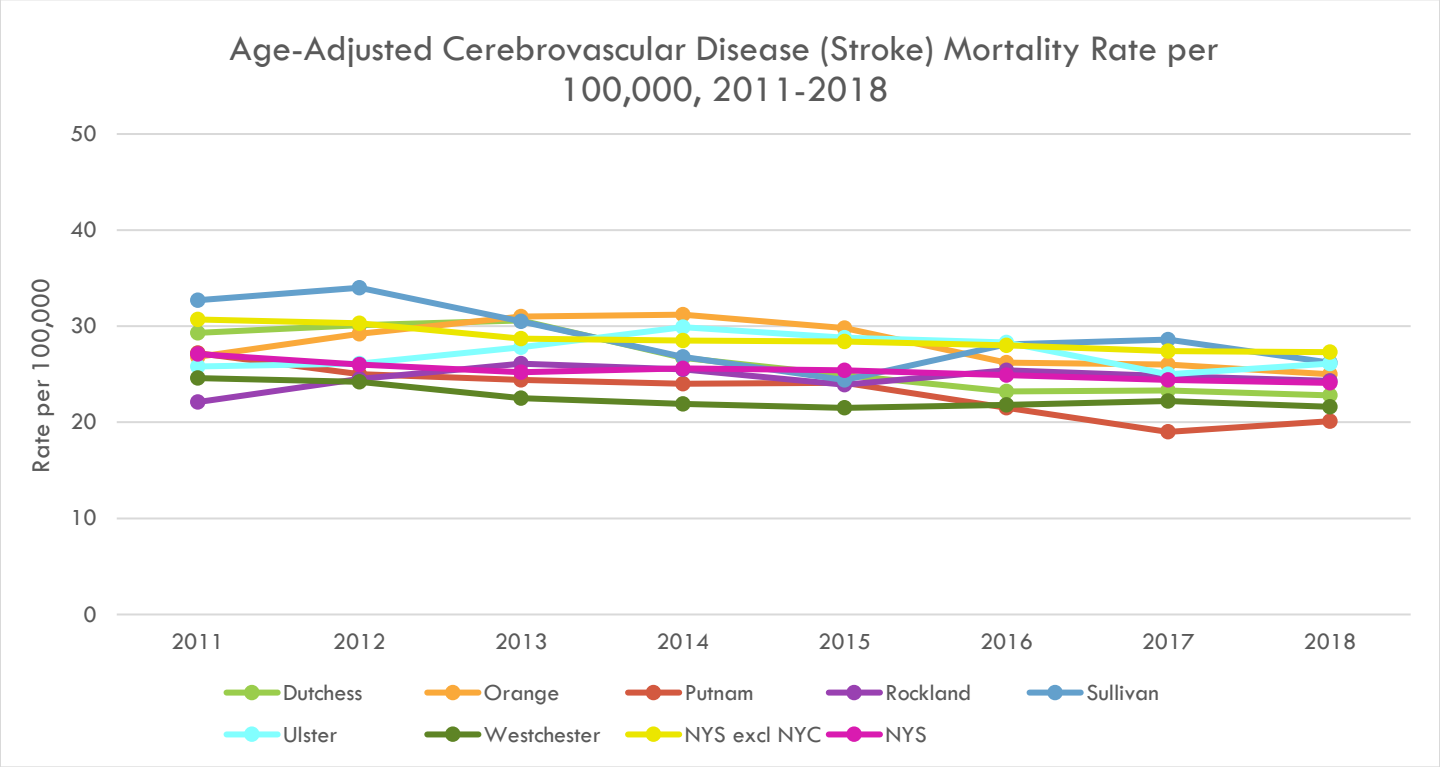
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS +
Non-Hispanic White	17.5	17.7	15.8	13.1	19.6	19.3	13.6	18.5	17.1
Non-Hispanic Black	15.9	27.9	14.3	24.4	28.5	21.5	31.7	33.9	28.9
Hispanic	8.4	16.1	10.7	18.1	20.5	8.6	11.4	17.9	16.6

+: The 2019 ED data in New York City may be incomplete and subject to change. Thus, the state rates may be underestimated and subject to change.

Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2021
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

From 2011 to 2018, cerebrovascular disease mortality rates generally decreased in counties in the M-H Region with the exception of Rockland and Ulster Counties. Rockland County went from a mortality rate of 22.1 per 100,000 in 2011 to 24.3 per 100,000 in 2018. Ulster County went from a rate of 25.8 in 2011, peaked in 2014 with a rate of 29.9 and went to a mortality rate of 26.1 per 100,000 in 2018 [see Figure 196].

Figure 196

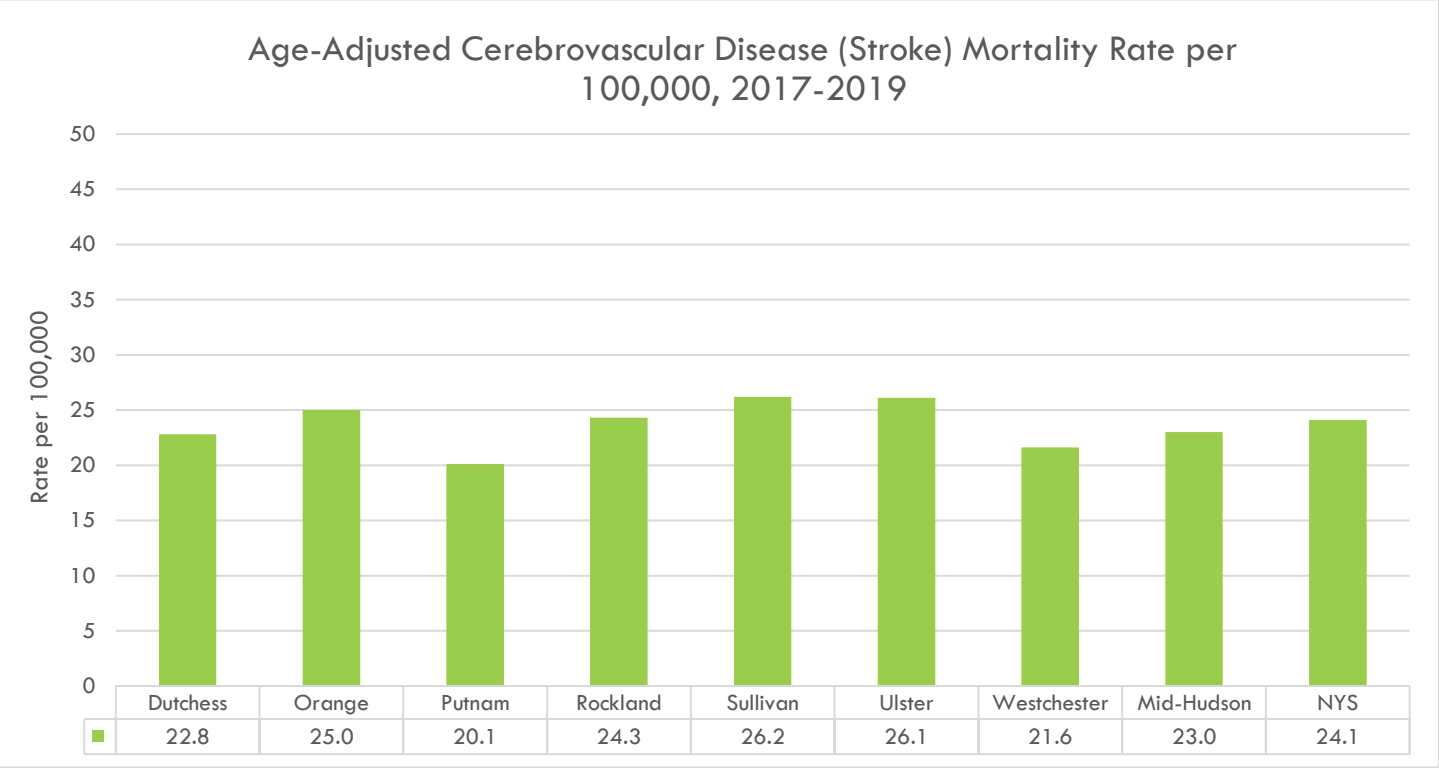


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	29.3	26.8	27.2	22.1	32.7	25.8	24.6	30.7	27.1
2012	30.1	29.2	25.0	24.5	34.0	26.1	24.2	30.3	26.0
2013	30.6	31.0	24.4	26.1	30.5	27.8	22.5	28.7	25.2
2014	26.7	31.2	24.0	25.5	26.8	29.9	21.9	28.5	25.6
2015	24.9	29.8	24.1	23.9	24.4	28.8	21.5	28.4	25.4
2016	23.2	26.2	21.5	25.4	28.1	28.3	21.8	28.0	24.9
2017	23.3	26.0	19.0	24.8	28.6	25.0	22.2	27.4	24.4
2018	22.8	25.0	20.1	24.3	26.2	26.1	21.6	27.3	24.1

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bd13a

Recent data from 2017-2019 shows that the stroke mortality rate was highest in Sullivan County (26.2 per 100,000 population). This rate was higher than the M-H Region and NYS (23.0 and 24.1 per 100,000 population, respectively) [see Figure 197]. The Healthy People 2020 goal was to reduce stroke deaths in the US to 34.8 deaths per 100,000 population. NYS and all counties in the M-H Region met this target. The new target to reduce stroke deaths in Healthy People 2030 is 33.4 per 100,000.

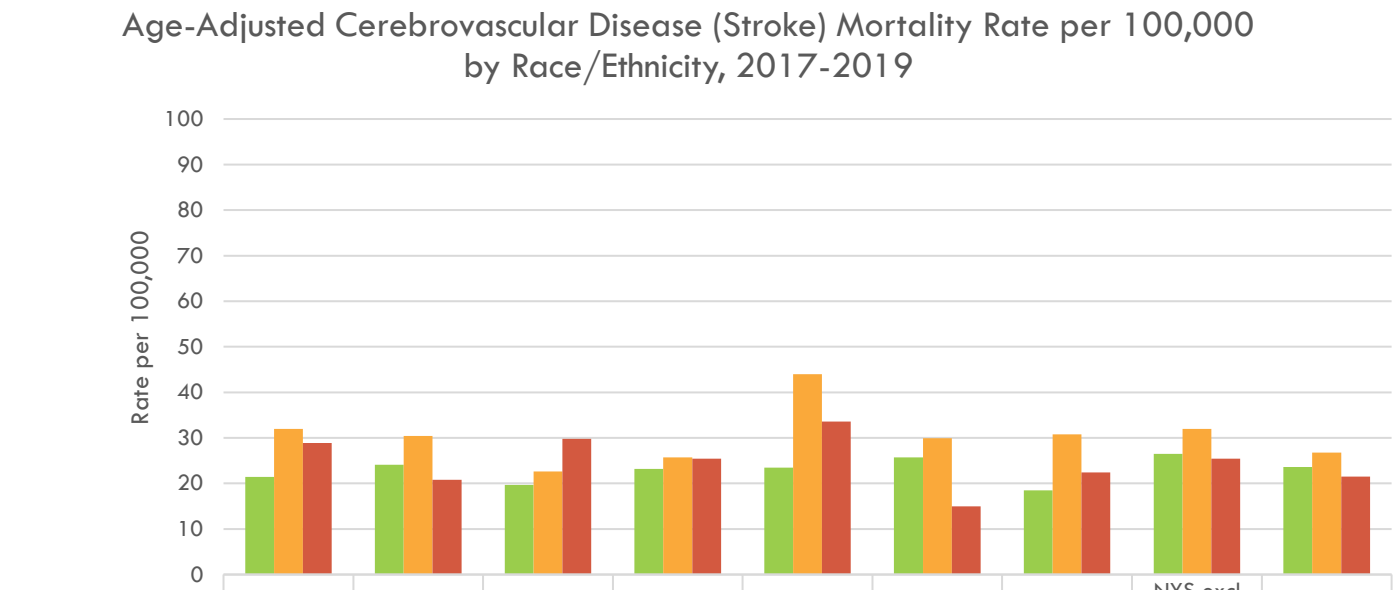
Figure 197



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bd13a

When stratifying this data by race/ethnicity, the rates differ among each county. The majority of the counties in the M-H Region had a higher rate of non-Hispanic Black adults who died from a stroke. Putnam County is an exception with the Hispanic adult population having a higher rate of stroke mortality, though the rate is statistically unstable [see Figure 198].

Figure 198



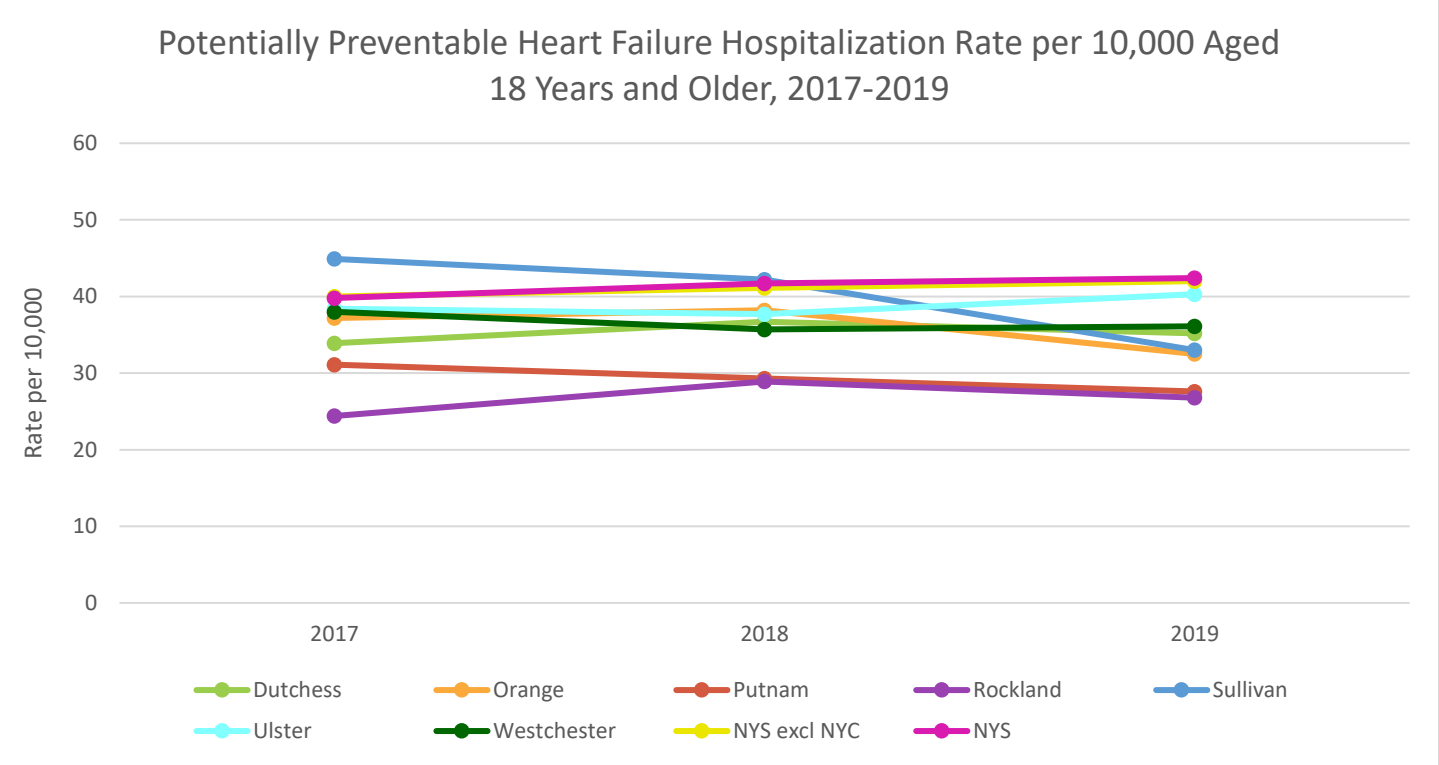
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	21.4	24.1	19.7	23.2	23.5	25.7	18.5	26.5	23.6
Non-Hispanic Black	32.0	30.4	22.6 *	25.7	44.0 *	29.9 *	30.8	32.0	26.8
Hispanic	28.9	20.8	29.8 *	25.4	33.6 *	15.0 *	22.4	25.4	21.5

*: *The rate is unstable.*
Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

PREVENTABLE HEART FAILURE

Among the counties in the M-H Region, potentially preventable heart failure hospitalization rates have only seen marginal variation in recent years, with Dutchess, Rockland, and Ulster Counties experiencing slight increases and Orange, Putnam, Sullivan, and Westchester Counties experiencing slight decreases. At the state level, overall slight increases in rates were seen from 2017-2019 [see Figure 199].

Figure 199

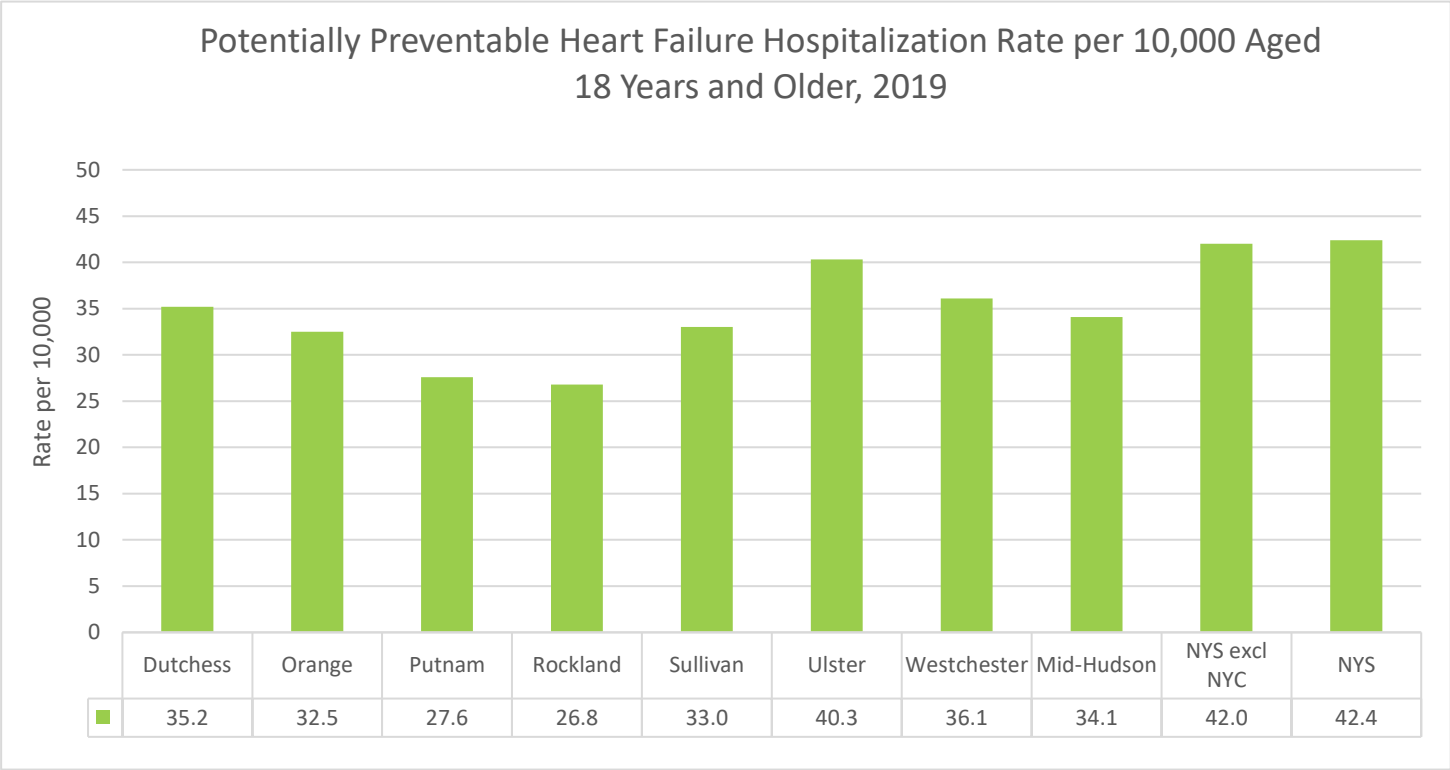


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2017	33.9	37.2	31.1	24.4	44.9	38.4	38.0	40.0	39.8
2018	36.7	38.2	29.3	28.9	42.2	37.7	35.7	41.1	41.7
2019	35.2	32.5	27.6	26.8	33.0	40.3	36.1	42.0	42.4

Note: Single-year crude rates.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Bh4

In 2019, the potentially preventable heart failure hospitalization rate was highest in Ulster County (40.3 per 10,000 population), while the lowest was in Rockland County (26.8 per 10,000 population). The M-H Region had a lower hospitalization rate compared to NYS and NYS excluding NYC (34.1 vs 42.4 and 42.0 per 10,000 population, respectively) [see Figure 200].

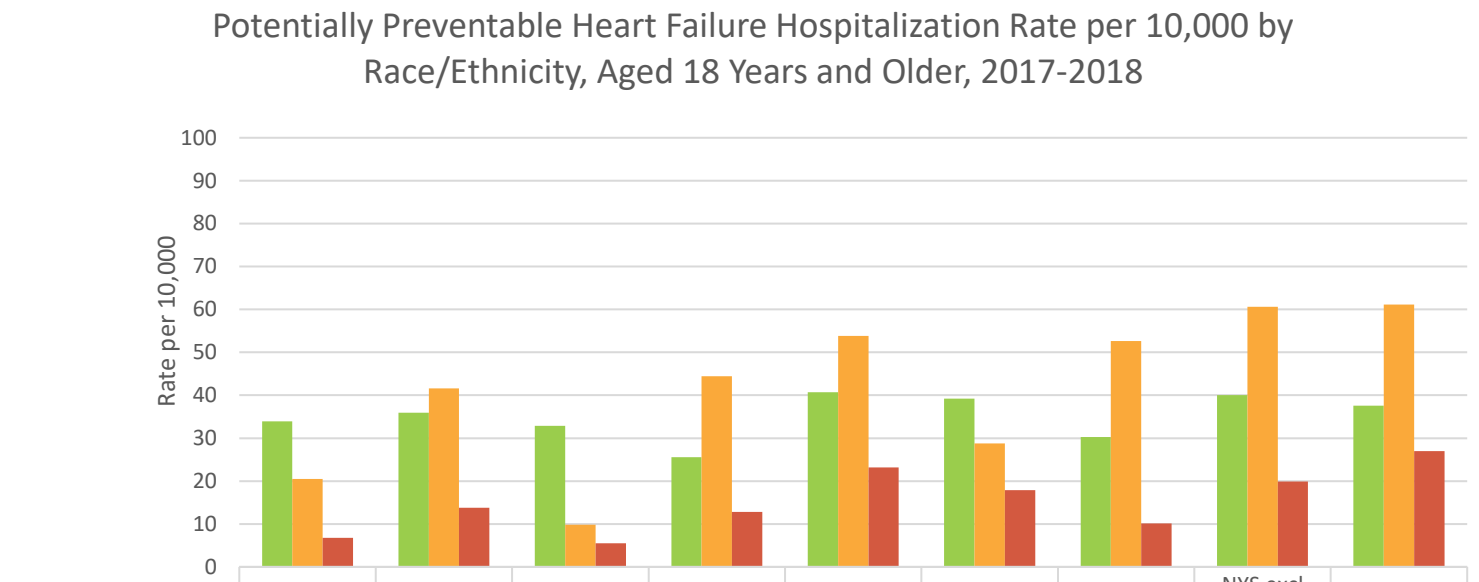
Figure 200



Note: Single-year crude rates
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bh4

When stratifying data by race/ethnicity, the non-Hispanic Black population had the highest potentially preventable heart failure hospitalization rates in the majority of the M-H Region counties, as well as NYS and NYS excluding NYC [see Figure 201]. However, in Dutchess, Putnam, and Ulster Counties, the non-Hispanic White population had the highest rate.

Figure 201

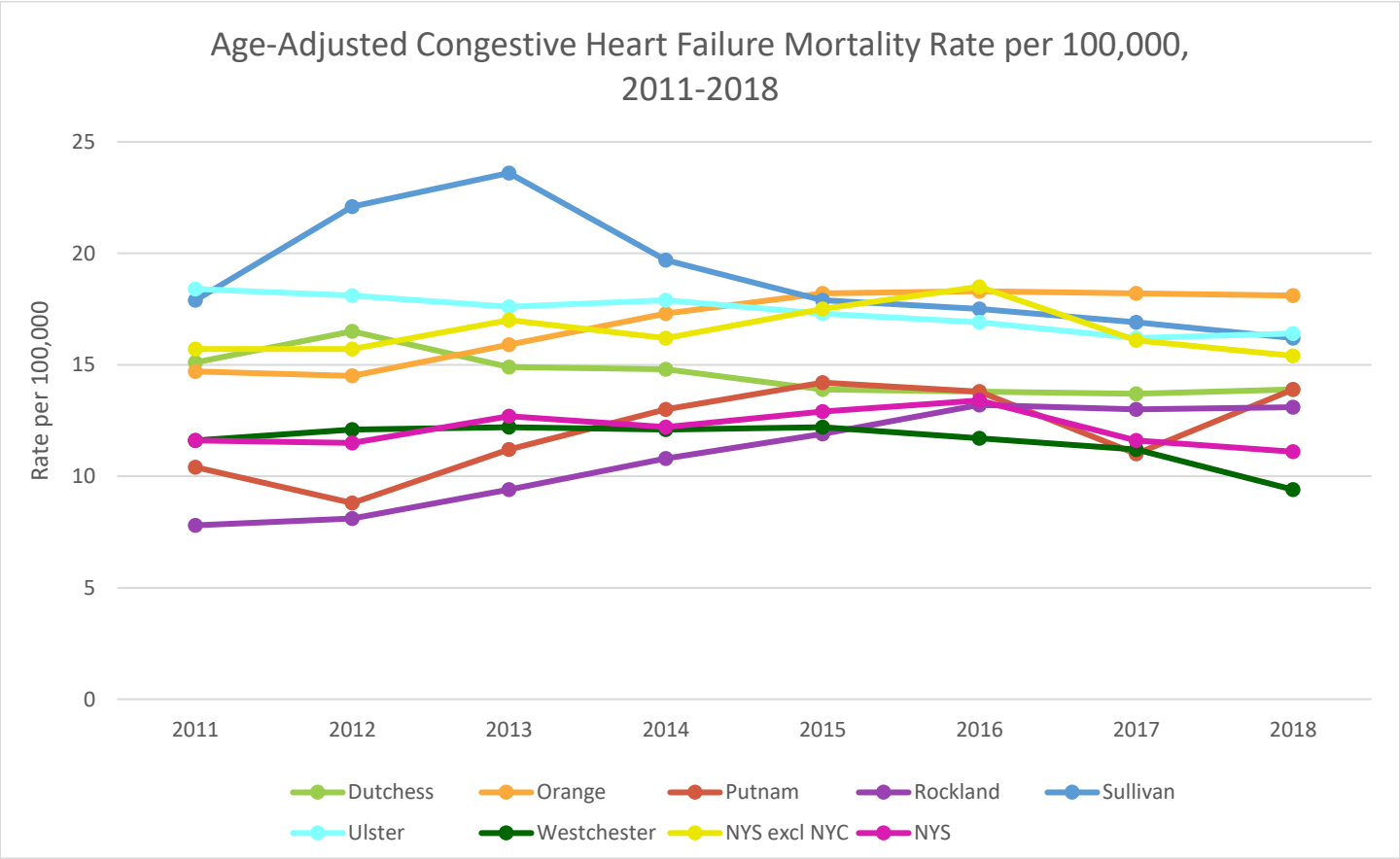


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	33.9	35.9	32.9	25.6	40.7	39.2	30.3	40.0	37.6
Non-Hispanic Black	20.5	41.6	9.8 *	44.4	53.8	28.8	52.6	60.6	61.1
Hispanic	6.8	13.8	5.5	12.8	23.2	17.9	10.1	19.9	27.0

: The rate is unstable.
Note: Two-year crude rates.
Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

When looking at congestive heart failure (CHF) mortality rates from 2011-2018, apart from some slight fluctuations, NYS and NYS excluding NYC remained relatively consistent. In the M-H Region, trends varied by county. Sullivan County initially experienced a slight increase, which subsequently proceeded to marginally decrease in recent years. Counties such as Orange, Putnam, and Rockland experienced slight increases, while the remaining counties experienced slight decreases over the eight-year period [see Figure 202].

Figure 202

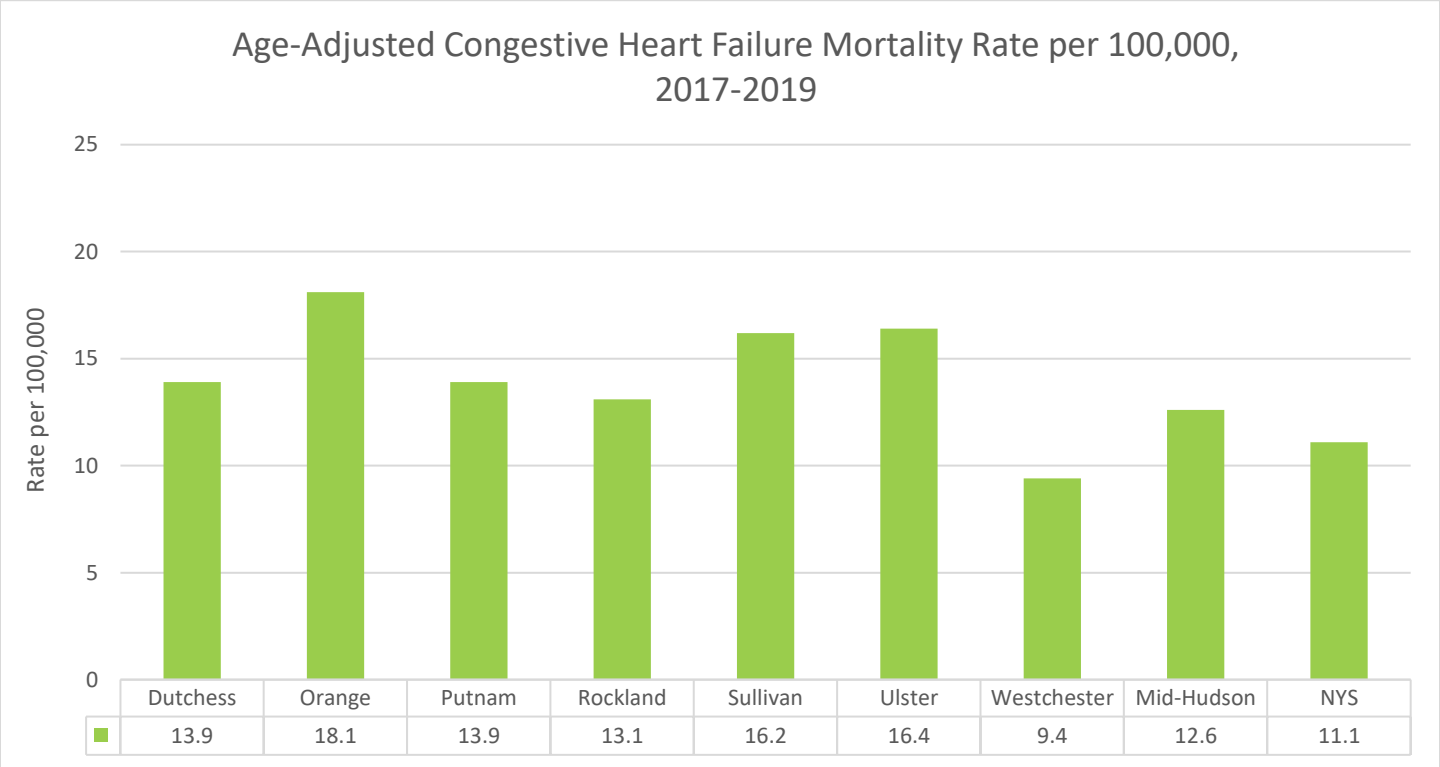


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	15.1	14.7	10.4	7.8	17.9	18.4	11.6	15.7	11.6
2012	16.5	14.5	8.8	8.1	22.1	18.1	12.1	15.7	11.5
2013	14.9	15.9	11.2	9.4	23.6	17.6	12.2	17.0	12.7
2014	14.8	17.3	13.0	10.8	19.7	17.9	12.1	16.2	12.2
2015	13.9	18.2	14.2	11.9	17.9	17.3	12.2	17.5	12.9
2016	13.8	18.3	13.8	13.2	17.5	16.9	11.7	18.5	13.4
2017	13.7	18.2	11.0	13.0	16.9	16.2	11.2	16.1	11.6
2018	13.9	18.1	13.9	13.1	16.2	16.4	9.4	15.4	11.1

Note: Three-year averages for counties and single-year rates for NYS and NYS excluding NYC are used in both the table and graph above.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bd10a

Recent data from 2017-2019 shows that Orange County had the highest rate of CHF mortality (18.1 per 100,000 population). This rate was higher than the M-H Region and NYS (12.6 and 11.1 per 100,000 population, respectively) [see Figure 203].

Figure 203



Note: Three-year age-adjusted rates.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Bd10a

DIABETES

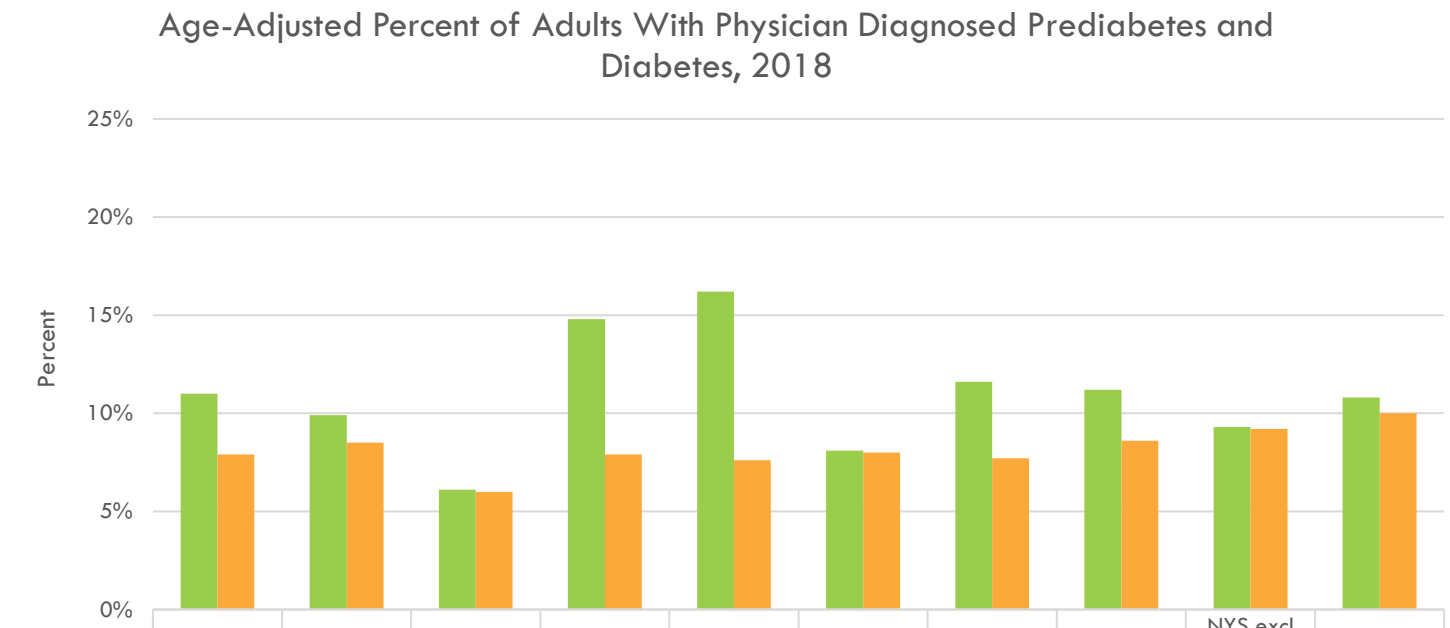
In the US, diabetes is the seventh leading cause of death.[146] It is a chronic condition that alters how the body breaks down glucose (sugar) for energy. Diabetes can be classified into two primary forms: insulin-dependent diabetes mellitus, known as type 1 diabetes (T1DM) and non-insulin-dependent diabetes mellitus, known as type 2 diabetes (T2DM). T1DM occurs when the body attacks itself and does not make enough insulin, which is a hormone released from the pancreas to help break down glucose. Alternatively, T2DM occurs when the body is unable to use existing insulin to help control the amount of glucose released into the blood stream. According to the CDC, about 90% of people with diabetes have T2DM.[147]

Before people are diagnosed with diabetes, they are usually tested for prediabetes, which is when a person's blood sugar level is higher than normal, thereby putting them at a greater risk of developing diabetes. According to the NYSDOH, 15-30% of the population in NYS with prediabetes will develop T2DM within five years if they do not change their lifestyle behaviors.[148]

[146] New York State Department of Health, 2020, https://www.health.ny.gov/diseases/conditions/diabetes/, accessed July 2022
[147] Center of Disease Control and Prevention, 2021, https://www.cdc.gov/diabetes/basics/type2.html, accessed July 2022
[148] New York State Department of Health, 2020, https://www.health.ny.gov/diseases/conditions/diabetes/, accessed July 2022

Figure 204 shows that within the M-H Region in 2018, 11.2% of adults were diagnosed with prediabetes by a physician, which is higher than the percentages in NYS and NYS excluding NYC (10.8% and 9.3%, respectively). Sullivan County had the highest percentage of the population diagnosed with prediabetes at 16.2% and Putnam County had the lowest percentage diagnosed at 6.1%. According to the US Diabetes Surveillance System (USDSS), 11.3% of the US population aged 18 years and older was diagnosed with diabetes in 2019.[149] This is higher than the percentages in both NYS excluding NYC (9.2%) and in NYS (10.0%). In the M-H Region, 8.6% of the population was diagnosed with diabetes, with the highest percentage seen in Orange County at 8.5%. The percentages used are age-adjusted percentages.

Figure 204



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
Prediabetes	11.0%	9.9%	6.1%	14.8%	16.2%	8.1%	11.6%	11.2%	9.3%	10.8%
Diabetes	7.9%	8.5%	6.0%	7.9%	7.6%	8.0%	7.7%	8.6%	9.2%	10.0%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

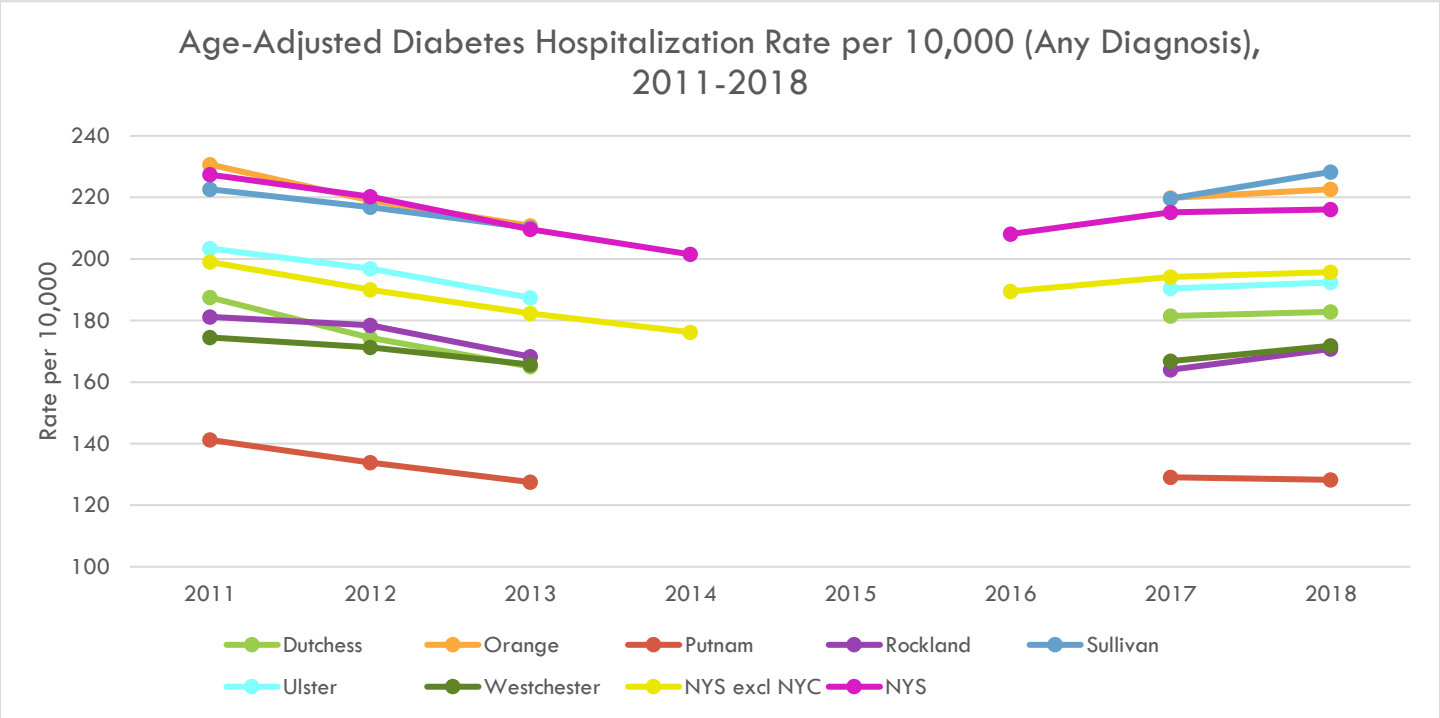
Some risk factors for diabetes include genetics; being overweight or obese; negative health behaviors, including tobacco or alcohol use; unhealthy diet; and decreased physical activity. Uncontrolled diabetes could result in serious morbidities over time, including heart disease, loss of limbs, loss of vision (retinopathy), and kidney disease. According to the American Diabetes Association (ADA), the health care industry has attempted to manage the effects of diabetes, spending $237 billion in direct medical costs in 2017.[150]

[149] American Diabetes Association, 2022, https://diabetes.org/about-us/statistics/about-diabetes, accessed October 2022

[150] American Diabetes Association, 2022, http://www.diabetes.org/diabetes-basics/statistics/?loc=db-slabnav, accessed September 2022

From 2011-2018, hospitalization rates for diabetes trended downward in the M-H Region counties, as well as NYS and NYS excluding NYC [see Figure 205].

Figure 205

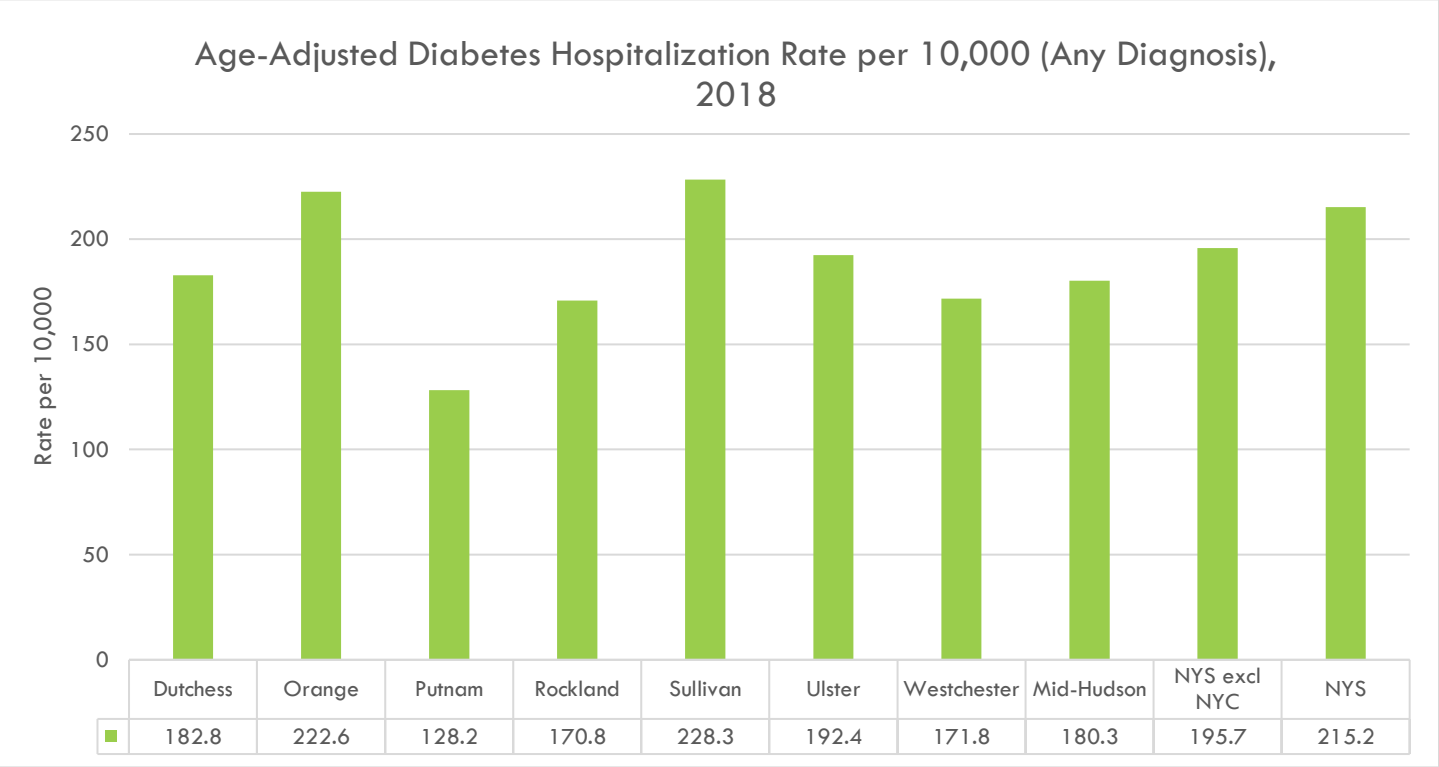


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	187.5	230.7	141.2	181.2	222.6	203.4	174.5	199.0	227.4
2012	174.4	219.0	133.9	178.5	216.8	196.9	171.3	190.0	220.3
2013	165.0	210.8	127.5	168.3	210.1	187.4	165.7	182.3	209.7
2014								176.2	201.5
2015									
2016								189.5	208.1
2017	181.5	219.8	129.1	164.0	219.6	190.4	166.8	194.2	211.3
2018	182.8	222.6	128.2	170.8	228.3	192.4	171.8	195.7	215.2

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015 from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Three-year averages are used for counties and single-year rates are used for NYS and NYS excluding NYC.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Dh12a

In 2018, diabetes hospitalization rates varied across the seven counties in the M-H Region. According to Figure 206, Sullivan County had the highest hospitalization rate at 228.3 per 10,000 population and Putnam County had the lowest rate at 128.2 per 10,000 population. These rates are compared to the M-H Region at 180.3 per 10,000 population [see Figure 206].

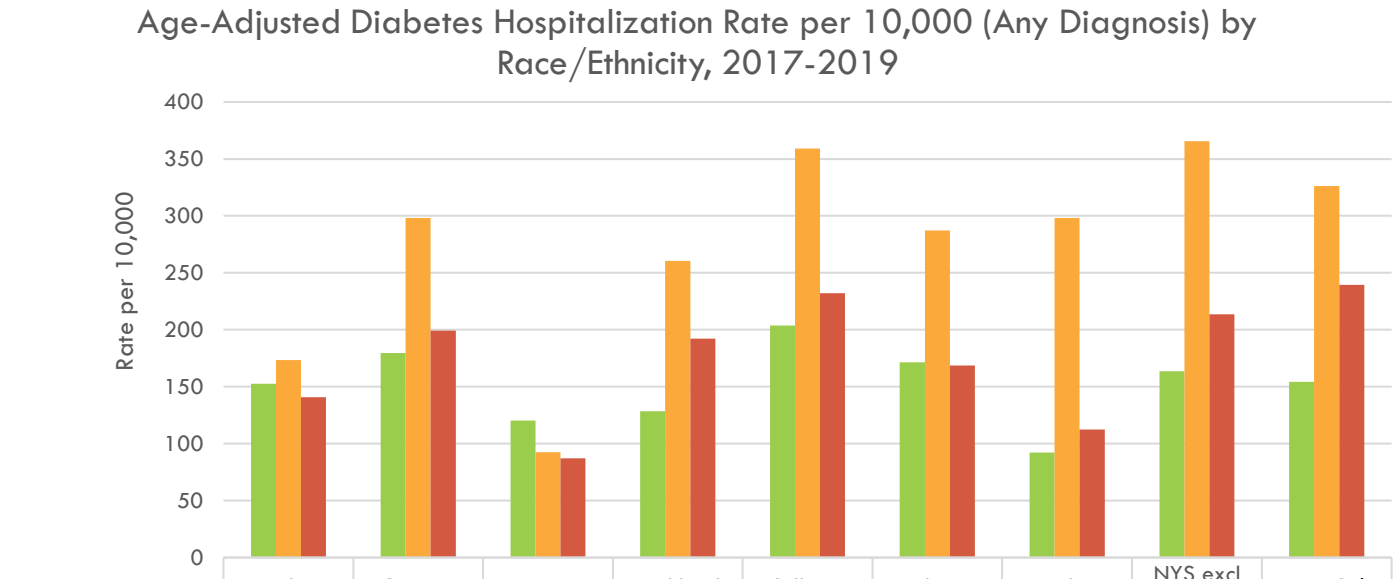
Figure 206



Note: Three-year averages are used for counties and single-year rates are used for Mid-Hudson, NYS excluding NYC, and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Dh12a

When stratifying this data by race/ethnicity, diabetes hospitalization rates were highest among the non-Hispanic Black population in NYS and NYS excluding NYC, along with most of the counties in the M-H Region. However, in Putnam County, non-Hispanic White adults had the highest hospitalization rate (120.4 per 10,000 population) [see Figure 207].

Figure 207

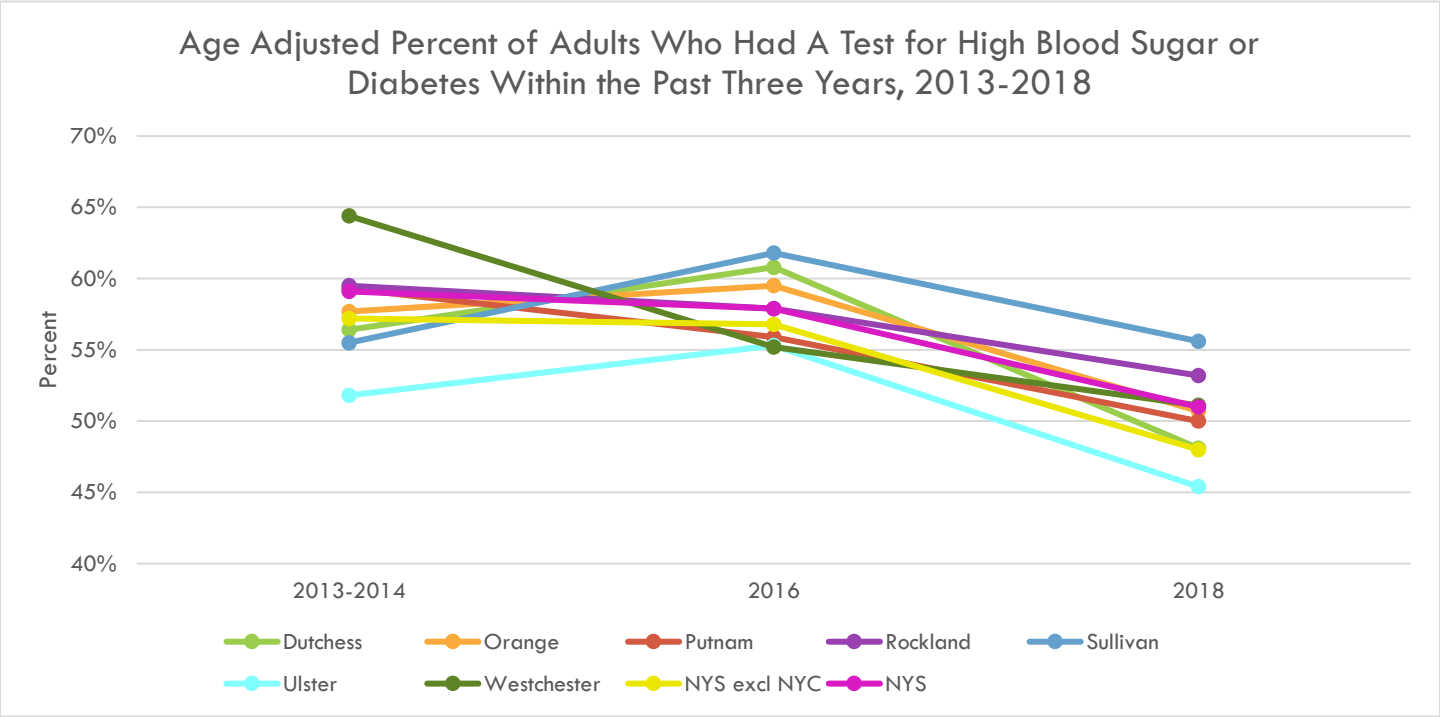


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS +
Non-Hispanic White	152.7	179.7	120.4	128.3	203.7	171.4	92.1	163.6	154.2
Non-Hispanic Black	173.4	298.2	92.4	260.5	359.2	287.1	298.1	365.5	326.3
Hispanic	140.8	199.3	87.0	192.3	232.0	168.7	112.5	213.5	239.4

+: 2019 ED data in New York City is incomplete and subject to change. Thus, state rates may be underestimated and subject to change.
Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

In order to avoid the consequences of uncontrolled diabetes, there are many adults who get their blood sugar tested by their medical provider. In 2018, the percentage of those who had a test for high blood sugar or diabetes within the past three years was very similar across the M-H Region, as well as NYS and NYS excluding NYC. From 2013 to 2018, all seven counties, as well as NYS excluding NYC and NYS, had decreases in the percentage of adults who got their blood sugar tested [see Figure 208].

Figure 208



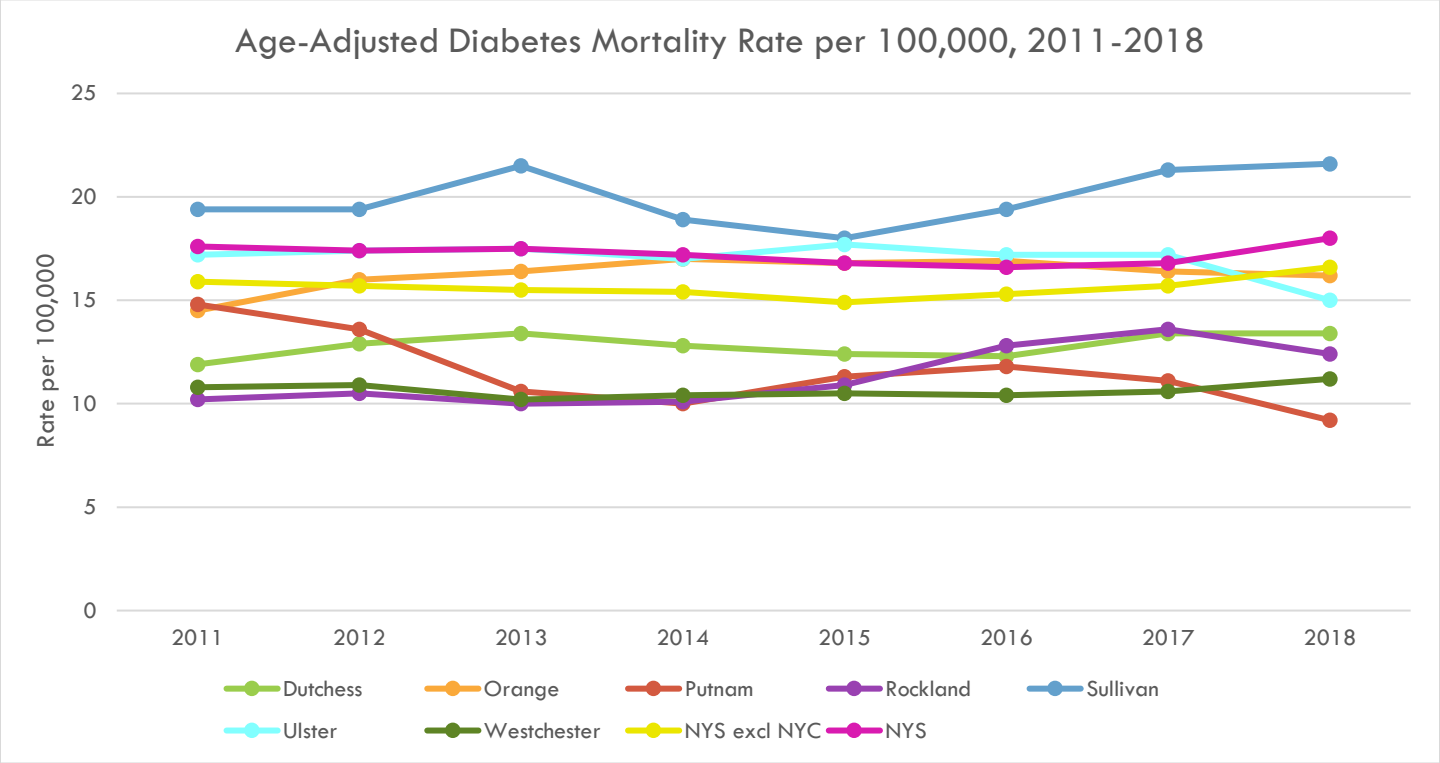
Note: Y-axis does not begin at zero in order to clearly display trend lines.

	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	56.4%	57.7%	59.3%	59.5%	55.5%	51.8%	64.4%	57.2%	59.1%
2016	60.8%	59.5%	55.9%	57.9%	61.8%	55.3%	55.2%	56.8%	57.9%
2018	48.1%	50.7%	50.0%	53.2%	55.6%	45.4%	51.1%	48.0%	51.0%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Expanded-Behavioral-Risk-Factor-Surveillance-Surve/jsy7-eb4n/data

From 2011 to 2018, diabetes mortality rates varied across the seven counties in the M-H Region. Sullivan County consistently experienced the highest rate in the M-H Region and was the only county to exceed both the NYS and NYS excluding NYC rates each year. From 2015 to 2017, Ulster County also had rates higher than NYS and NYS excluding NYC. Putnam County saw the greatest decrease in the diabetes mortality rate from 2011 to 2018 [see Figure 209].

Figure 209

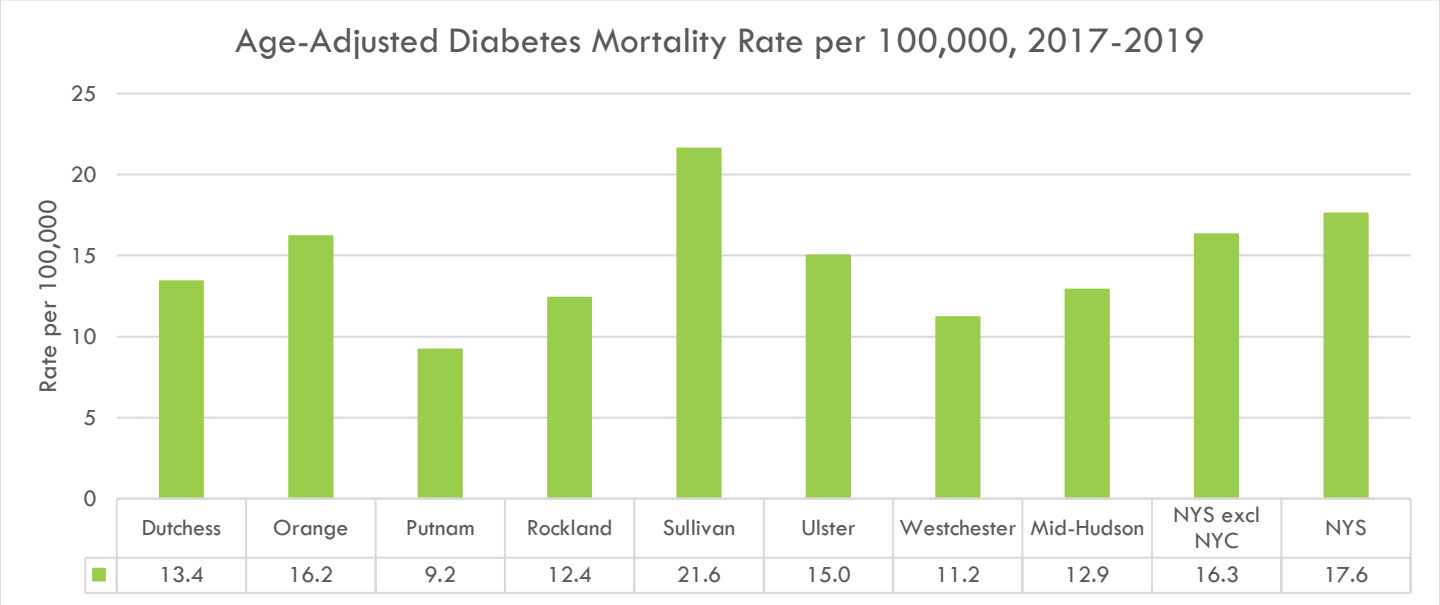


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	11.9	14.5	14.8	10.2	19.4	17.2	10.8	15.9	17.6
2012	12.9	16.0	13.6	10.5	19.4	17.4	10.9	15.7	17.4
2013	13.4	16.4	10.6	10.0	21.5	17.5	10.2	15.5	17.5
2014	12.8	17.0	10.0	10.1	18.9	17.0	10.4	15.4	17.2
2015	12.4	16.8	11.3	10.9	18.0	17.7	10.5	14.9	16.8
2016	12.3	16.9	11.8	12.8	19.4	17.2	10.4	15.3	16.6
2017	13.4	16.4	11.1	13.6	21.3	17.2	10.6	15.7	16.8
2018	13.4	16.2	9.2	12.4	21.6	15.0	11.2	16.6	18.0

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Dd22a

Data from 2017 to 2019 shows that the highest mortality rates were seen in Sullivan, Orange, and Ulster Counties (21.6, 16.2, and 15.0 per 100,000 population, respectively). These rates, as well as Dutchess County (13.4 per 100,000), were higher than the M-H Region rate (12.9 per 100,000), but only Sullivan County was higher than the NYS rate of 17.6 per 100,000 [see Figure 210]. The Healthy People 2020 target of reducing diabetes morality to 66.6 deaths per 100,000 population covers all deaths related to diabetes, which cannot be compared to this data.

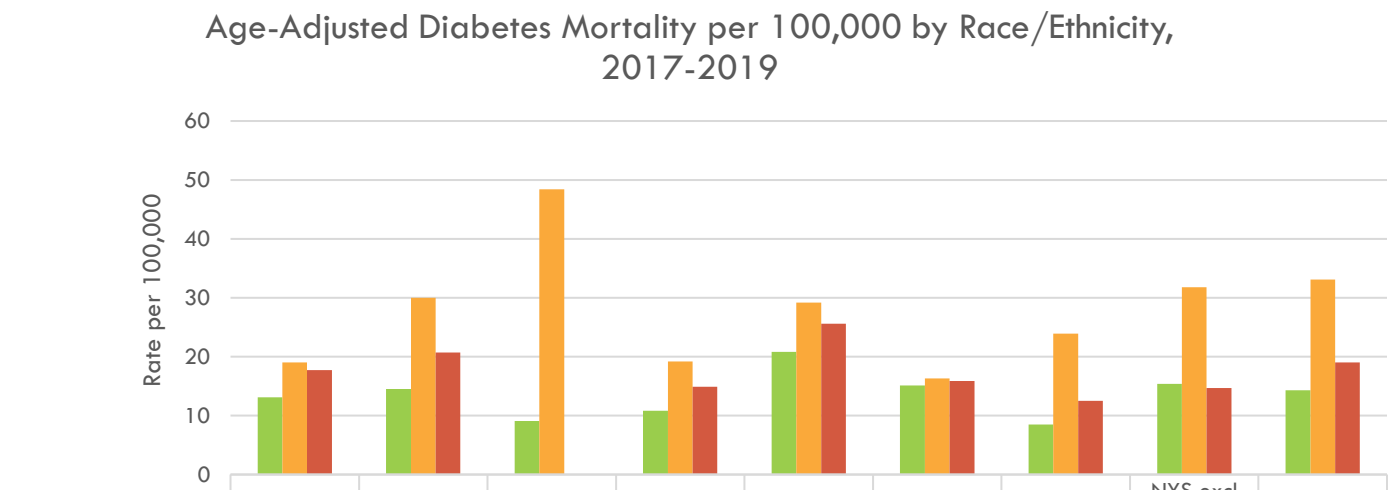
Figure 210



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Dd22a

When stratifying data by race/ethnicity, diabetes mortality rates were highest among the non-Hispanic Black population in NYS, NYS excluding NYC, and all seven counties in the M-H Region. Putnam County had the highest rate, although the rate was unstable (48.4 per 100,000). Orange County had the highest stable rate (30.0 per 100,000) [see Figure 211].

Figure 211



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	13.1	14.5	9.1	10.8	20.8	15.1	8.5	15.4	14.3
Non-Hispanic Black	19.0	30.0	48.4 *	19.2	29.2 *	16.3 *	23.9	31.8	33.1
Hispanic	17.7	20.7	0.0 *	14.9	25.6*	15.9 *	12.5	14.7	19.0

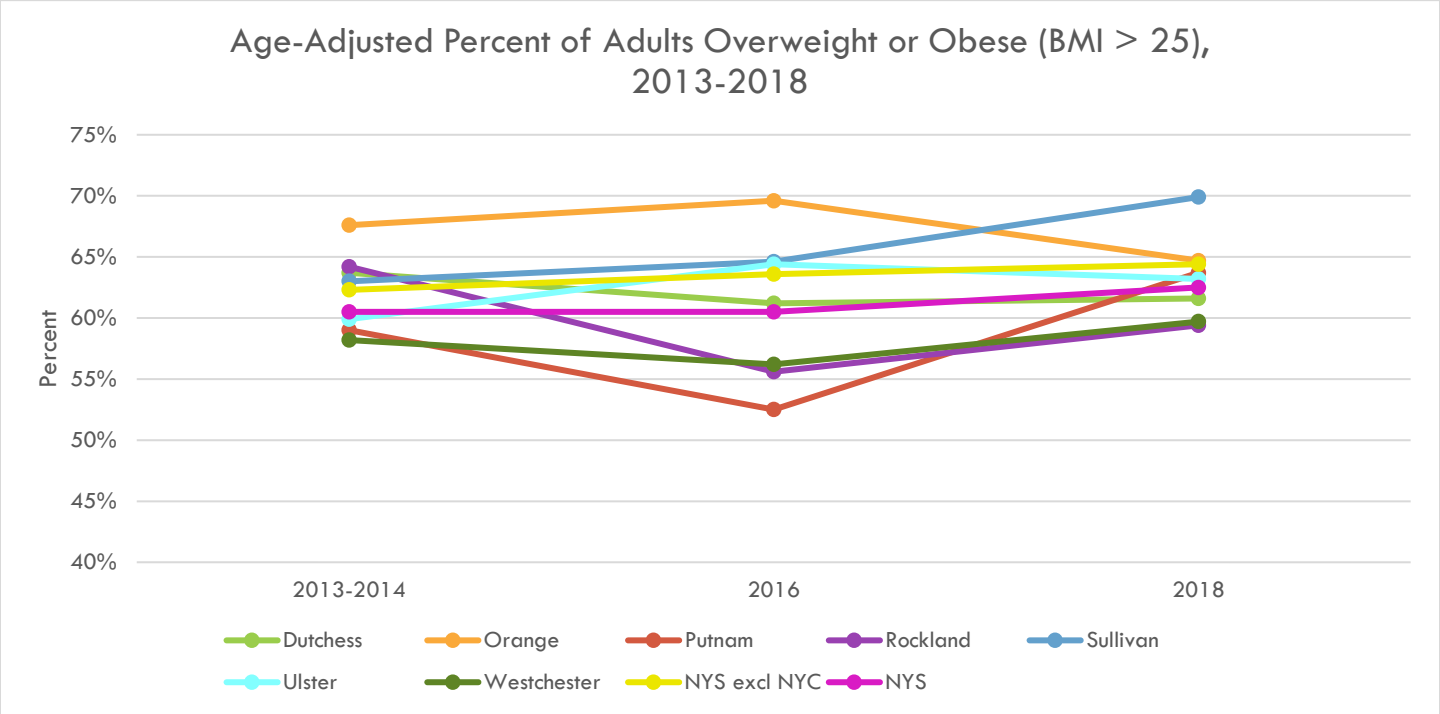
*: *The rate or percentage is unstable.*
Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

OBESITY

Obesity, which is a condition where an individual's weight is higher than what is considered normal for his/her height, has become a widespread epidemic in the US over the past few years. Body Mass Index (BMI) is a screening tool used to measure weight to height ratio that can determine if individuals have a healthy weight for their height. The calculation consists of person's weight in kilograms divided by his/her height in meters squared. If individuals have a BMI between 25.0 to 29.9 kg/m^2, they are considered to be overweight and if they have a BMI of 30.0 or higher, they are considered to be obese.[151]

Of the seven counties in the M-H Region, in 2018 Sullivan County has the highest percentage of adults who are overweight or obese (69.9%) and Rockland County has the lowest percentage (59.4%). The combined prevalence of overweight and obese adults in the M-H Region (61.4%) was lower than the percentage for NYS and NYS excluding NYC (62.5% and 64.4%, respectively). Since 2013, Putnam, Sullivan, Ulster, and Westchester Counties, as well as NYS and NYS excluding NYC had increases in the percentage of adults who are overweight or obese [see Figure 212].

Figure 212



Note: Y-axis does not begin at zero in order to clearly display trend lines.

	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	63.7%	67.6%	59.0%	64.2%	63.0%	59.9%	58.2%	62.3%	60.5%
2016	61.2%	69.6%	52.5%	55.6%	64.6%	64.4%	56.2%	63.6%	60.5%
2018	61.6%	64.7%	63.7%	59.4%	69.9%	63.2%	59.7%	64.4%	62.5%

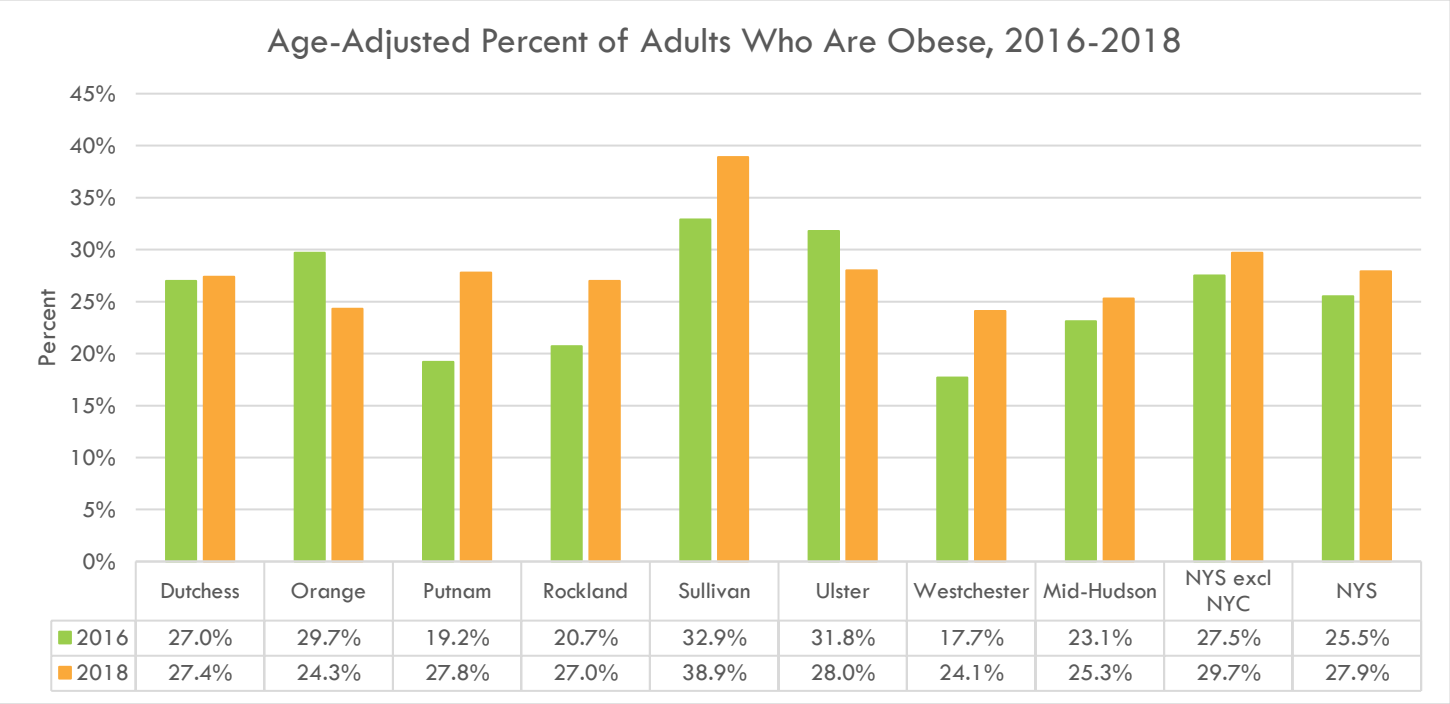
Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

[151] NIH, National Institute of Diabetes and Digestive and Kidney Diseases, 2021, https://www.niddk.nih.gov/health-information/health-statistics/overweight-obesity, accessed September 2022

Obesity poses a great health risk on the American population due to its linkage with higher mortality, reduced life span, and many chronic diseases. For instance, those who are obese are at a greater risk of developing other conditions, including diabetes, heart disease, hypertension, cancer, and renal failure.[152] Eating food high in sugar and fat content and having decreased physical activity can increase the risk of obesity. However, there are also multiple environmental, behavioral, and emotional factors that contribute to this disease, including stress. Stress has an indirect effect on obesity, as it can lead to increased food consumption, increased alcohol intake, and pursuing a less active lifestyle, which can all result in increased weight gain.[153]

Recent data shows that more than one third of adults in the US are obese.[154] When comparing data from 2016 to 2018, there were slight changes in the percentage of the population that is obese in each M-H Region county [see Figure 213]. Most counties experienced an increase in the percentage of the population that is obese, while some experienced a decrease in rates, including Orange (29.7% to 24.3%) and Ulster (31.8% to 28.0%) Counties. In 2018, Sullivan County had the highest obesity rate across the seven counties at 38.9%, which was above the M-H Region, NYS, and NYS excluding NYC rates (25.3%, 27.9%, and 29.7%, respectively).

Figure 213



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
2016	27.0%	29.7%	19.2%	20.7%	32.9%	31.8%	17.7%	23.1%	27.5%	25.5%
2018	27.4%	24.3%	27.8%	27.0%	38.9%	28.0%	24.1%	25.3%	29.7%	27.9%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

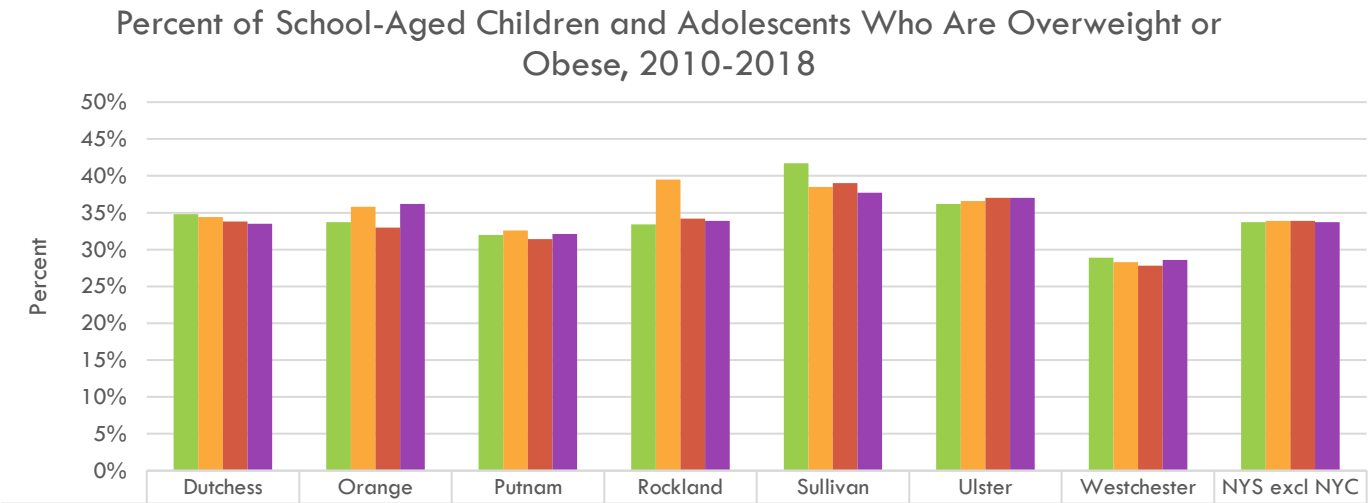
[152] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/obesity/index.html, accessed September 2022

[153] NIH, National Library of Medicine, National Center for Biotechnology Information, Rajita Sinha, Ania M. Jastreboff, 2013, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3658316/, accessed October 2022

[154] NIH National Institute of Diabetes and Digestive and Kidney Diseases, US Department of Health and Human Services, 2021, https://www.niddk.nih.gov/health-information/health-statistics/overweight-obesity, accessed September 2022

In 2007, the Student Weight Status Category Reporting System (SWSCRS) was established by amendments to the NYS Education Law to help the State and counties address the increasing rates of obesity among school-aged children. When looking at the combined prevalence of being overweight and obesity among school-aged children from 2010-2018, the trend differs in each county. In Dutchess and Sullivan Counties, there was a slight decrease, although Sullivan and Ulster Counties had the highest percentage of students who were overweight or obese compared to the other M-H Region counties and NYS excluding NYC [see Figure 214].

Figure 214

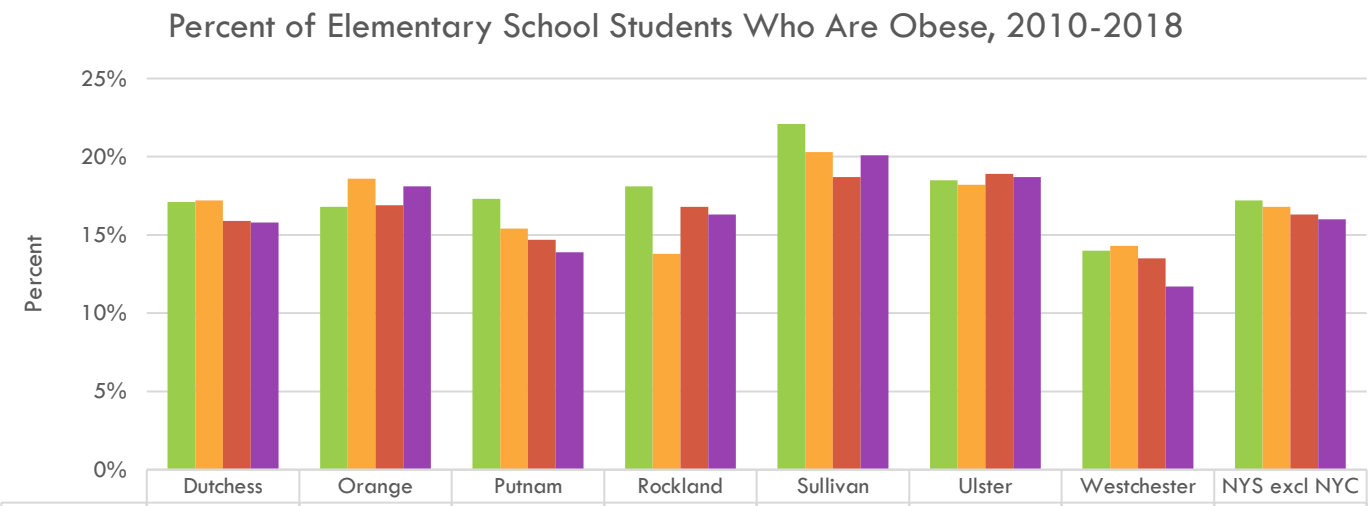


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC
2010-2012	34.8%	33.7%	32.0%	33.4%	41.7%	36.2%	28.9%	33.7%
2012-2014	34.4%	35.8%	32.6%	39.5%	38.5%	36.6%	28.3%	33.9%
2014-2016	33.8%	33.0%	31.4%	34.2%	39.0%	37.0%	27.8%	33.9%
2016-2018	33.5%	36.2%	32.1%	33.9%	37.7%	37.0%	28.6%	33.7%

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Jg65

When data is stratified by elementary and middle/high school children who are obese, the percentages vary across the different age groups in the M-H Region. As seen in Figure 215 and Figure 216, Sullivan County led in obesity rates among elementary, middle, and high school students when compared to the M-H Region and NYS excluding NYC. The Healthy People 2020 goal was to reduce the percentage of elementary school children who were obese to 15.7%. With the exception of Putnam and Westchester Counties, all of the other M-H Region counties and NYS excluding NYC failed to reach this target.

Figure 215

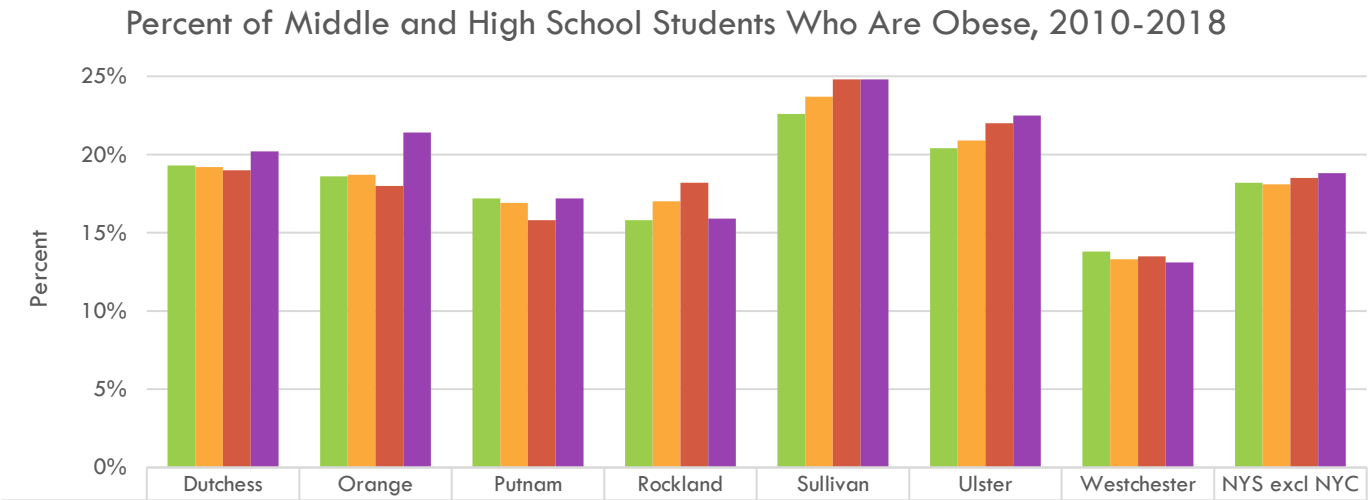


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC
2010-2012	17.1%	16.8%	17.3%	18.1%	22.1%	18.5%	14.0%	17.2%
2012-2014	17.2%	18.6%	15.4%	13.8%	20.3%	18.2%	14.3%	16.8%
2014-2016	15.9%	16.9%	14.7%	16.8%	18.7%	18.9%	13.5%	16.3%
2016-2018	15.8%	18.1%	13.9%	16.3%	20.1%	18.7%	11.7%	16.0%

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Jg67

In regard to middle and high school students, the Healthy People 2020 was to reduce the percentage of students who were obese to 16.1%. With the exception of Rockland and Westchester Counties, all of the other M-H Region counties and NYS excluding NYC failed to reach this target.

Figure 216



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC
2010-2012	19.3%	18.6%	17.2%	15.8%	22.6%	20.4%	13.8%	18.2%
2012-2014	19.2%	18.7%	16.9%	17.0%	23.7%	20.9%	13.3%	18.1%
2014-2016	19.0%	18.0%	15.8%	18.2%	24.8%	22.0%	13.5%	18.5%
2016-2018	20.2%	21.4%	17.2%	15.9%	24.8%	22.5%	13.1%	18.8%

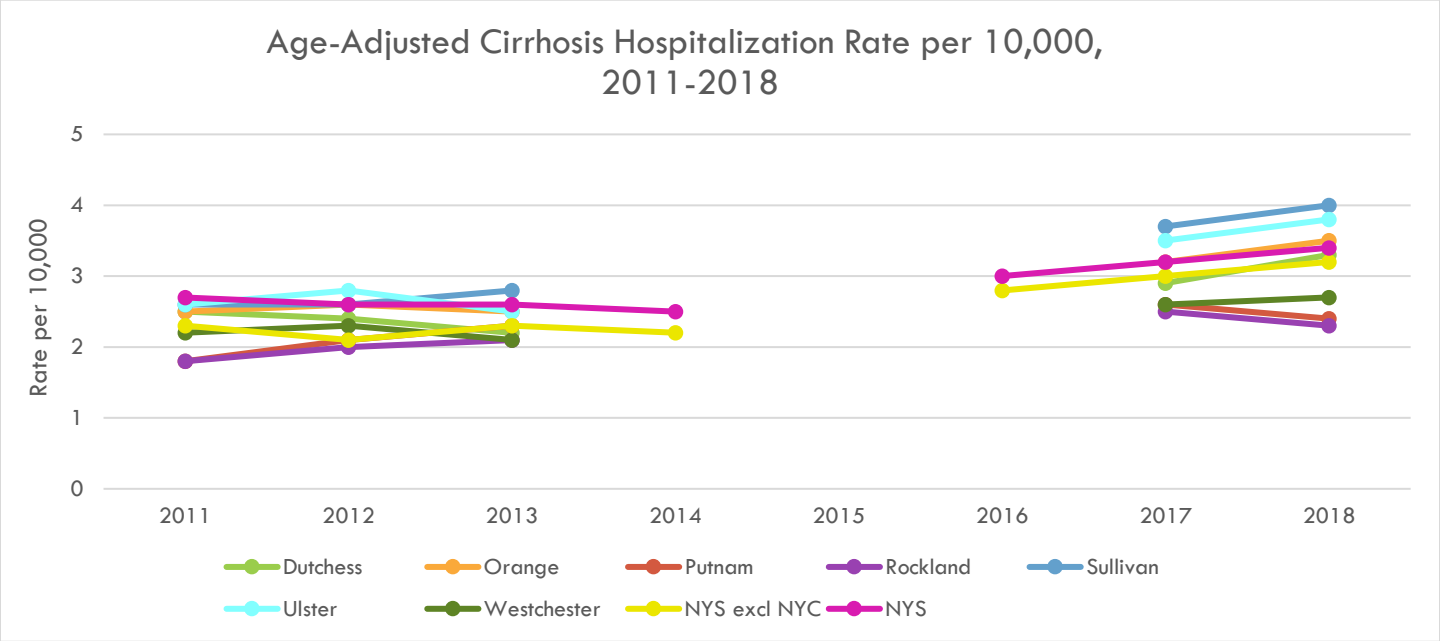
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Jg70

CIRRHOSIS OF THE LIVER

Cirrhosis is a condition in which the liver is scarred. The scar tissue replaces the healthy tissue preventing the liver from working normally. It can eventually lead to liver failure. The common causes of cirrhosis include alcoholic liver disease, nonalcoholic fatty liver disease, chronic hepatitis C, and chronic hepatitis B.[155] There can be many symptoms of cirrhosis including fatigue, weight loss, and poor appetite, while later stage symptoms can include bruising easily, edema, and jaundice. Symptoms may not appear until the liver is badly damaged.[156]

Between 2017 and 2018, cirrhosis hospitalization rates had a slight increase across NYS, NYS excluding NYC, and most counties in the M-H Region. However, Putnam and Rockland Counties had slight decreases in cirrhosis hospitalization rates [see Figure 217].

Figure 217



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	2.5	2.5	1.8	1.8	2.6	2.6	2.2	2.3	2.7
2012	2.4	2.6	2.1	2.0	2.6	2.8	2.3	2.1	2.6
2013	2.2	2.5	2.3	2.1	2.8	2.5	2.1	2.3	2.6
2014								2.2	2.5
2015									
2016								2.8	3.0
2017	2.9	3.2	2.6	2.5	3.7	3.5	2.6	3.0	3.2
2018	3.3	3.5	2.4	2.3	4.0	3.8	2.7	3.2	3.4

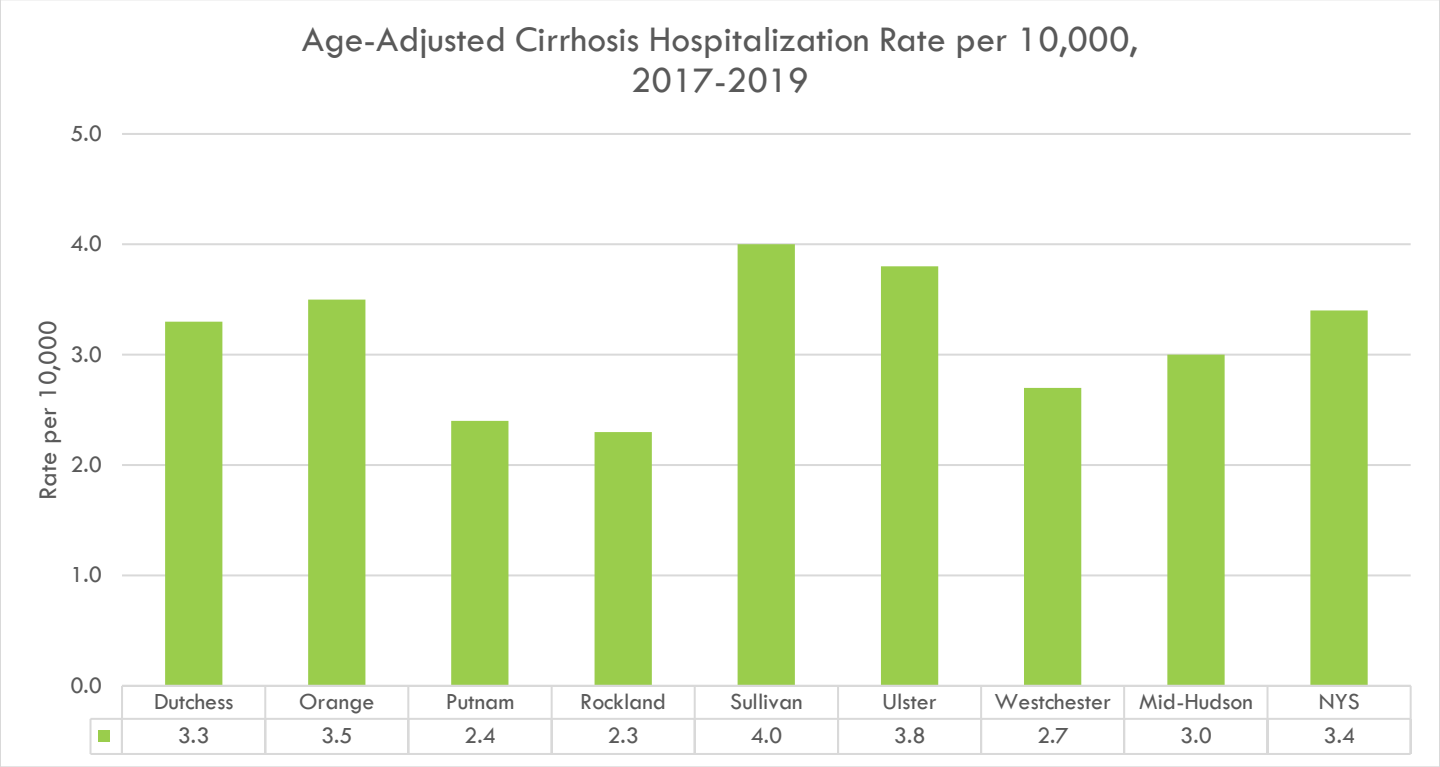
Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015 from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Dh10a

[155] NIH, National Institute of Diabetes and Digestive and Kidney Diseases, 2018, https://www.niddk.nih.gov/health-information/liver-disease/cirrhosis/symptoms-causes, accessed June 2022

[156] NIH, National Institute of Diabetes and Digestive and Kidney Diseases, 2021, https://www.niddk.nih.gov/health-information/health-statistics/overweight-obesity, accessed September 2022

When looking at recent data from 2017-2019, Ulster and Sullivan Counties had the highest cirrhosis hospitalization rates (4.0 and 3.8 per 10,000 population, respectively), while Rockland and Putnam Counties had the lowest rates (2.3 and 2.4 per 10,000 population, respectively) [see Figure 218].

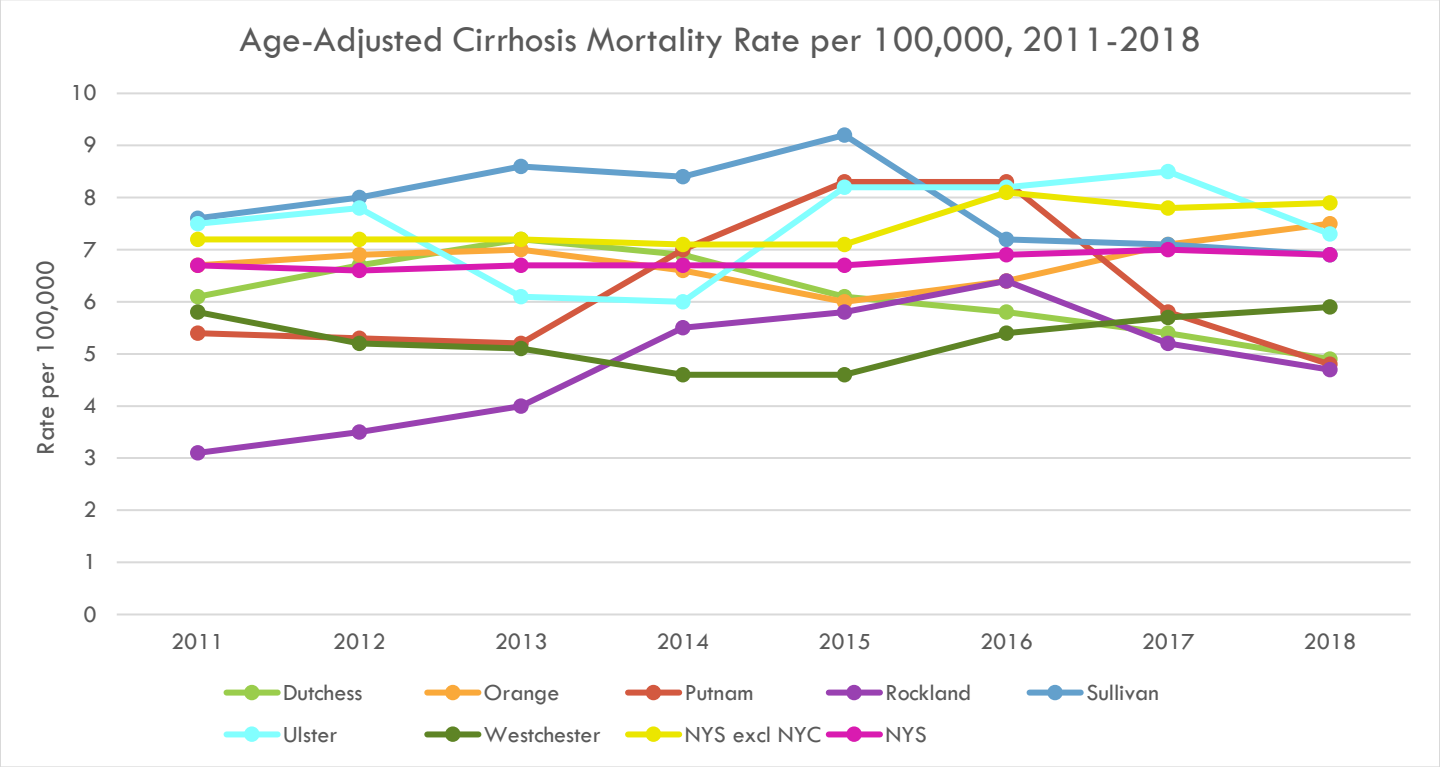
Figure 218



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Dh10a

From 2011-2018, data shows that cirrhosis mortality rates have fluctuated throughout the M-H Region. Of note, Orange County has seen a rate increase every year from 2015-2018. All other counties in the M-H Region saw decreased cirrhosis mortality rates, with the exception of Westchester County which had a slight increase [see Figure 219].

Figure 219

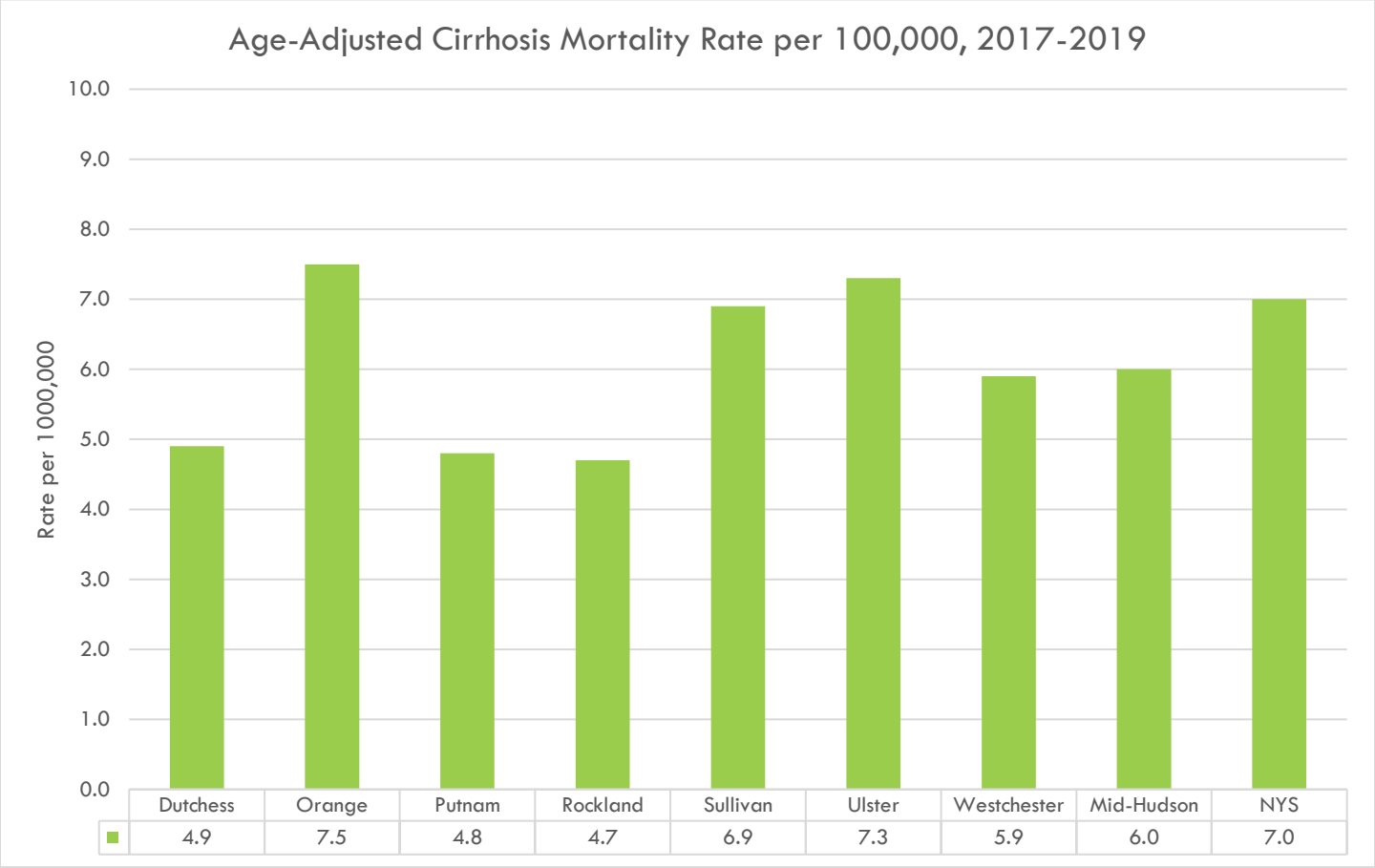


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	6.1	6.7	5.4	3.1	7.6	7.5	5.8	7.2	6.7
2012	6.7	6.9	5.3	3.5	8.0	7.8	5.2	7.2	6.6
2013	7.2	7.0	5.2	4.0	8.6	6.1	5.1	7.2	6.7
2014	6.9	6.6	7.0	5.5	8.4	6.0	4.6	7.1	6.7
2015	6.1	6.0	8.3	5.8	9.2	8.2	4.6	7.1	6.7
2016	5.8	6.4	8.3	6.3	7.2	8.2	5.4	8.1	6.9
2017	5.4	7.1	5.8	5.2	7.1	8.5	5.7	7.8	7.0
2018	4.9	7.5	4.8	4.7	6.9	7.3	5.9	7.9	6.9

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Dd21a

Recent data from 2017-2019 shows that Orange County led the M-H Region in cirrhosis mortality rates at 7.5 per deaths 100,000 population [see Figure 220]. The Healthy People 2020 goal was to reduce cirrhosis deaths to 8.2 deaths per 100,000 population. Most counties met this goal, with the exception of Ulster County. According to Healthy People 2030 this metric is getting worse in the US. The new Healthy People 2030 objective for reducing cirrhosis deaths is 10.9 cirrhosis deaths per 100,000 population.

Figure 220



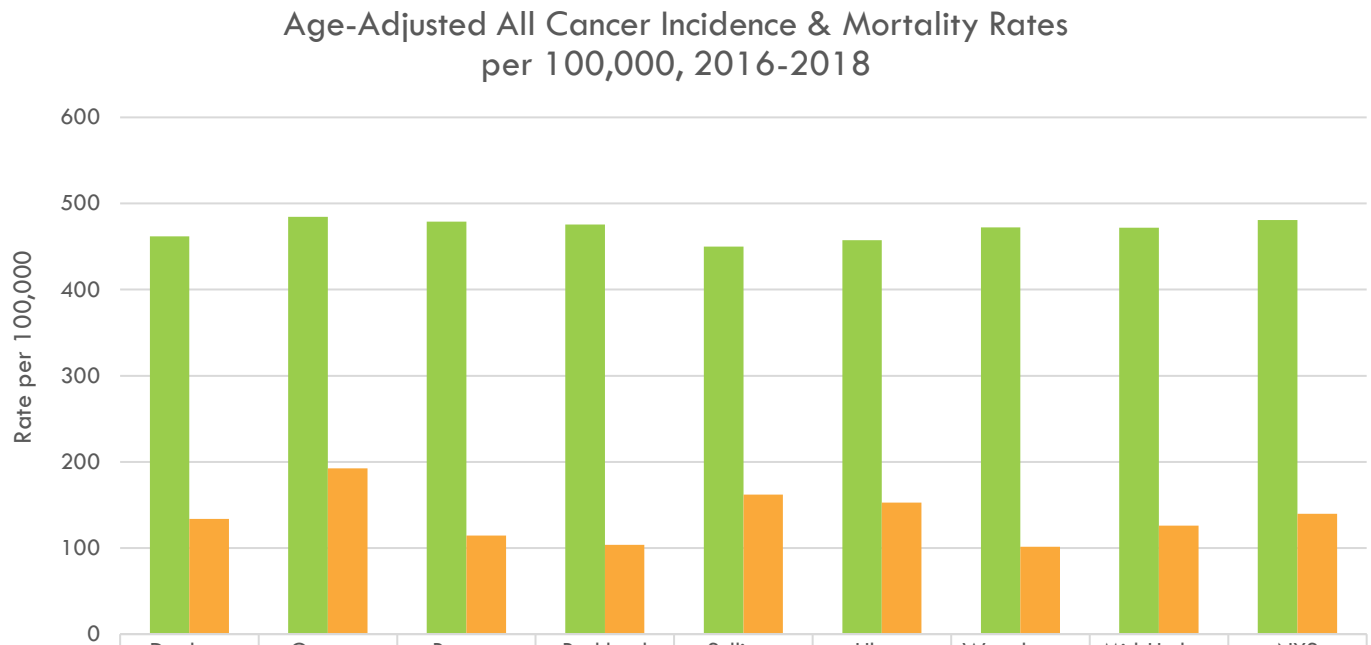
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Dd21a

CANCER

Cancer is a disease in which the cells of the body grow out of control and invade tissues in the body. Cancer can metastasize, or spread, from one part of the body to another.[157] There are a variety of risk factors, including genetics, the environment, and health behaviors. These behaviors include smoking, drinking alcohol, diet, and physical activity.

Cancer is one of the leading causes of death across all seven counties in the M-H Region. From 2016-2018, incidence rates were relatively similar across the seven counties in the M-H Region, as well as NYS [see Figure 221]. Orange County had the highest incidence rate and the highest mortality rate in the M-H Region (484.5 and 192.4 per 100,000, respectively).

Figure 221



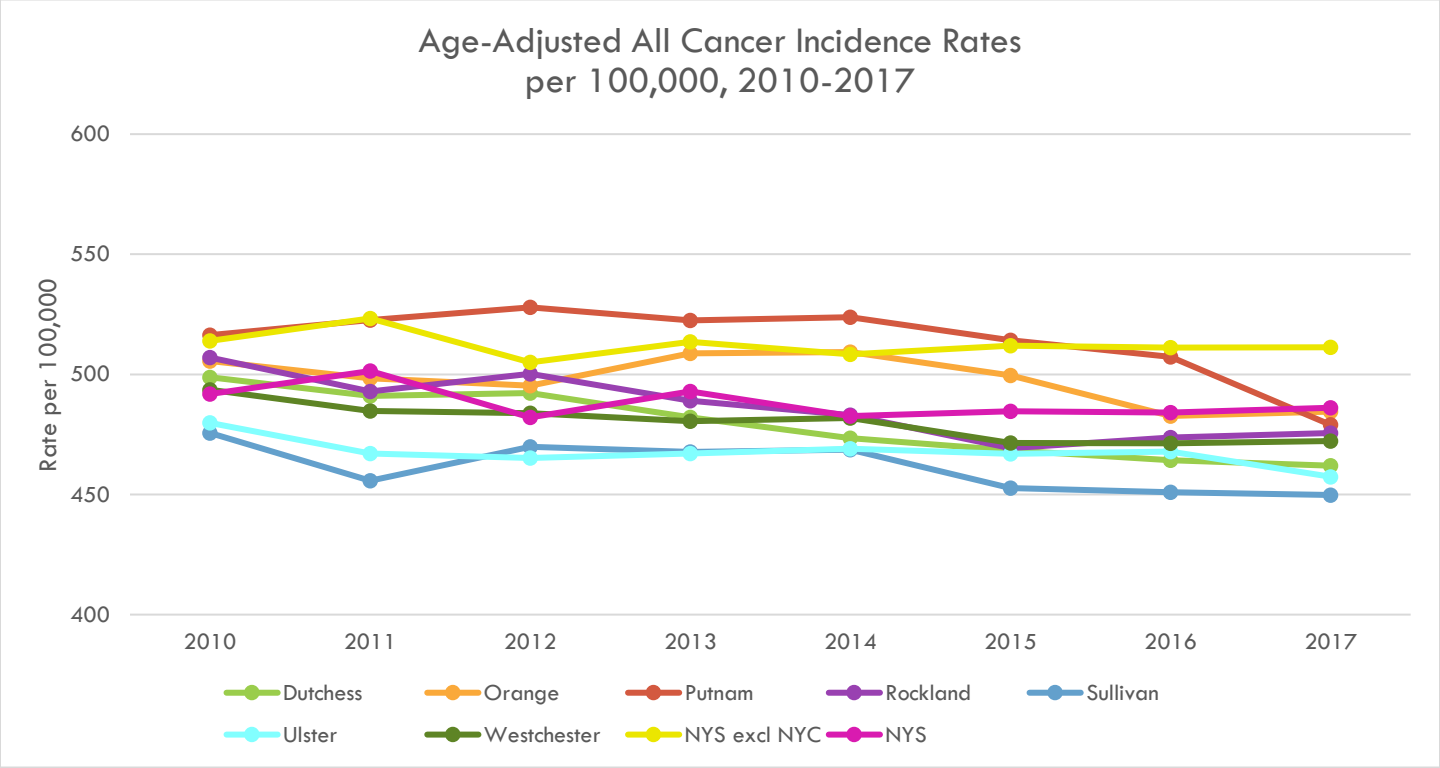
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
Incidence	462.0	484.5	479.0	475.6	449.8	457.4	472.2	471.7	480.7
Mortality	133.9	192.4	114.5	103.8	162.1	152.6	101.3	125.9	139.6

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Ag1a
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Ag2

[157] NIH, National Cancer Institute, 2021, https://www.cancer.gov/about-cancer/understanding/what-is-cancer, accessed June 2022

The majority of counties in the M-H Region had little change in all cancer incidence rates between 2016-2017. Putnam and Ulster Counties, however, had noticeable declines in this time period. Putnam County went from an incidence rate of 507.3 to 479.0 per 100,000, while Ulster County had a slightly smaller decrease from 467.9 per 100,000 in 2016 to 457.4 per 100,000 in 2017 [see Figure 222]. The age-adjusted rate of cancer incidence in the US was 439 per 100,000 population in 2019, which was lower than rates in the M-H Region and NYS.[158]

Figure 222



Note: Y-axis does not begin at zero in order to clearly display trend lines.

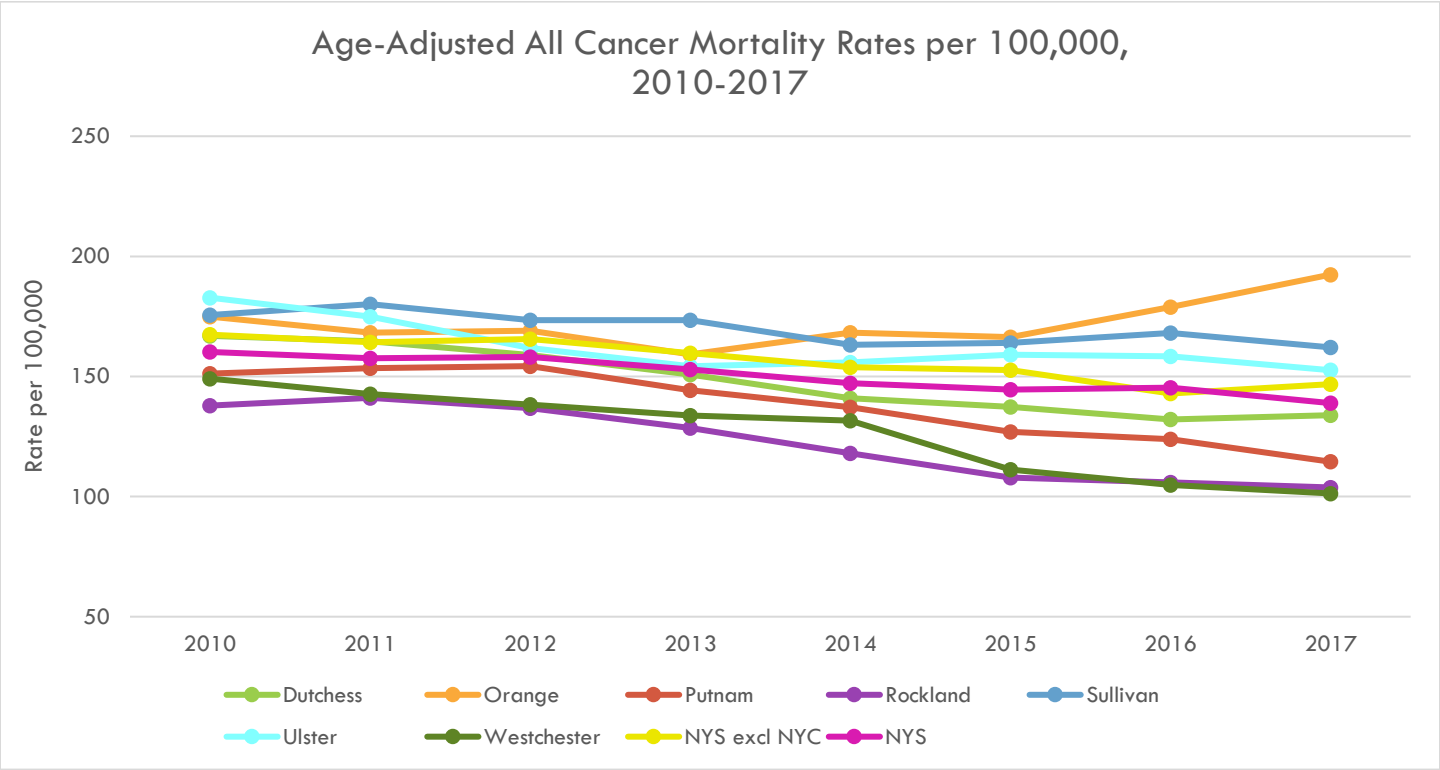
	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2010	498.8	505.5	516.3	507.0	475.6	479.8	493.6	513.9	491.8
2011	491.1	498.3	522.6	492.9	455.8	467.0	484.8	523.3	501.4
2012	492.2	495.3	527.9	500.2	469.8	465.2	483.8	505.0	482.1
2013	482.1	508.7	522.5	489.0	467.7	467.1	480.5	513.5	492.9
2014	473.4	509.3	523.8	483.1	468.7	469.1	481.8	508.4	482.6
2015	468.4	499.6	514.2	469.3	452.7	466.9	471.4	511.9	484.7
2016	464.3	482.7	507.3	473.7	450.9	467.9	471.3	511.1	484.1
2017	462.0	484.5	479.0	475.6	449.8	457.4	472.2	511.3	486.1

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Ag1a

[158] US Cancer Statistics, Centers for Disease Control and Prevention, 2022, https://gis.cdc.gov/Cancer/USCS/DataViz.html, accessed June 2022

When looking at the trends in all cancer mortality overtime, Orange County saw a notable jump from a rate of 166.4 per 100,000 in 2015 to 192.4 per 100,000 in 2017. All other M-H Region counties saw decreases in all cancer mortality in this time period, though Dutchess County saw a slight increase between 2016 and 2017 [see Figure 223]. Most of the M-H Region counties, as well as NYS and NYS excluding NYC, met the Healthy People 2020 target rate to reduce cancer deaths to 161.4 deaths per 100,000 population, with the exception of Orange and Sullivan Counties. According to Healthy People 2030, this measure is improving nationally. The new target for 2030 is 122.7 cancer deaths per 100,000.

Figure 223



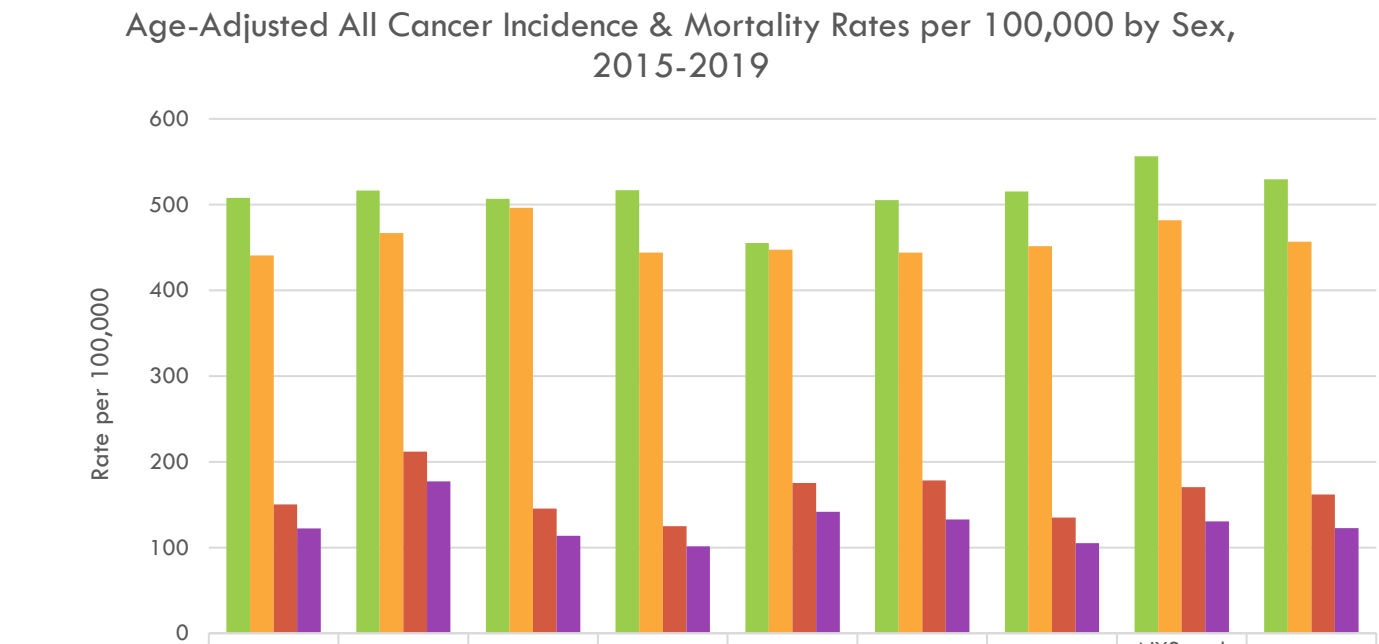
Note: Y-axis does not begin at zero in order to clearly display trend lines.

	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2010	166.9	174.9	151.2	137.9	175.6	182.8	149.1	167.4	160.2
2011	164.7	168.3	153.5	141.1	180.1	174.9	142.7	164.2	157.6
2012	158.9	169.1	154.3	136.8	173.5	161.9	138.3	165.6	158.1
2013	150.8	159.2	144.3	128.5	173.5	154.3	133.8	159.7	152.9
2014	140.9	168.2	137.2	118.0	163.2	155.9	131.6	153.9	147.2
2015	137.3	166.4	126.9	107.9	164.0	159.1	111.2	152.7	144.5
2016	132.1	178.9	123.9	105.9	168.1	158.4	104.9	142.9	145.3
2017	133.9	192.4	114.5	103.8	162.1	152.6	101.3	146.8	138.9

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Ag2a

When all cancer incidence and mortality rates were stratified by sex, males had higher incidence and mortality rates than females in all seven counties, as well as NYS and NYS excluding NYC [see Figure 224].

Figure 224



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Incidence (Male)	507.9	516.5	506.6	516.7	455.1	505.3	515.3	556.3	529.4
Incidence (Female)	440.8	466.9	496.2	444.2	447.3	444.1	451.4	481.7	456.6
Mortality (Male)	150.4	211.8	145.6	125.0	175.3	178.4	135.0	170.3	161.8
Mortality (Female)	122.4	177.3	113.8	101.4	141.8	132.9	105.1	130.3	122.6

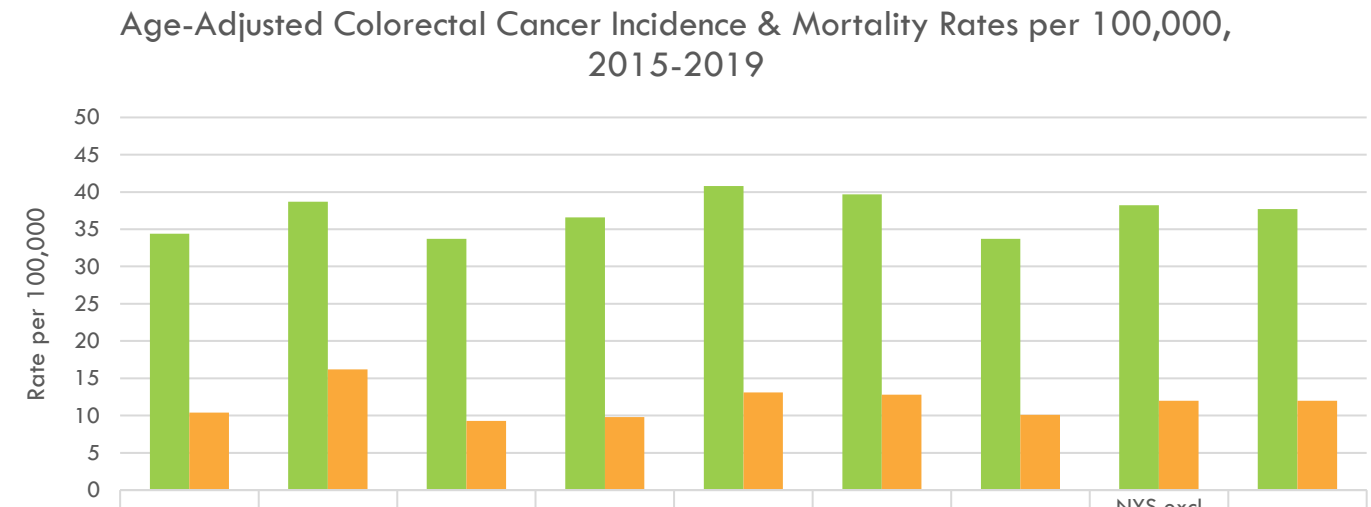
Source: NYSDOH Cancer Registry, 2021
https://www.health.ny.gov/statistics/cancer/registry/countylist.htm

COLORECTAL CANCER

Colorectal cancer (sometimes known as colon cancer) is a cancer that occurs in the colon or rectum. Some symptoms include blood in the stool, abdominal pains or aches, fatigue, and abnormal weight loss.[159] However, colorectal cancer does not always cause symptoms. Polyps, which are abnormal growths, can form in the colon or rectum. Polyps may turn into cancer over time; however, they can be found through screening tests and removed.[160]

Of the seven counties in the M-H Region, Sullivan County had the highest colorectal cancer incidence rate and mortality rate (40.8 and 13.1 per 100,000 population, respectively) [see Figure 225]. In the US, the rate of new colorectal cancer cases in 2019 was 36.3 per 100,000 population, while the mortality rate due to colorectal cancer was 12.8 per 100,000 population.[161]

Figure 225



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Incidence	34.4	38.7	33.7	36.6	40.8	39.7	33.7	38.2	37.7
Mortality	10.4	16.2	9.3	9.8	13.1	12.8	10.1	12.0	12.0

Note: Trend data for incidence and mortality rates can be found on NYS Community Health Indicator Reports (CHIRS).
Source: NYSDOH Cancer Registry, 2022
https://www.health.ny.gov/statistics/cancer/registry/countylist.htm

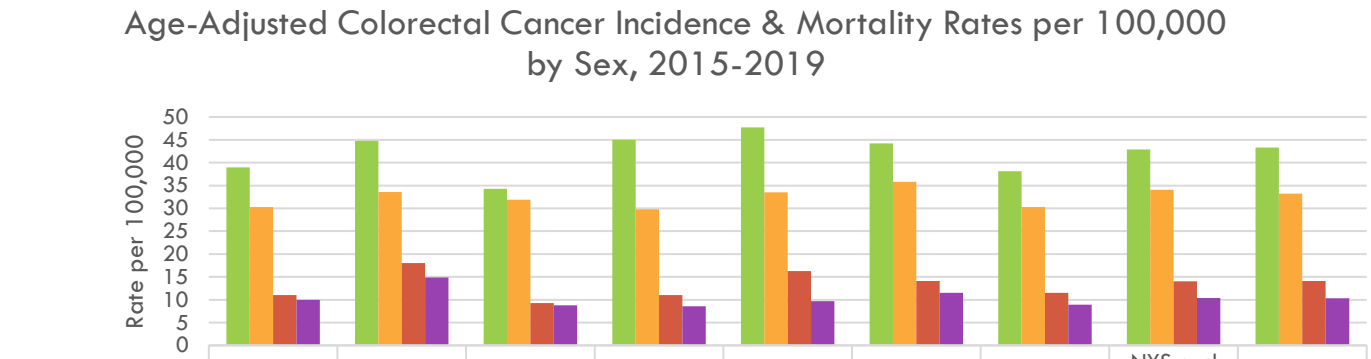
[159] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/cancer/colorectal/index.htm, accessed June 2022

[160] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/cancer/colorectal/sfl/, accessed June 2022

[161] US Cancer Statistics, Centers for Disease Control and Prevention, 2022, https://gis.cdc.gov/Cancer/USCS/DataViz.html, accessed June 2022

When stratifying by sex, males had higher colorectal cancer incidence rates across all seven counties in the M-H Region, as well as NYS and NYS excluding NYC, as seen in Figure 226. Mortality rates follow a similar pattern, with the exception of Putnam County, where females had slightly higher colorectal cancer mortality rates than males (8.6 vs 8.5 per 100,000 population, respectively).

Figure 226

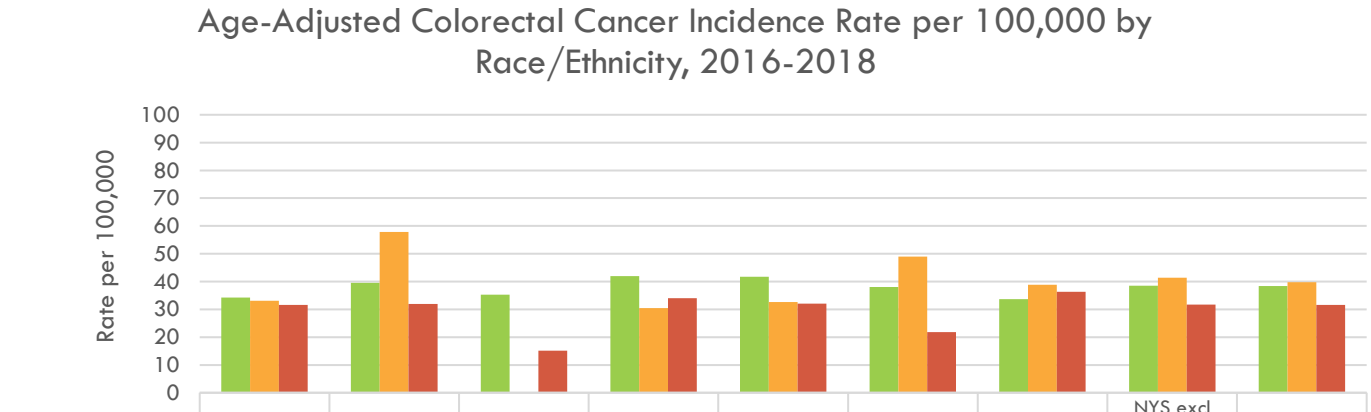


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Incidence (Male)	39.0	44.8	34.3	45.0	47.7	44.2	38.1	42.9	43.3
Incidence (Female)	30.3	33.6	31.9	29.8	33.5	35.8	30.3	34.1	33.2
Mortality (Male)	11.0	18.0	9.3	11.0	16.3	14.1	11.5	14.0	14.1
Mortality (Female)	10.0	14.9	8.8	8.6	9.7	11.5	8.9	10.4	10.3

Source: NYSDOH Cancer Registry, 2022
https://www.health.ny.gov/statistics/cancer/registry/countylist.htm

When stratifying this data by race/ethnicity, the rates differ in most of the counties. Like NYS and NYS excluding NYC, Orange, Ulster, and Westchester Counties' highest rates of colorectal cancer incidence were among the non-Hispanic Black population. Non-Hispanic White populations had the highest rates of colorectal Cancer in Dutchess, Rockland, and Sullivan Counties [see Figure 227].

Figure 227



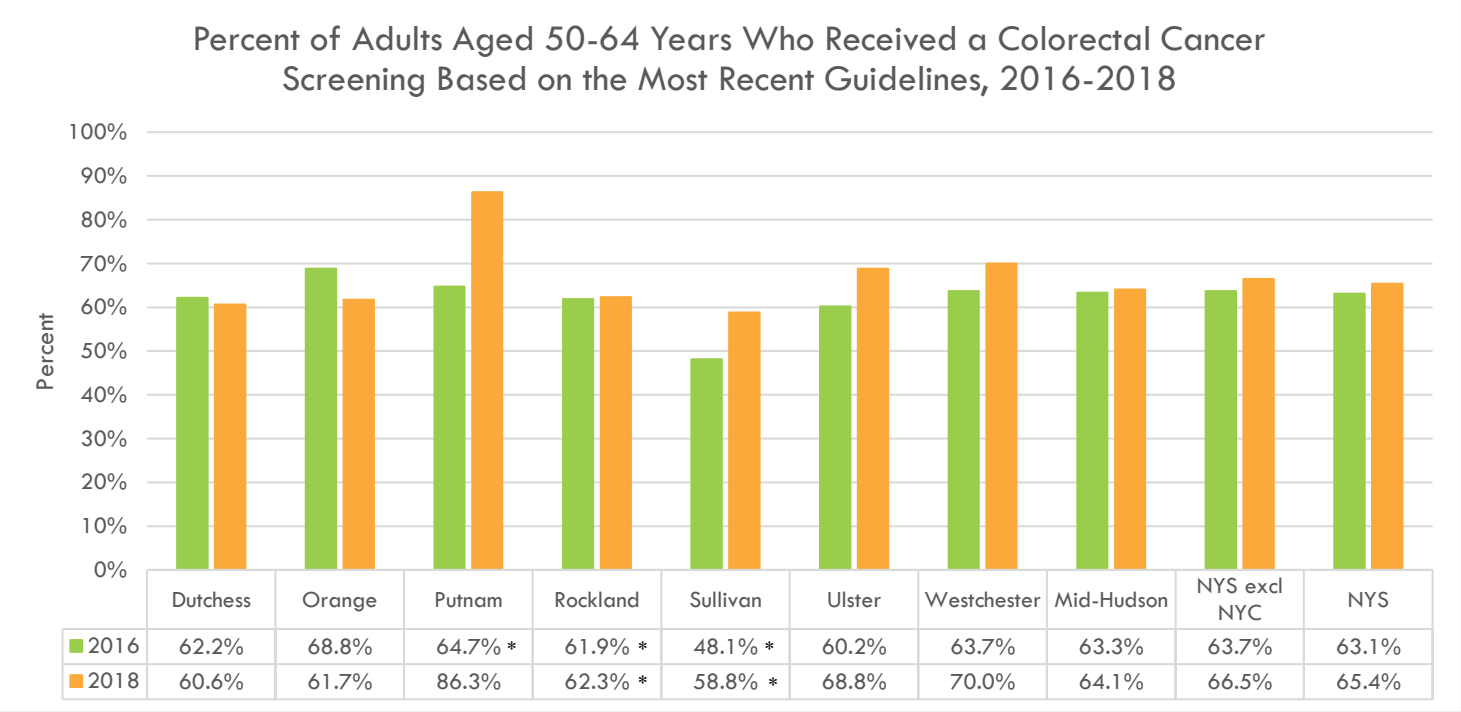
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	34.3	39.6	35.3	42.0	41.7	38.0	33.7	38.5	38.4
Non-Hispanic Black	33.1	57.9	s	30.5	32.6*	49.0	38.8	41.4	39.8
Hispanic	31.6	32.0	15.1 *	34.0	32.1*	21.8*	36.3	31.7	31.6

**: The rate or percentage is unstable.*
s: Data are suppressed. The data do not meet the criteria for confidentiality.
Note: Mortality rates stratified by race/ethnicity are not shown due to suppressed and/or unstable data in most counties.
Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

The US Preventive Services Task Force recommends that adults aged 50 to 75 years receive screening for colorectal cancer. Some screening tests include colonoscopy; guaiac-based fecal occult blood test (gFOBT), which uses a chemical called guaiac to detect blood in the stool; or a fecal immunochemical test (FIT), which uses antibodies to look for blood in the stool.[162]

The New York State Prevention Agenda (NYSPA) aims to have the percentage of adults aged 50 to 64 years who receive a colorectal cancer screening based on recent guidelines to be 66.3%. The M-H Region fell below this target, with 64.1% of adults aged 50 to 64 years receiving a colorectal cancer screening test based on the most recent guidelines in 2018 [see Figure 228]. Putnam, Ulster, and Westchester Counties were the counties in the region that met or exceeded the NYSPA target. Dutchess and Orange Counties saw decreases in the percent of adults aged 50 to 64 years receiving a colorectal cancer screening based on the most recent guidelines from 2016 to 2018, while all other counties, as well as the M-H Region, NYS excluding NYC, and NYS, had increases.

Figure 228



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
2016	62.2%	68.8%	64.7% *	61.9% *	48.1% *	60.2%	63.7%	63.3%	63.7%	63.1%
2018	60.6%	61.7%	86.3%	62.3% *	58.8% *	68.8%	70.0%	64.1%	66.5%	65.4%

*: *Margin of error is greater than 10%, therefore the percentage is unstable.*
Source: NYS Prevention Agenda Dashboard, 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/dashboard/pa_dashboard&p=it&ind_id=pa340

LUNG CANCER

Lung cancer is the primary cause of cancer deaths, for both males and females, in all of the M-H Region and NYS. Some symptoms of lung cancer include chest pain, coughing (sometimes with blood), shortness of breath, and/or wheezing. The leading risk factor for lung cancer is tobacco use. According to the NYSDOH, smoking is responsible for over 80% of lung cancers.[163] Another risk factor for lung cancer is radon exposure. Radon is a colorless, radioactive gas that comes from the decay of elements such as uranium, which is found in soil and

[162] US Preventive Services Task Force, 2021, https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/colorectal-cancer-screening#tab1, accessed June 2022

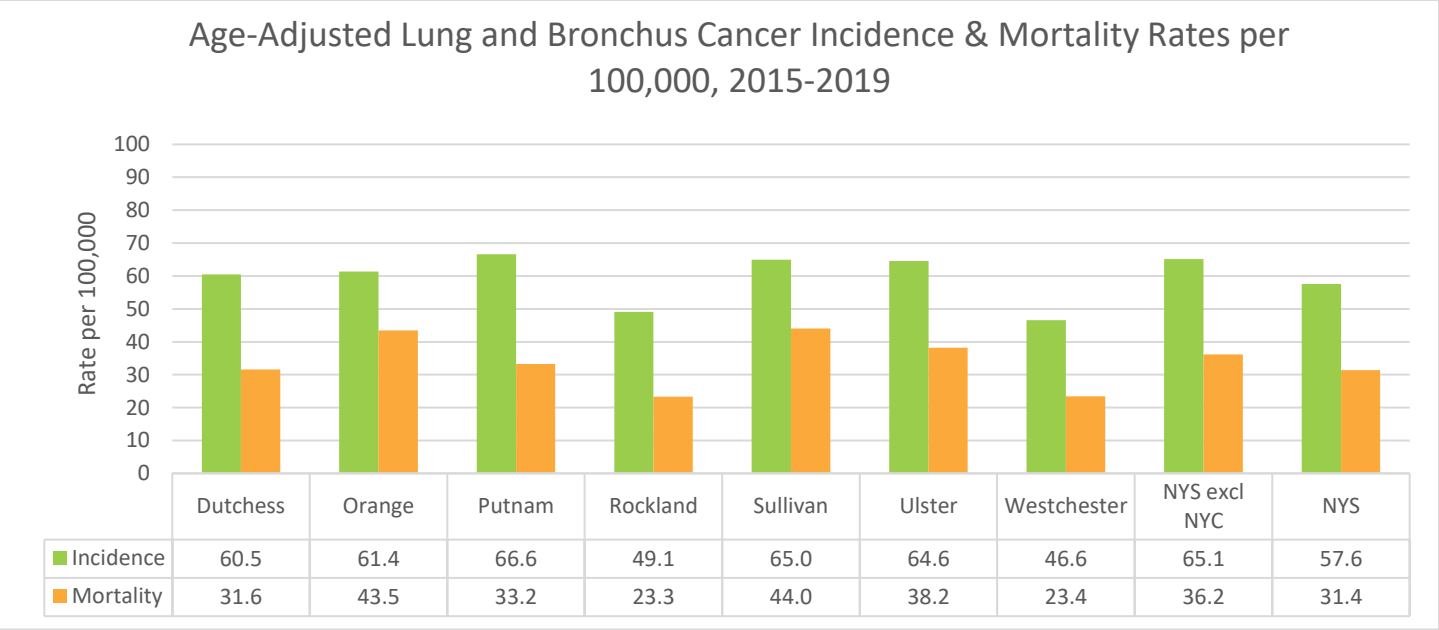
[163] New York State Department of Health, 2018, https://www.health.ny.gov/statistics/cancer/registry/abouts/lung.htm, accessed July 2022

rock.[164] Radon is in the surrounding air, so it is not possible to completely avoid it. However, preventive measures can be taken to lower exposure, such as utilization of radon detection kits in the home or office.

From 2015-2019, the highest rates of lung cancer incidence were in Putnam, Sullivan, and Ulster Counties (66.6, 65.0, and 64.6 per 100,000 population, respectively), which was higher than NYS but consistent with NYS excluding NYC (57.6 and 65.1 per 100,000 population, respectively) [see Figure 229].

The Healthy People 2020 goal was to reduce lung cancer mortality to 45.5 deaths per 100,000 population. All of the counties in the M-H Region, as well as NYS and NYS excluding NYC, met this target [see Figure 229].

Figure 229



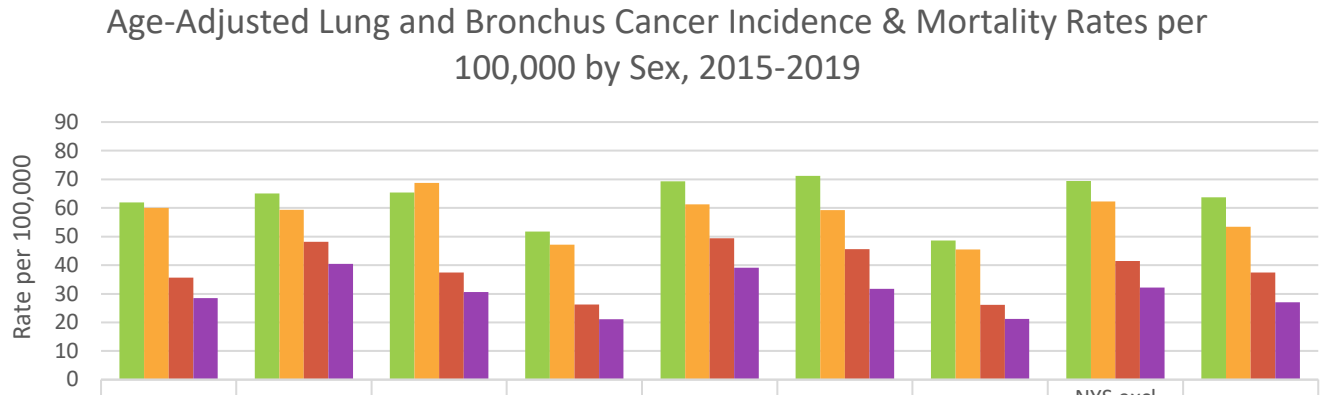
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Incidence	60.5	61.4	66.6	49.1	65.0	64.6	46.6	65.1	57.6
Mortality	31.6	43.5	33.2	23.3	44.0	38.2	23.4	36.2	31.4

Note: Five-year age-adjusted rates.
Trend data for incidence and mortality rates can be found on NYS Community Health Indicator Reports (CHIRS).
Source: NYSDOH Cancer Registry, 2021
https://www.health.ny.gov/statistics/cancer/registry/countylist.htm

[164] American Cancer Society, 2015, https://www.cancer.org/cancer/cancer-causes/radiation-exposure/radon.html, accessed September 2022

When stratifying this data by sex, males had higher lung cancer incidence and mortality rates than females in all seven counties, as well as NYS and NYS excluding NYC, with the largest disparity seen in Ulster County [see Figure 230].

Figure 230

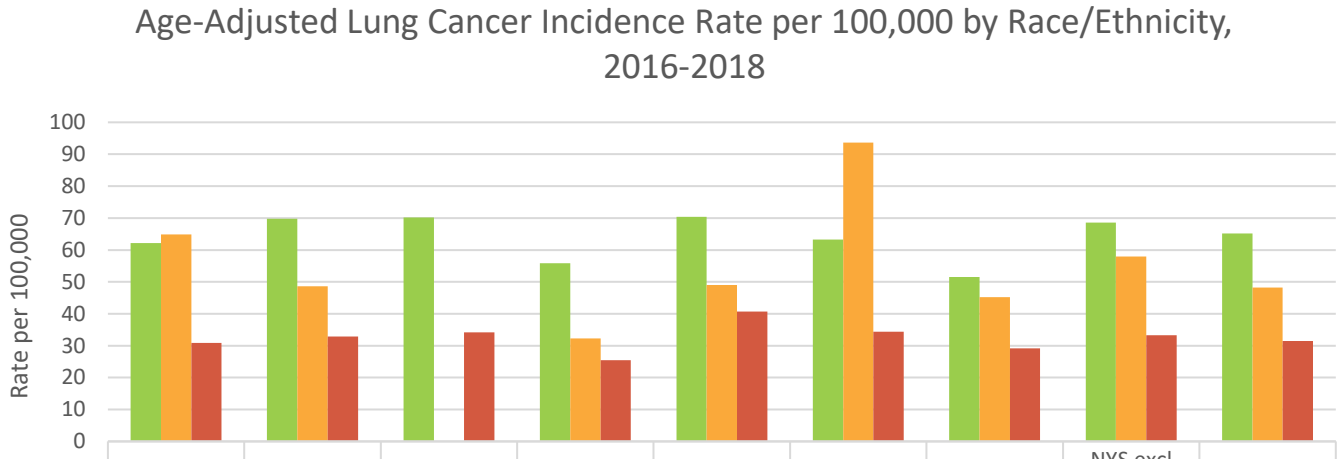


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Incidence (Male)	61.9	65.1	65.4	51.7	69.3	71.2	48.6	69.4	63.7
Incidence (Female)	60.0	59.3	68.7	47.2	61.3	59.2	45.5	62.3	53.4
Mortality (Male)	35.6	48.2	37.4	26.3	49.4	45.6	26.1	41.5	37.4
Mortality (Female)	28.5	40.5	30.6	21.1	39.1	31.7	21.2	32.2	27.0

Note: Five-year age-adjusted rates.
Trend data for incidence and mortality rates can be found on NYS Community Health Indicator Reports (CHIRS).
Source: NYSDOH Cancer Registry, 2021
https://www.health.ny.gov/statistics/cancer/registry/countylist.htm

When stratifying this data by race/ethnicity, non-Hispanic White adults had the highest lung cancer incidence rates in most of the M-H Region Counties and at the state level, with the exception of Ulster and Dutchess counties, where non-Hispanic Black adults had higher lung cancer incidence rates [see Figure 231].

Figure 231



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	62.2	69.8	70.2	55.8	70.4	63.3	51.5	68.6	65.2
Non-Hispanic Black	64.9	48.6	s	32.3	49.0 *	93.6	45.2	57.9	48.2
Hispanic	30.9	32.9	34.2 *	25.5	40.7 *	34.4	29.2	33.3	31.5

**: The rate is unstable.*
s: Data are suppressed. The data do not meet the criteria for confidentiality.
Note: Three-year age-adjusted rates.
Mortality rates stratified by race/ethnicity are not available.
Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2021
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

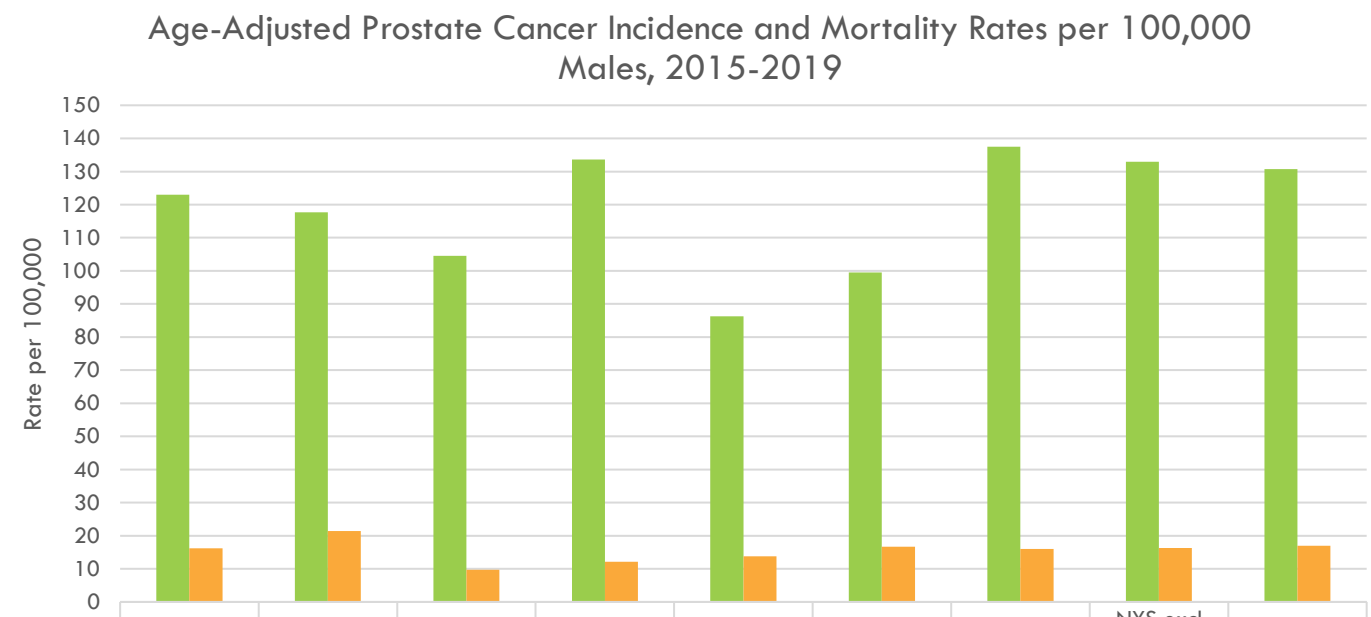
PROSTATE CANCER

Out of every 100 American men, about 13 will get prostate cancer during their lifetime.[165] Some common symptoms of prostate cancer include difficulty urinating, frequent urination, blood in the urine or semen, and painful ejaculation. Prostate cancer has a better prognosis compared to other cancers when people receive treatment early. The prostate-specific antigen (PSA) test measures the level of PSA in the blood, which is a substance created in the prostate. When PSA levels are high, this most likely means there is a problem with the prostate. It is important for men to begin being tested at a younger age in order to prevent future complications.

When looking at Figure 232, the highest rate of prostate cancer incidence was seen in Westchester County and the lowest incidence rate was seen in Sullivan County (137.5 and 86.3 per 100,000 males, respectively).

The Healthy People 2020 goal was to reduce prostate cancer mortality to 21.8 deaths per 100,000 males. According to Figure 232, the counties in the M-H Region, as well as NYS and NYS excluding NYC, met this target. Orange County had the highest rate of prostate cancer mortality in the M-H Region but was still under this target (21.4 per 100,000 males).

Figure 232



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Incidence	123.0	117.7	104.5	133.6	86.3	99.5	137.5	133.0	130.7
Mortality	16.2	21.4	9.7	12.1	13.8	16.7	16.0	16.3	17.0

Note: Incidence and mortality rates stratified by race/ethnicity are not available. However, trend data for incidence and mortality rates can be found on NYSDOH Community Health Indicator Reports (CHIRS).
Source: NYSDOH Cancer Registry, 2018
https://www.health.ny.gov/statistics/cancer/registry/countylist.htm

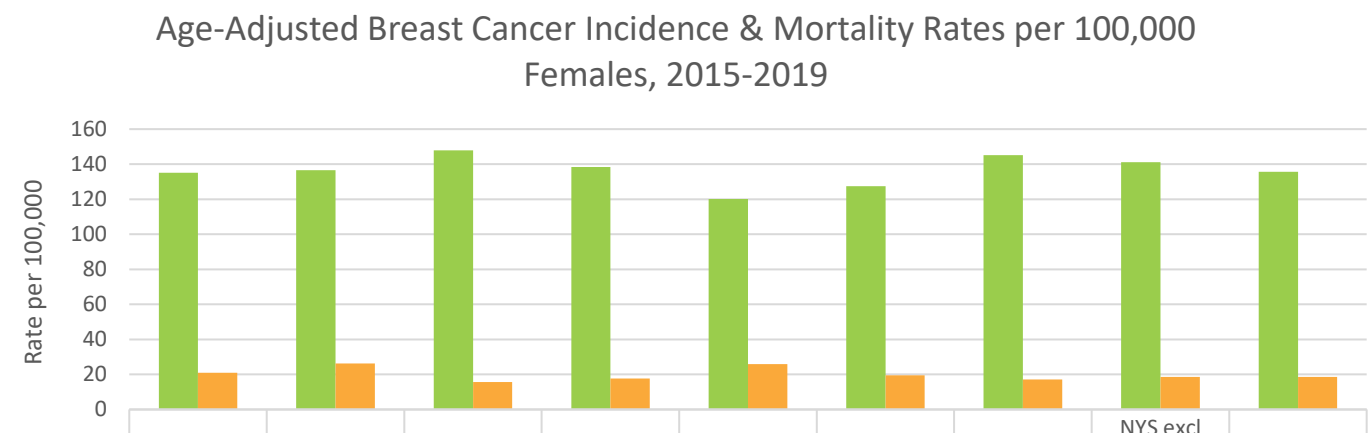
[165] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/cancer/prostate/index.htm, accessed September 2022

FEMALE BREAST CANCER

Breast cancer is one of the most prevalent cancers in American women. The most common symptom of breast cancer is a lump or mass found in the breast. The average risk of a woman in the US developing breast cancer in her lifetime is about 13%.[166]

In the US, the age-adjusted rate of breast cancer incidence from 2015 to 2019 was 128.3 per 100,000 females. When looking at the M-H Region as well as NYS and NYS excluding NYC, the highest rate of breast cancer incidence from 2015 to 2019 was in Putnam County, and the lowest rate was in Sullivan County (147.9 and 120.1 per 100,000 females, respectively). When looking at mortality rates, the highest rate was in Orange County at 25.8 per 100,000 females [see Figure 233].

Figure 233



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Incidence	135.1	136.6	147.9	138.3	120.1	127.4	145.2	141.2	135.7
Mortality	21.0	26.3	15.6	17.6	25.9	19.5	17.2	18.6	18.6

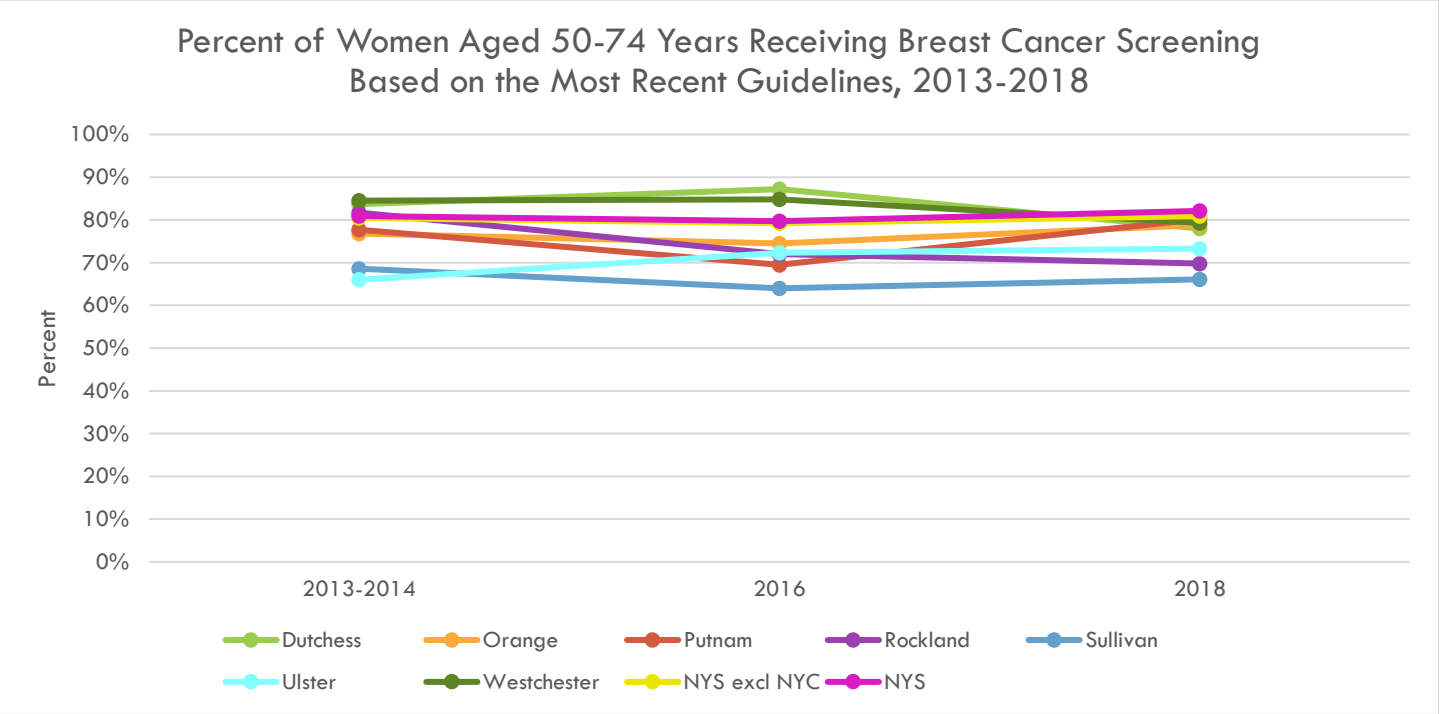
Note: Five-year age-adjusted rates.
Incidence and mortality rates stratified by race/ethnicity are not shown due to suppressed and/or unstable data in most counties. However, trend data for incidence and mortality rates can be found on NYSDOH Community Health Indicator Reports (CHIRS).
Source: NYSDOH Cancer Registry, 2021
https://www.health.ny.gov/statistics/cancer/registry/countylist.htm

Public awareness, screening tests, and advancements in treatment options contribute to the decreased mortality rates seen over time. One of the most important screening tests for breast cancer is a mammogram, which is an X-ray picture of the breast that should be routinely administered to women aged 40 years and older.[167] The Healthy People 2020 goal was to have at least 81.1% of the female population receive a breast cancer screening based on the most recent guidelines. However, as seen in Figure 234, in 2018 all of the counties in the M-H Region, as well as NYS excluding NYC, failed to meet this target. NYS was the only location to meet this target at 82.1%. The percentage of women aged 50-74 years receiving breast cancer screening based on the most recent guidelines has generally remained stable since 2013 [see Figure 234].

[166] American Cancer Society, 2022, https://www.cancer.org/cancer/breast-cancer/about/how-common-is-breast-cancer.html, accessed July 2022

[167] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/cancer/breast/basic_info/screening.htm, accessed October 2022

Figure 234



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	83.7%	76.8%*	77.7%	81.7%	68.6%	66.0%*	84.5%	80.5%	80.9%
2016	87.2%	74.5%	69.5%*	72.0%*	64.0%*	72.3%	84.8%	79.2%	79.7%
2018	78.0%*	78.8%	80.2%*	69.8%*	66.1%*	73.3%	79.3%	80.9%	82.1%

*: *Unreliable percentage due to large standard error*
Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

CERVIX UTERI CANCER

Cervical cancer occurs most often in females over the age of 30. There are no early signs or symptoms for this disease, but advanced cervical cancer can lead to symptoms of abnormal bleeding and discharge from the vagina. Human papillomavirus (HPV) is the cause of most cervical cancer. Other risk factors include having human immunodeficiency virus (HIV), smoking, using birth control pills for five years or more, and having given birth to three or more children. Cervical cancer can be screened for with a pap test starting at the age of 21 years.[168]

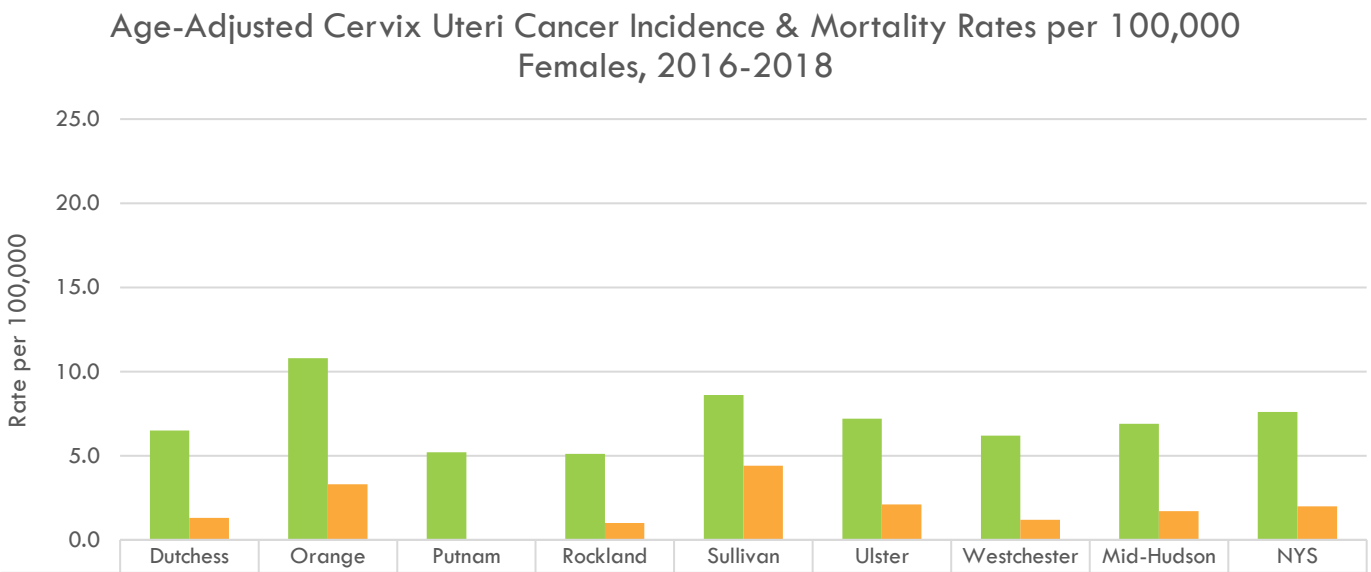
Other gynecological cancers include ovarian, uterine, vaginal, and vulvar cancers. While cervical cancer can be screened for, other gynecological cancers do not have screening tests to identify them early, so it is important to recognize warning signs and symptoms and to seek treatment.[169]

[168] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/cancer/cervical/basic_info/screening.htm, accessed June 2022

[169] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/cancer/gynecologic/basic_info/prevention.htm, accessed June 2022

When looking at the incidence and mortality rates of cervical cancer in Figure 235, the highest incidence rate was in Orange County at 10.8 per 100,000 females and the lowest was in Rockland County at 5.1 per 100,000 females. The highest mortality rate was seen in Sullivan County at 4.4 per 100,000 females. The Healthy People 2020 goal was to reduce the cervical cancer mortality rate to 2.2 deaths per 100,000 females. NYS met this target as well as all counties except Sullivan, Orange, and Ulster.

Figure 235

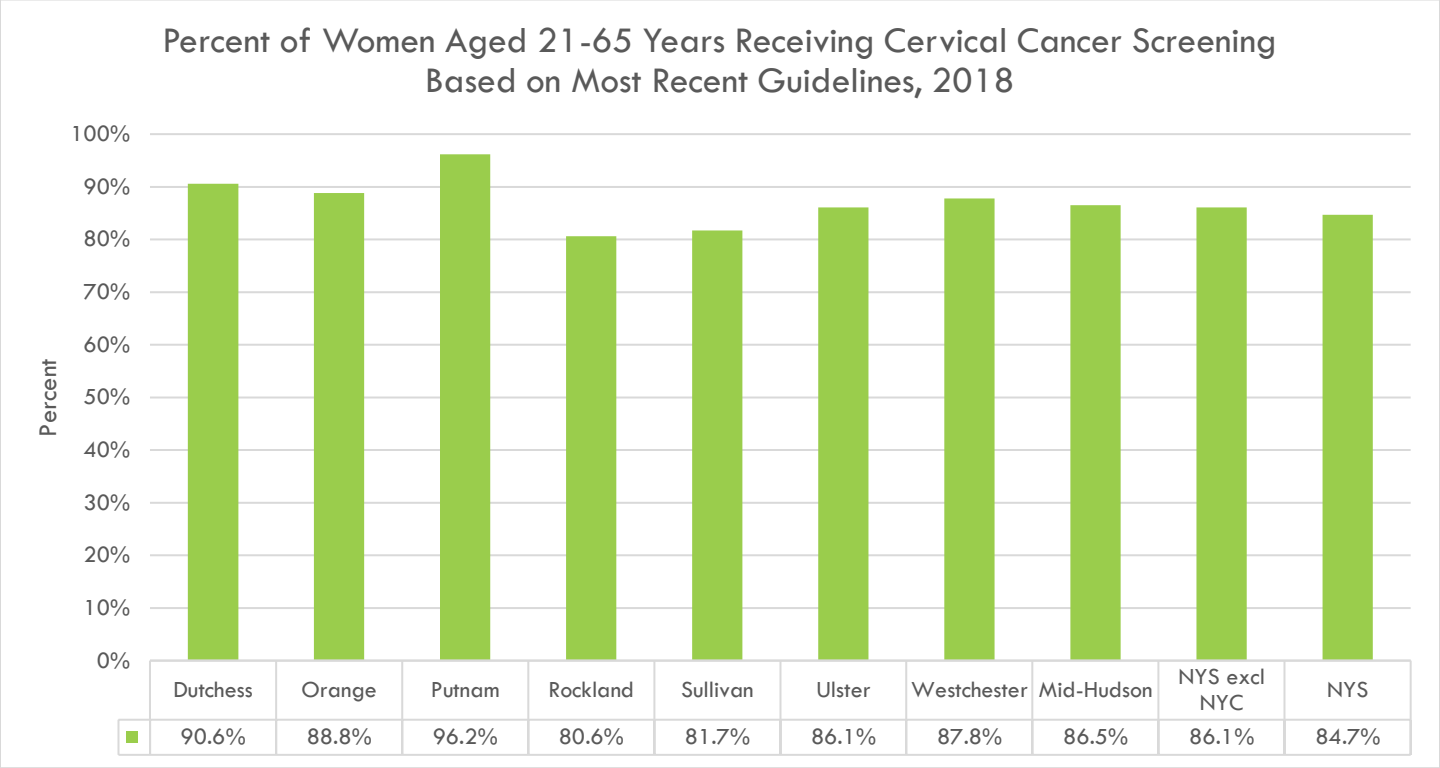


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
Incidence	6.5	10.8	5.2 *	5.1	8.6 *	7.2	6.2	6.9	7.6
Mortality	1.3 *	3.3	s	1.0 *	4.4 *	2.1*	1.2	1.7	2.0

**: Fewer than 20 events in the numerator, therefore the rate/percentage is unstable.*
s: Data are suppressed. The data do not meet the criteria for confidentiality.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Ag12a
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Ag13a

Women should be screened for cervical cancer starting at the age of 21 through a pap smear or pap test. This test is designed to look for any changes in the cervix and should be completed every three years, or as noted by the medical provider.[170] The Healthy People 2020 goal was to increase the percentage of women who receive a cervical cancer screening to 93.0%. NYS, the M-H Region, and its counties have not met this goal, with the exception of Putnam County. Rockland County had the lowest screening rates in the region with 80.6% of women aged 21-65 years being screened [see Figure 236].

Figure 236



Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

[170] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/cancer/cervical/basic_info/screening.htm, accessed October 2022

INFECTIOUS DISEASES

VACCINE-PREVENTABLE DISEASES

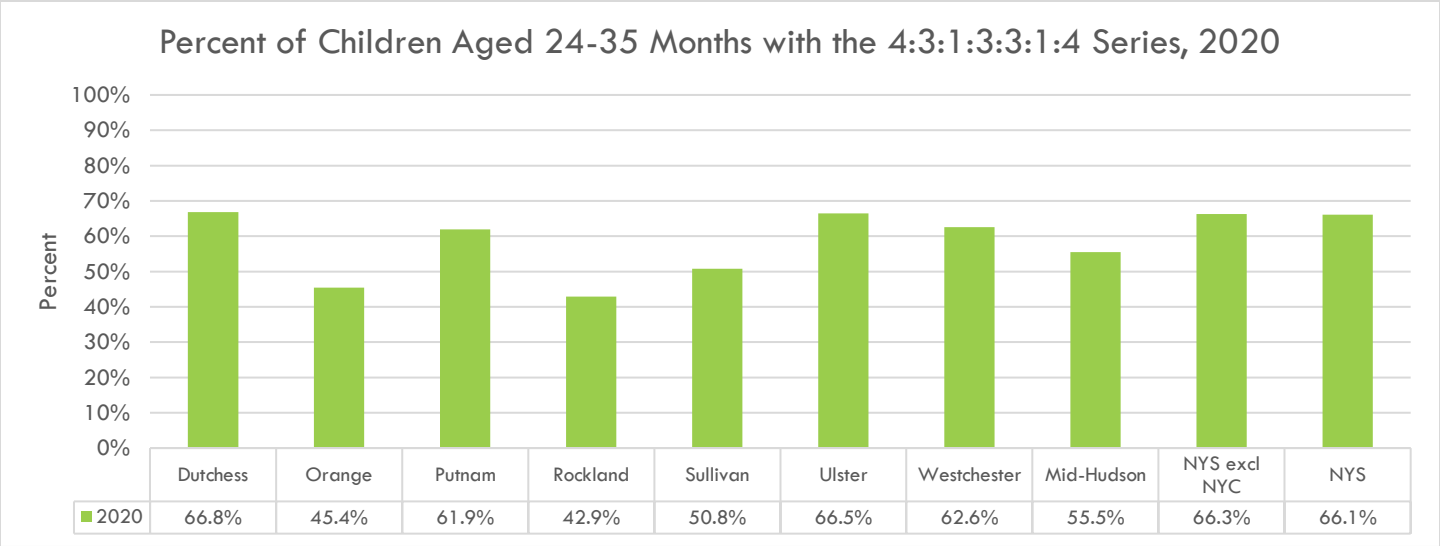
Infectious diseases are illnesses caused by disease-causing organisms that often spread from person-to-person. Life expectancy increased in the 20th century due largely to reductions in deaths caused by infectious diseases where vaccines were available. Despite these improvements, people in the US continue to get preventable diseases. Approximately 42,000 adults and 300 children in the US die each year from vaccine preventable diseases.[171] Communities with unimmunized populations are at an increased risk for outbreaks of vaccine preventable diseases.

CHILDHOOD IMMUNIZATION

The Advisory Committee on Immunization Practices (ACIP) recommends routine childhood vaccination by two years of age. The combined 4:3:1:3:3:1:4 vaccine series consists of four doses of diptheria, tetanus, and acellular pertussis (DTaP); three polio; one measles, mumps, rubella (MMR); three haemophilus influenza (Hib); three hepatitis B (HepB); one varicella; and four pneumococcal conjugate (PCV) vaccines. Appropriate vaccination coverage is linked to improved health outcomes and cost savings. Complying with age-appropriate receipt of vaccines is critical in providing maximum effectiveness against vaccine preventable diseases.

The Healthy People 2020 Immunization and Infectious Disease goals set a target that 80% of children should receive all doses in the 4:3:1:3:3:1:4 series by age 19-35 months to achieve and maintain effective vaccination coverage levels for universally recommended vaccines among children. NYSPA 2024 set a goal that 70.5% of the 24- to 35-month-old population complete the series. While coverage had generally been trending upwards, it remained suboptimal in the M-H Region for 2020 with a 55.5% coverage overall [see Figure 238]. Dutchess and Ulster Counties performed the best at 66.8% and 66.5% respectively, while Rockland and Orange Counties had the lowest coverage at 42.9% and 45.4%, respectively [see Figure 237].

Figure 237

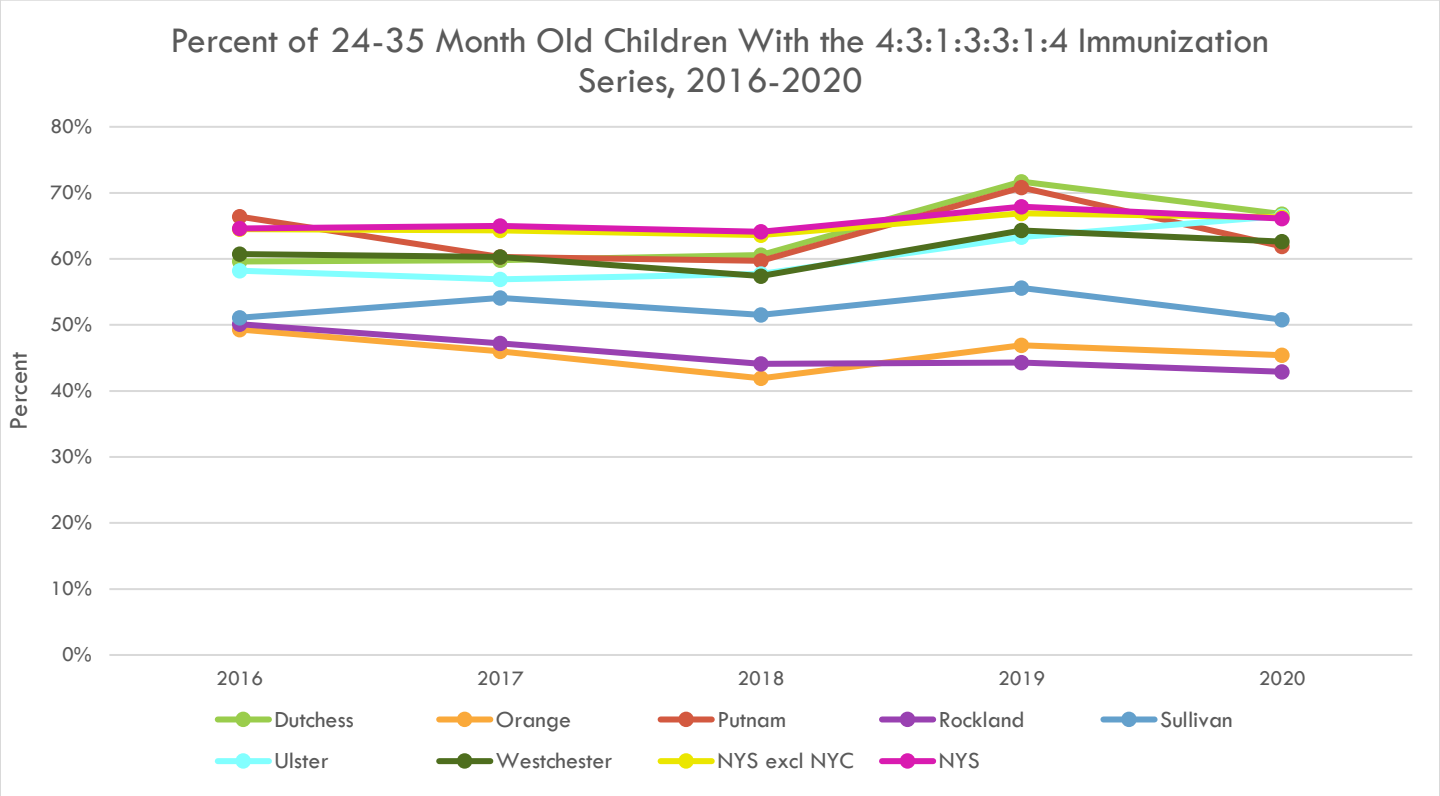


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
2020	66.8%	45.4%	61.9%	42.9%	50.8%	66.5%	62.6%	55.5%	66.3%	66.1%

Source: NYS Prevention Agenda Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/dashboard/pa_dashboard&p=it&ind_id=pa400

[171] Healthy People 2020, Office of Disease Prevention and Health Promotion, 2022, https://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases#one, accessed September 2022

Figure 238



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2016	59.6%	49.3%	66.4%	50.1%	51.1%	58.2%	60.7%	64.5%	64.6%
2017	59.8%	46.0%	60.3%	47.2%	54.1%	56.9%	60.3%	64.3%	65.0%
2018	60.6%	41.9%	59.7%	44.1%	51.5%	57.7%	57.4%	63.6%	64.1%
2019	71.7%	46.9%	70.8%	44.3%	55.6%	63.3%	64.3%	66.9%	67.9%
2020	66.8%	45.4%	61.9%	42.9%	50.8%	66.5%	62.6%	66.3%	66.1%

Source: NYS Prevention Agenda Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/dashboard/pa_dashboard&p=it&ind_id=pa400

COVID-19

COVID-19, also known as coronavirus disease, is an infection caused by the SARS-CoV-2 virus.[172] Chinese officials first identified the novel coronavirus as the causative agent of an outbreak in Wuhan, China on January 7, 2020. The CDC reported the first positive laboratory confirmed case of 2019 Novel Coronavirus in the US on January 20, 2020. On March 11, 2020, the officially WHO declared COVID-19 a pandemic.[173]

Towards the beginning of the pandemic, the rapid growth of COVID-19 cases caused shortages of several resources including personal protective equipment (PPE), ventilators, hospital beds, body bags, and blood. The pandemic also led to widespread shutdowns of schools, workplaces, businesses, and public gatherings. By August of 2020, COVID-19 became the third leading cause of death in the US.[173]

[172] World Health Organization, 2022, https://www.who.int/health-topics/coronavirus#tab=tab_1, accessed October 2022

[173] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/museum/timeline/covid19.html, accessed October 2022

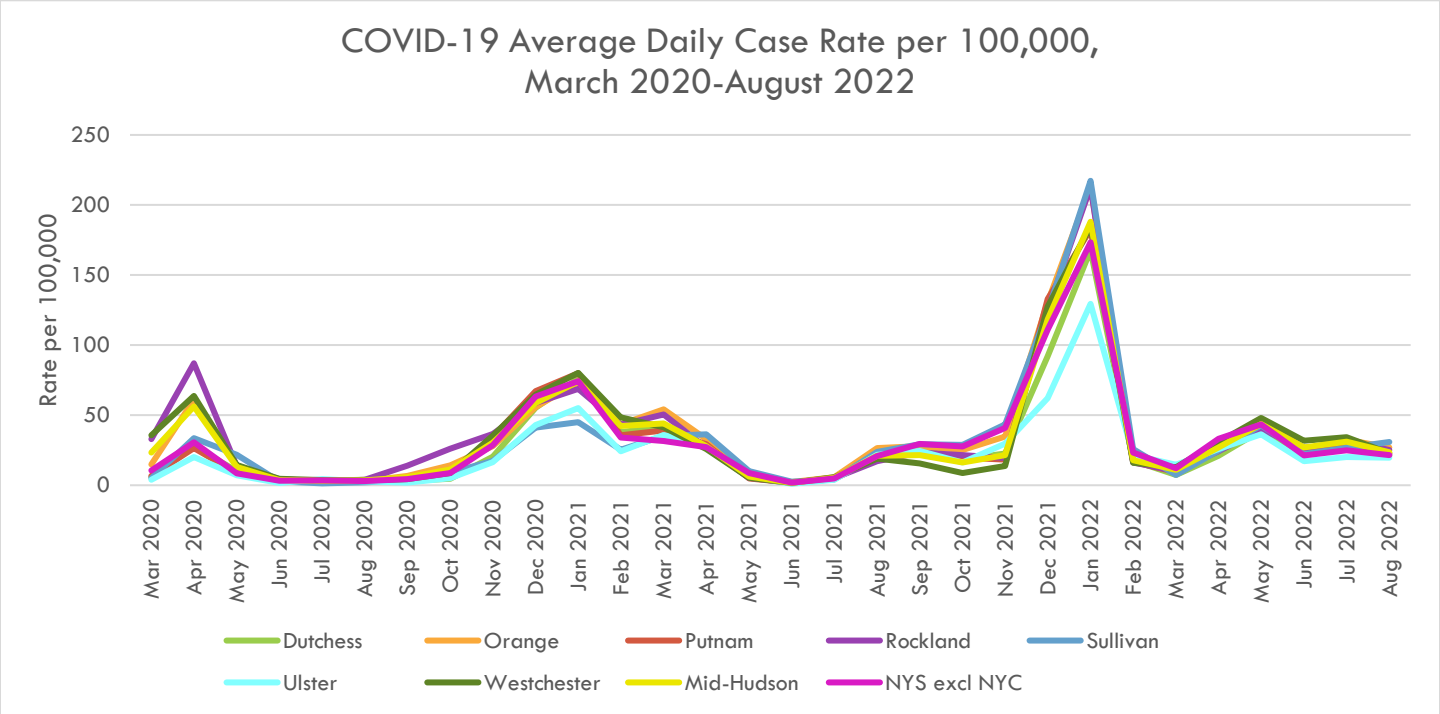
The COVID-19 pandemic also highlighted health disparities in vulnerable populations in the US. Available COVID-19 data reflected these disparities in positivity rates, case numbers, hospitalizations, and fatalities. Nationwide, for example, non-Hispanic Black individuals and Hispanic individuals were more than twice as likely to be hospitalized due to COVID-19 than non-Hispanic White individuals.[174] In the M-H Region, non-Hispanic Black individuals generally had a higher rate of hospitalization than any other race or ethnicity category over the course of the pandemic [see Figure 246].

The SARS-CoV-2 virus is continuously branching out genetically into what are known as variants. Different variants can have different attributes that can affect transmission, illness severity, treatment, and vaccine resistance. Some variants that gained prominence at different points in the pandemic include the Alpha, Delta, and Omicron variants.[175]

The CDC defines three transmission periods over the course of the COVID-19 Pandemic in the US: the Winter 2020-21 Period (December 1, 2020–February 28, 2021), the Delta Period (July 15–October 31, 2021), and the Omicron Period (December 19, 2021–January 15, 2022).[176]

The M-H Region and all seven counties within, as well as NYS excluding NYC, all experienced their highest COVID-19 case rate peaks during the Omicron Period in January of 2022. Of the seven Mid-Hudson counties, Sullivan County had the highest peak daily case rate during this period at 217.28 per 100,000 population, while Ulster County had the lowest peak daily case rate at 129.45 per 100,000 population [see Figure 239].

Figure 239



Source: New York State Statewide COVID-19 Testing, 2022
https://health.data.ny.gov/Health/New-York-State-Statewide-COVID-19-Testing/xdss-u53e/data

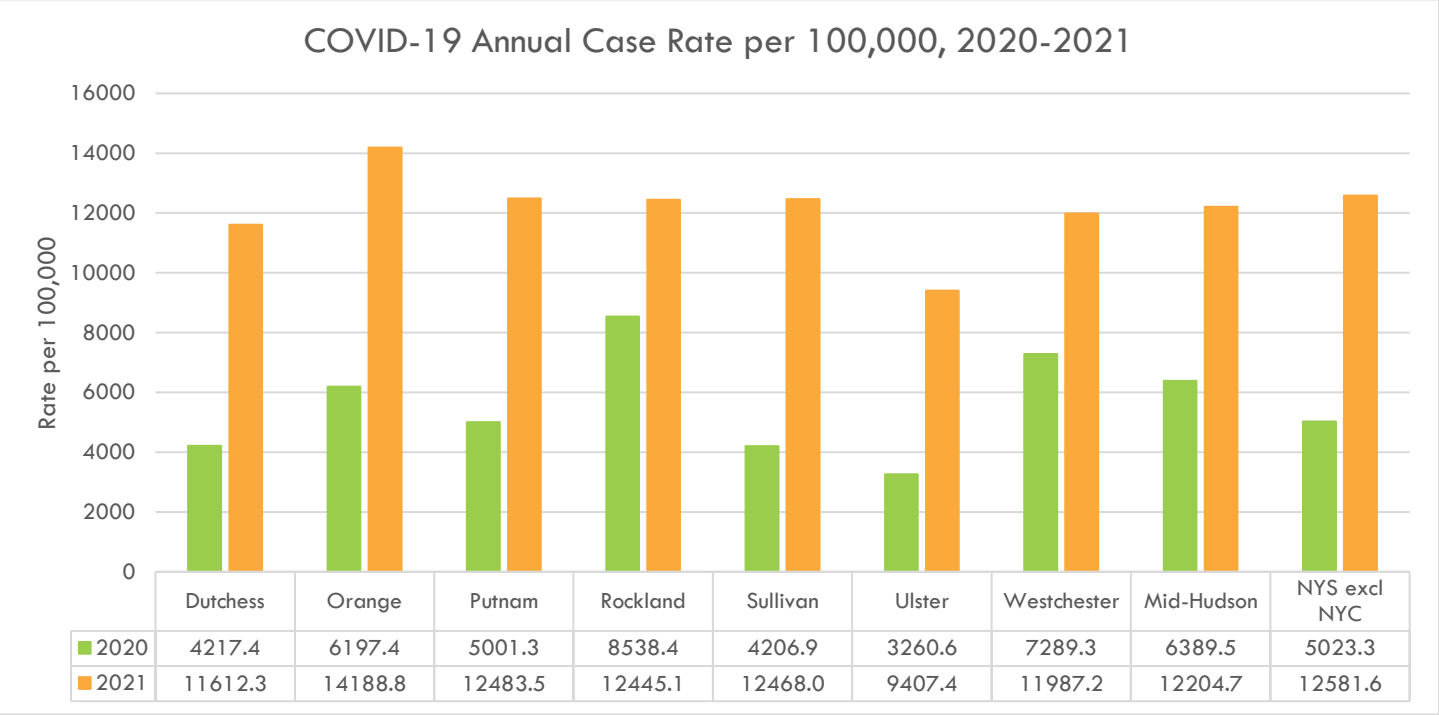
[174] GAO, 2021, https://www.gao.gov/assets/gao-21-105354.pdf, accessed October 2022

[175] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/coronavirus/2019-ncov/variants/understanding-variants.html, accessed August 2022

[176] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/mmwr/volumes/71/wr/pdfs/mm7104e4-H.pdf, accessed September 2022

Annual case rates were higher in 2021 than in 2020 for the M-H Region and its individual counties and in NYS excluding NYC. Orange County had the highest annual case rate per 100,000 in the region in 2021 (14188.8) and Ulster County had the lowest annual case rate per 100,000 (9407.4). Rockland County had the highest annual case rate in the region in 2020 at 12445.1 per 100,000, while Ulster County had the lowest at 9407.4 per 100,000 [see Figure 240].

Figure 240

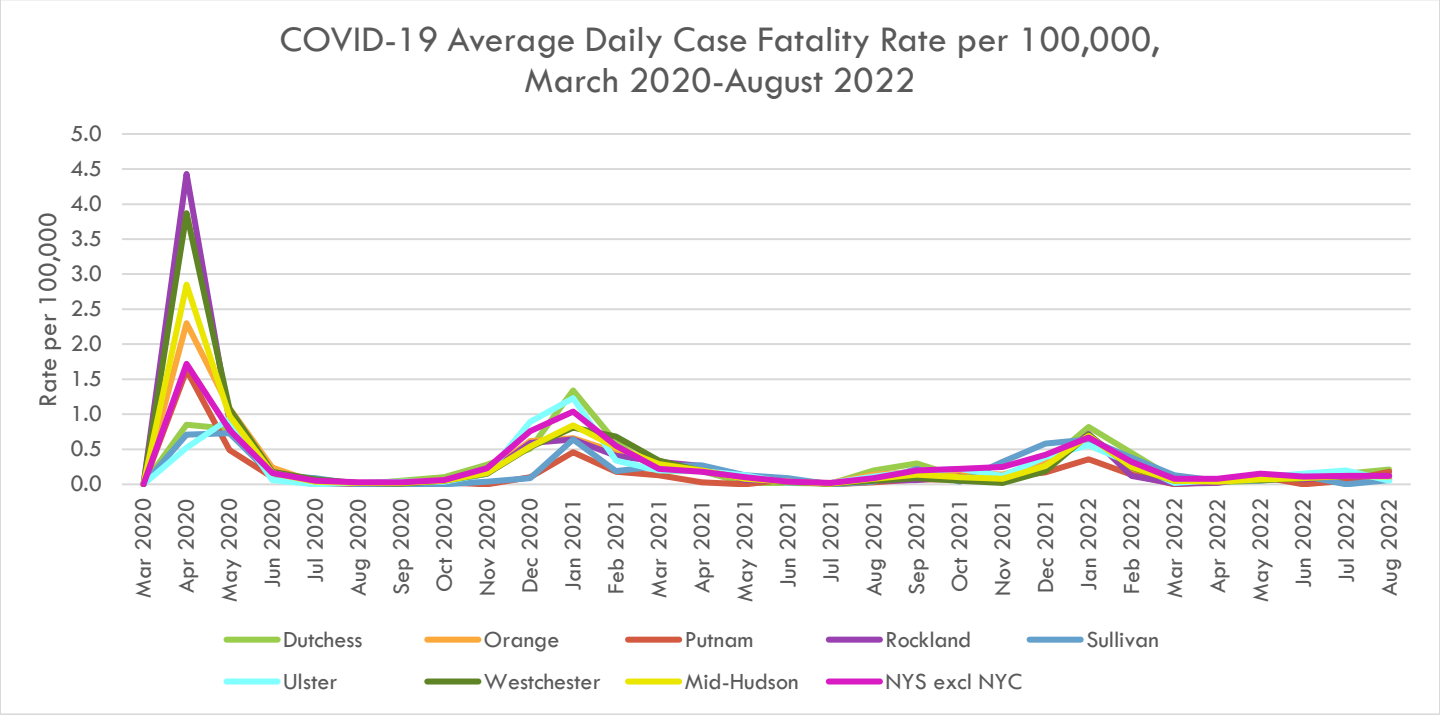


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC
2020	4217.4	6197.4	5001.3	8538.4	4206.9	3260.6	7289.3	6389.5	5023.3
2021	11612.3	14188.8	12483.5	12445.1	12468.0	9407.4	11987.2	12204.7	12581.6

Source: New York State Statewide COVID-19 Testing, 2022
https://health.data.ny.gov/Health/New-York-State-Statewide-COVID-19-Testing/xdss-u53e/data

The average daily mortality rate per 100,000 for the M-H Region overall and NYS excluding NYC was highest during the Winter 2020-21 Period. At the start of the pandemic in 2020, Rockland County saw the highest fatality rate while Sullivan County saw the lowest. Unlike the other M-H Region counties, both Dutchess and Ulster Counties had higher rates of COVID-19 deaths in the late 2020-early 2021 peak [see Figure 241].

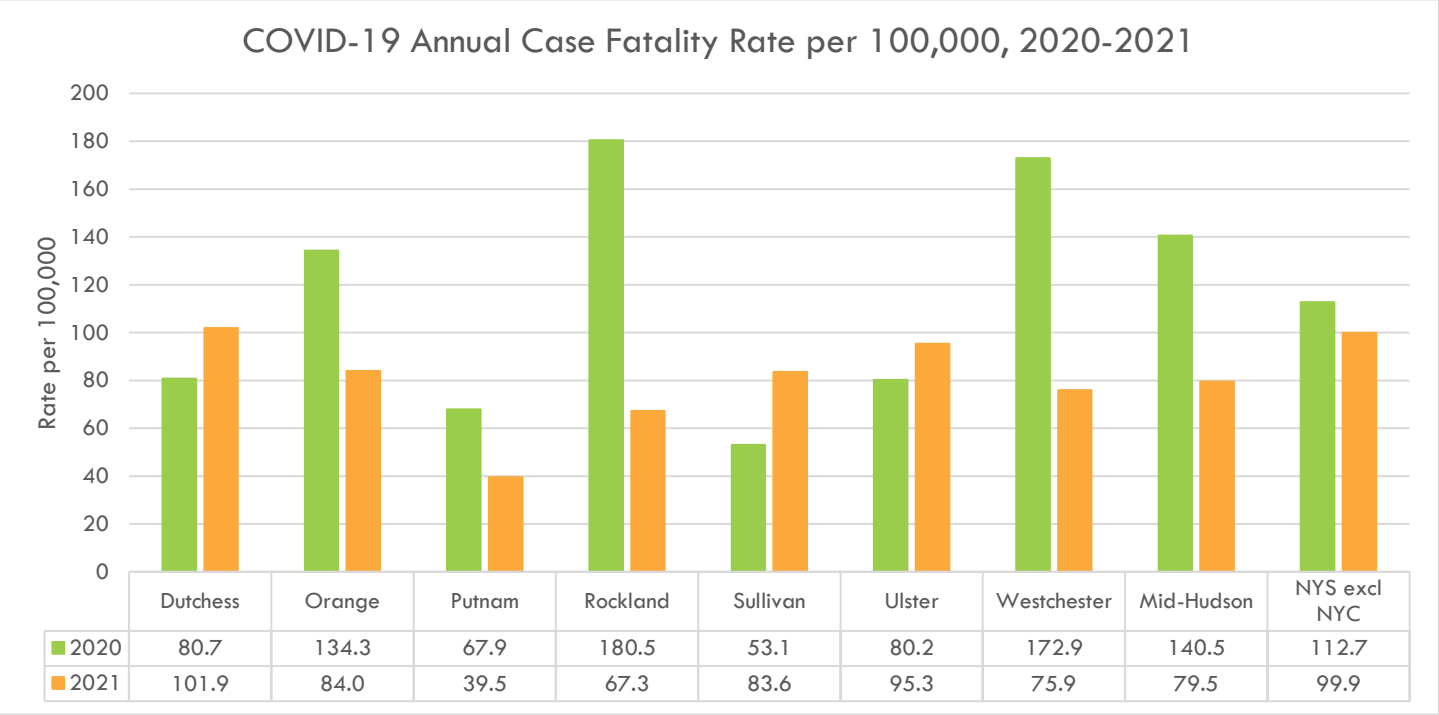
Figure 241



Source: New York State Statewide COVID-19 Fatalities by County, 2022
https://health.data.ny.gov/Health/New-York-State-Statewide-COVID-19-Fatalities-by-Co/xymy-pny5/data

In both 2020 and 2021, the M-H Region experienced a higher rate of COVID-19 fatalities than NYS excluding NYC. In 2020, Rockland County saw the highest rate of COVID-19 mortality, while Dutchess County had the highest rate in 2021. Overall, the Region, State, and most counties saw a decrease in mortality rate from 2020 to 2021; however, Dutchess, Sullivan, and Ulster Counties had higher rates of COVID-19 death in 2021 compared to 2020 [see Figure 242].

Figure 242



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC
2020	80.7	134.3	67.9	180.5	53.1	80.2	172.9	140.5	112.7
2021	101.9	84.0	39.5	67.3	83.6	95.3	75.9	79.5	99.9

Source: New York State Statewide COVID-19 Fatalities by County, 2022
https://health.data.ny.gov/Health/New-York-State-Statewide-COVID-19-Fatalities-by-Co/xymy-pny5/data

COVID-19 vaccines were first issued emergency use authorizations by the US Food and Drug Administration (FDA) in mid-December 2020, allowing for their distribution and administration to the US population aged 16 years and older.[177] Within NYS, a prioritization schedule was created to administer doses beginning with high risk populations and essential healthcare workers.[178] Through the first quarter of 2021, vaccine access expanded and in early April all New Yorkers aged 16 years and older were eligible to receive a COVID-19 vaccine.[179] By mid-May 2021, following the initial roll out of the prioritization schedule, individuals aged 12 years and older were deemed eligible in New York following the FDA's determination and NYS Clinical Advisory Task Force's recommendation.[180] Later, children aged 5 to 11 years and six months and older became eligible in NYS in

[177] FDA US Food & Drug Administration, 2020, https://www.fda.gov/news-events/press-announcements/fda-takes-key-action-fight-against-covid-19-issuing-emergency-use-authorization-first-covid-19, accessed September 2022

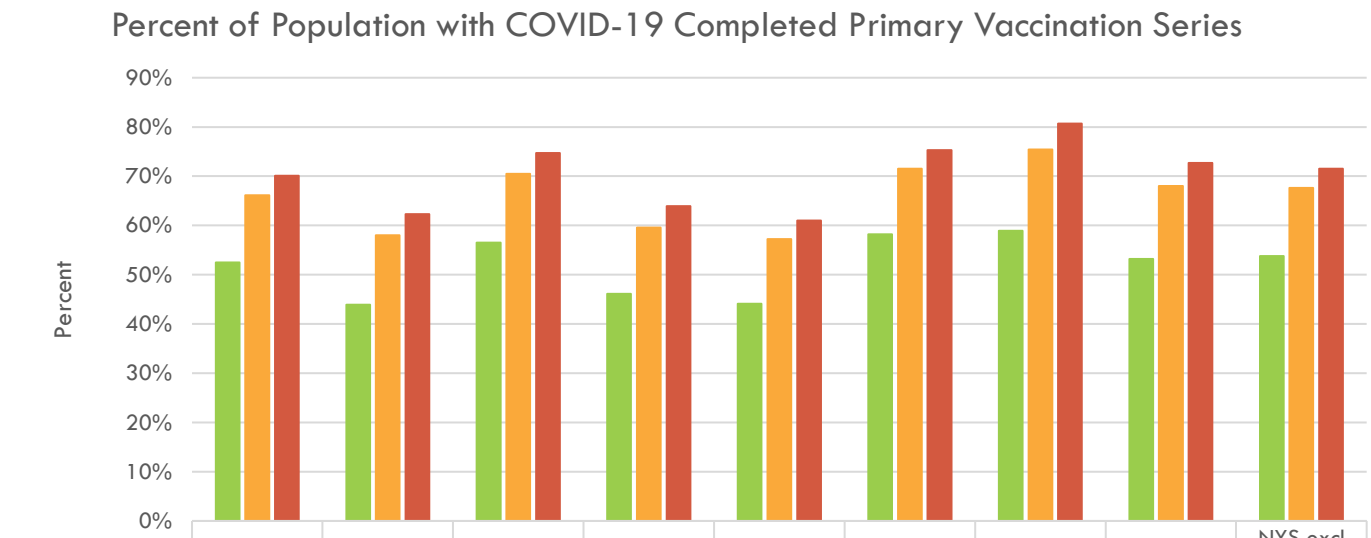
[178] New York State Department of Health, 2020, https://www.governor.ny.gov/sites/default/files/atoms/files/NYS_COVID_Vaccination_Program_Book_10.16.20_FINAL.pdf, accessed September 2022

[179] New York State, 2021, https://www.governor.ny.gov/news/governor-cuomo-announces-new-yorkers-30-years-age-and-older-will-be-eligible-receive-covid-19, accessed September 2022

[180] New York State, 2021, https://www.governor.ny.gov/news/governor-cuomo-accepts-nys-clinical-advisory-task-force-recommendation-immediately-implement, accessed September 2022

November 2021 and June 2022, respectively.[181,182] Booster doses became available for adults at high risk of severe COVID-19 infection and those 65 years and older in September 2021, later rolling out to those 18 years and older, 12 to 17 years old, and 5 to 11 years old through May 2022.[183] As of September 2022, bivalent vaccines designed to protect against Omicron BA.4 and BA.5 variants has been developed, authorized, and deployed.[184] However, prior to receiving any booster doses, the primary vaccination series must be completed. When initially offered, vaccine uptake across the counties in the Mid-Hudson Region was hindered by availability of doses. By end of June 2021, just over half of the entire population in the Region had a complete COVID-19 vaccination series [see Figure 243]. Between July and December 2021, completed series coverage rates rose an average of 21% across the Region. Vaccine uptake slowed in 2022 and has remained static since Spring 2022.

Figure 243



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC
As of 6/30/21	52.5%	43.9%	56.5%	46.1%	44.1%	58.2%	58.9%	53.2%	53.8%
As of 12/31/21	66.1%	58.0%	70.5%	59.6%	57.2%	71.5%	75.4%	68.0%	67.6%
As of 6/30/22	70.1%	62.3%	74.7%	63.9%	61.0%	75.3%	80.7%	72.7%	71.5%

Source: New York State Statewide COVID-19 Vaccination Data by County, 2022
https://health.data.ny.gov/Health/New-York-State-Statewide-COVID-19-Vaccination-Data/duk7-xrni/data

[181] New York State, 2021, https://www.governor.ny.gov/news/statement-governor-kathy-hochul-cdcs-recommendation-pfizer-vaccine-5-11-year-olds, accessed September 2022

[182] New York State, 2022, https://www.governor.ny.gov/news/governor-hochul-highlights-cdcs-recommendation-covid-19-vaccine-children-under-five, accessed September 2022

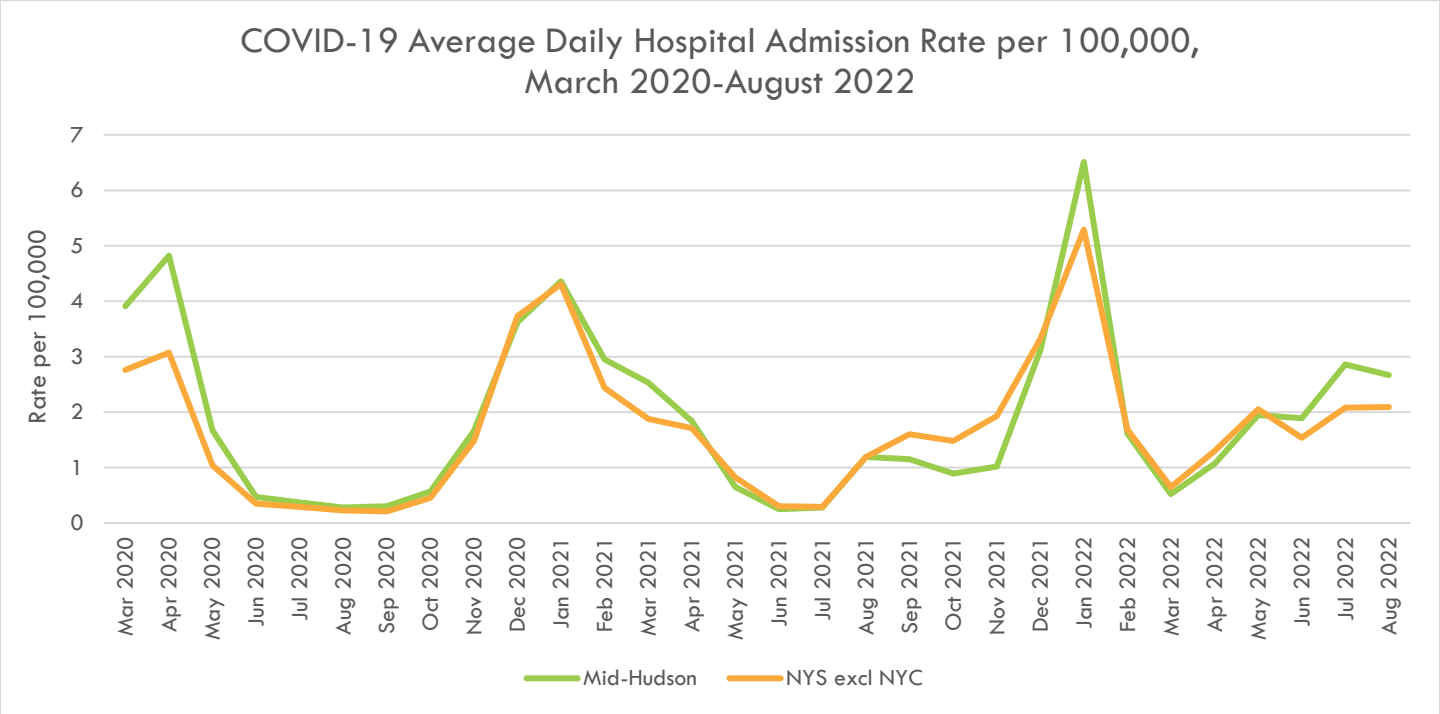
[183] Immunize.org, 2022, https://www.immunize.org/timeline/, accessed October 2022

[184] New York State, 2022, https://www.governor.ny.gov/news/governor-hochul-announces-new-yorkers-can-now-receive-new-covid-19-vaccine-boosters-designed, accessed October 2022

Hospital admission and daily census rates mirror the incidence rates seen throughout the pandemic. The M-H Region's hospitals saw the highest rate of admission during the Omicron Period in January 2022, at 6.51 admissions daily per 100,000 population [see Figure 244].

Beginning in April 2022, hospital census reports were not required on weekends and holidays. As such, the daily admission data is displayed through March 2022 and daily hospitalization data is an average of all available days reported during the months of April 2022 to August 2022.

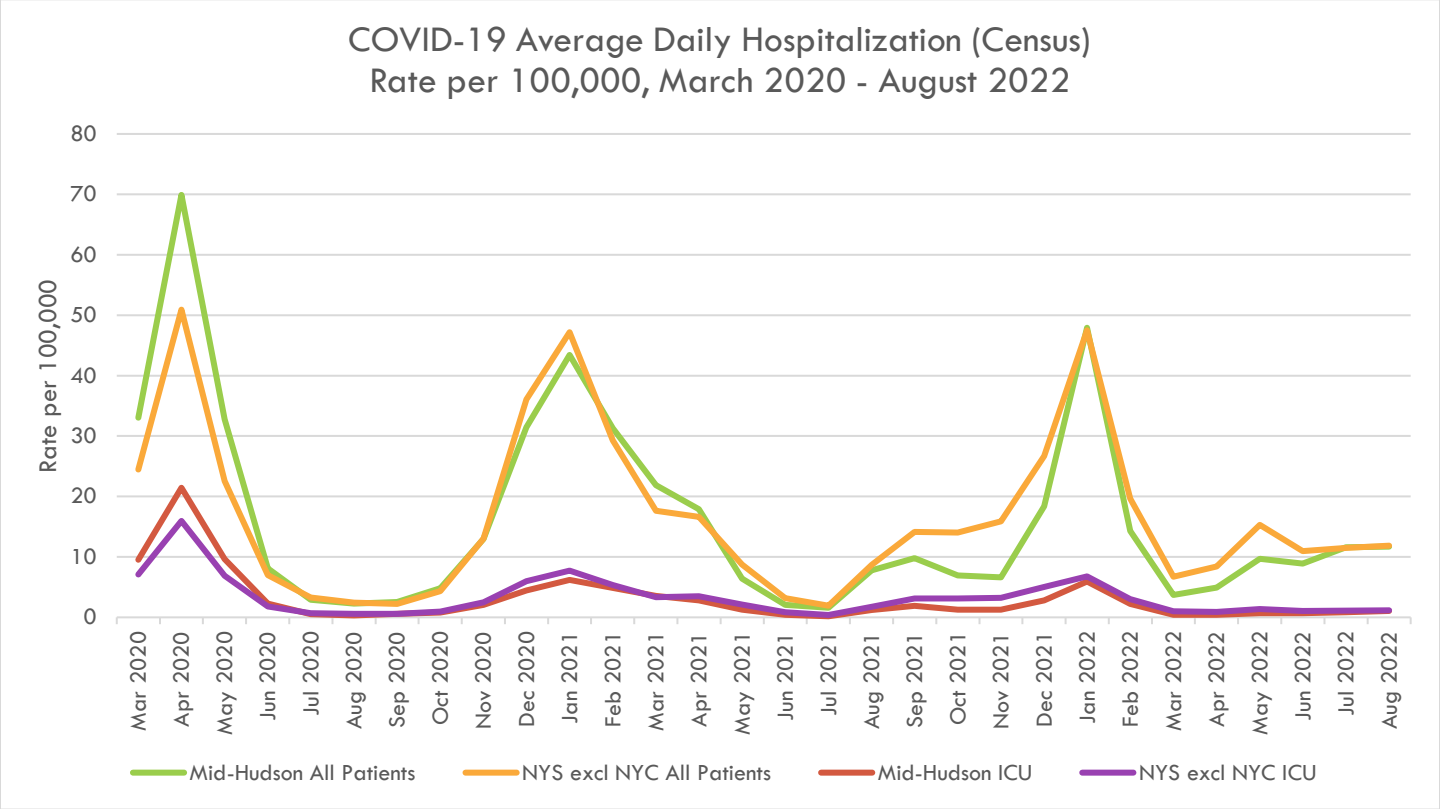
Figure 244



Source: New York Forward COVID-19 Daily Hospitalization Summary by Region, 2022
https://health.data.ny.gov/Health/New-York-Forward-COVID-19-Daily-Hospitalization-Su/qutr-irdf/data

While rates of hospital admission were highest for the Region in January 2022, the rate of hospitalization (daily count of patients admitted) was highest (70 per 100,000 population) at the start of the pandemic in April 2020. Hospital censuses of acute care and ICU patients also spiked in the following winters [see Figure 245].

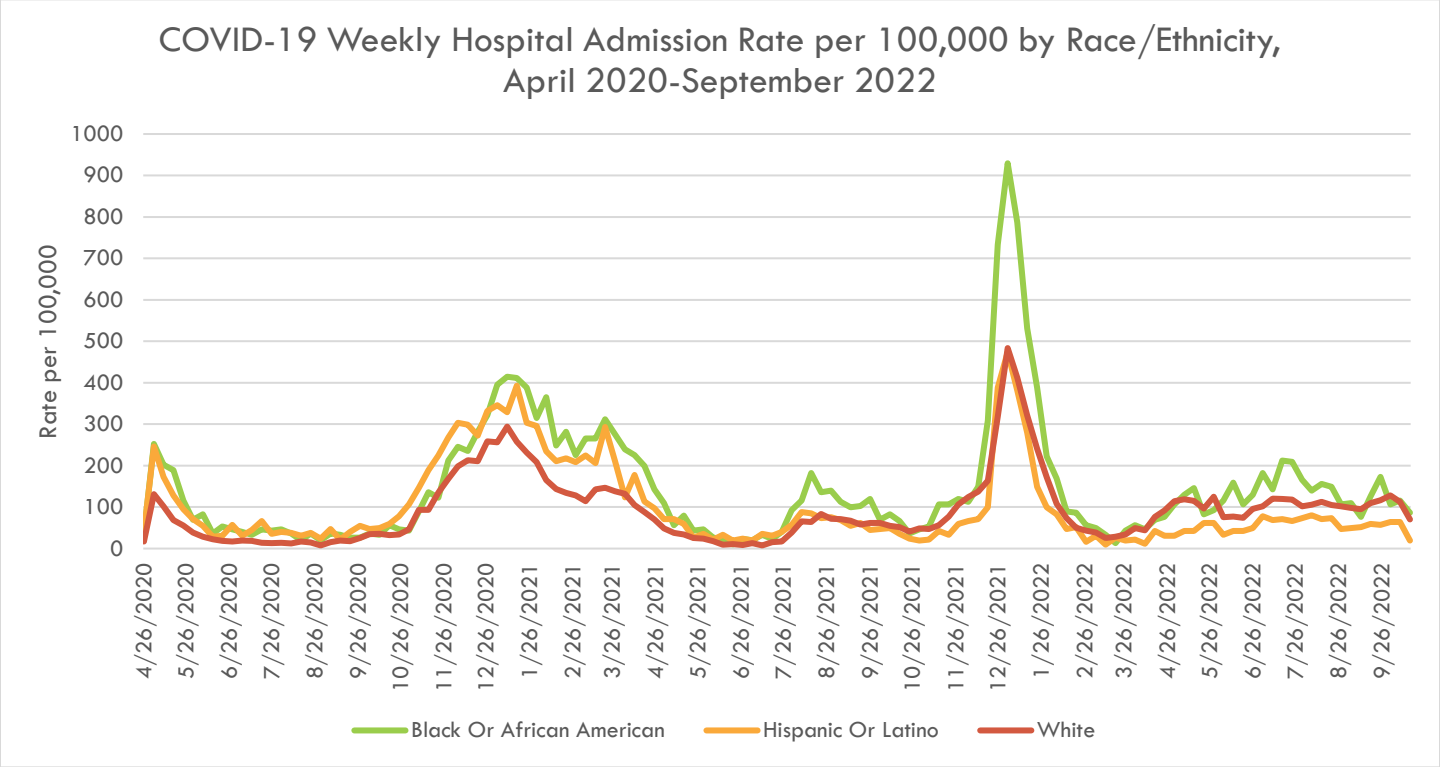
Figure 245



Source: New York Forward COVID-19 Daily Hospitalization Summary by Region, 2022
https://health.data.ny.gov/Health/New-York-Forward-COVID-19-Daily-Hospitalization-Su/qutr-irdf/data

When looking at COVID-19 positive hospital admission rates in the M-H Region by race and ethnicity, Black individuals consistently had higher admission rates than White individuals. Hispanic hospital admission rates were higher than White hospital admission rates in 2021 and became lower in the second quarter of 2022 [see Figure 246].

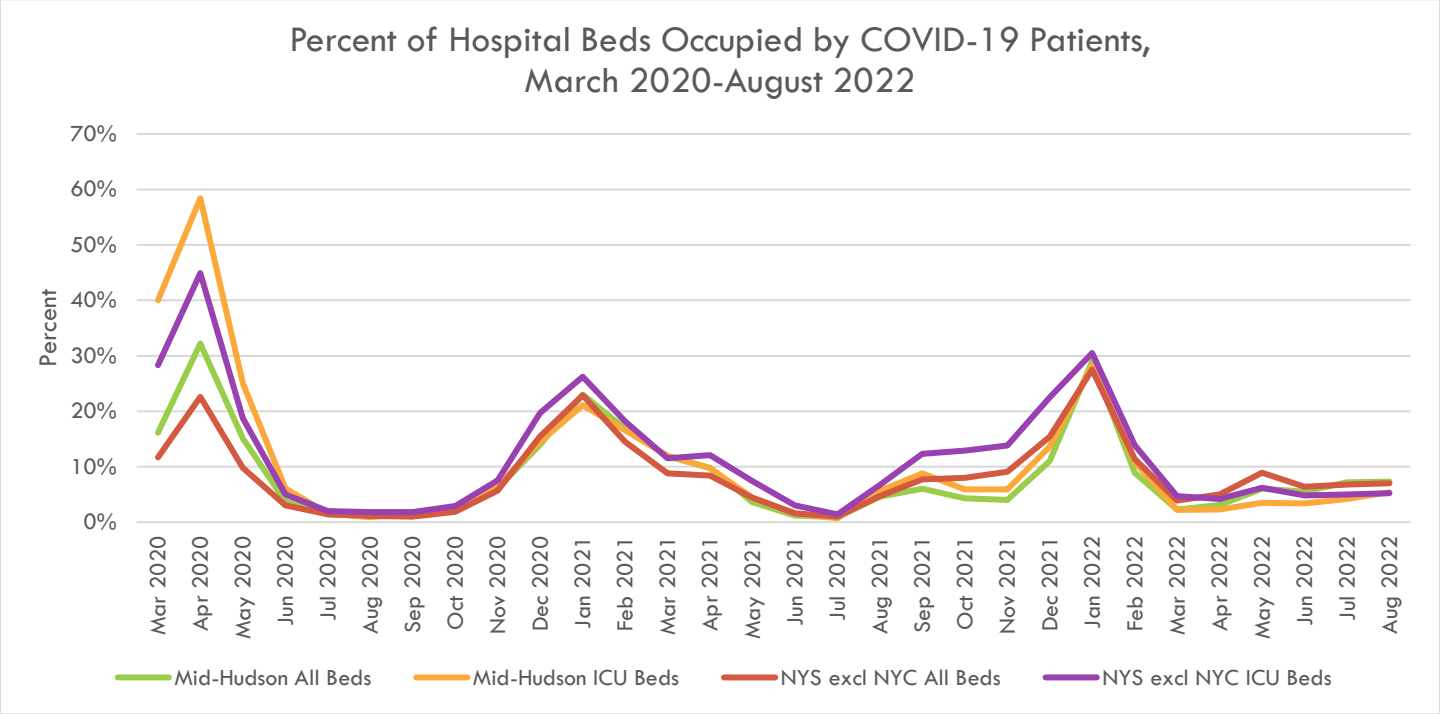
Figure 246



Source: New York State Statewide COVID-19 Admissions by Age and Race/Ethnicity, 2022
https://health.data.ny.gov/Health/New-York-State-Statewide-COVID-19-Admissions-by-Ag/n2f5-zm5f/data

Concerns of hospital bed availability remained an issue throughout the pandemic. Rates of hospital beds occupied by COVID-19 patients surged at the start of the pandemic in Spring 2020, reaching a high of 32.2% of all available beds and 58.4% of available ICU beds in April 2020 [see Figure 247].

Figure 247



Source: New York Forward COVID-19 Daily Hospitalization Summary by Region, 2022
https://health.data.ny.gov/Health/New-York-Forward-COVID-19-Daily-Hospitalization-Su/qutr-irdf/data

HUMAN PAPILLOMAVIRUS IMMUNIZATION

In the US, HPV is the most common sexually transmitted infection (STI). In the US in 2018 there were an estimated 43 million people living with HPV infections. Each year approximately 13 million more Americans become infected with the virus, including adolescents.[185] HPV is spread through vaginal, anal, or oral sex with someone who has the virus, even if they have no symptoms. Anyone who is sexually active is at risk for HPV and symptoms may not develop until years after exposure.

While HPV can often go away on its own without causing any health problems, it can lead to conditions such as genital warts and cervical cancer. There is no way to know which people with HPV will develop cancer or other health problems. The Centers for Diseases Control and Prevention (CDC) recommends adolescents aged 11-12 years get two doses of HPV vaccine to protect against cancers caused by HPV. Other actions individuals can take to lower their risk of HPV include screening for cervical cancer, using latex condoms during sex, and limiting number of sexual partners. For more information on cervical cancer, see page 253.

The NYSPA 2019-2024 target aims to increase the percentage of 13-year-old adolescents completing the HPV vaccine series by 10%, which translates to 37.4% state wide.[186] Westchester County had the highest percentage

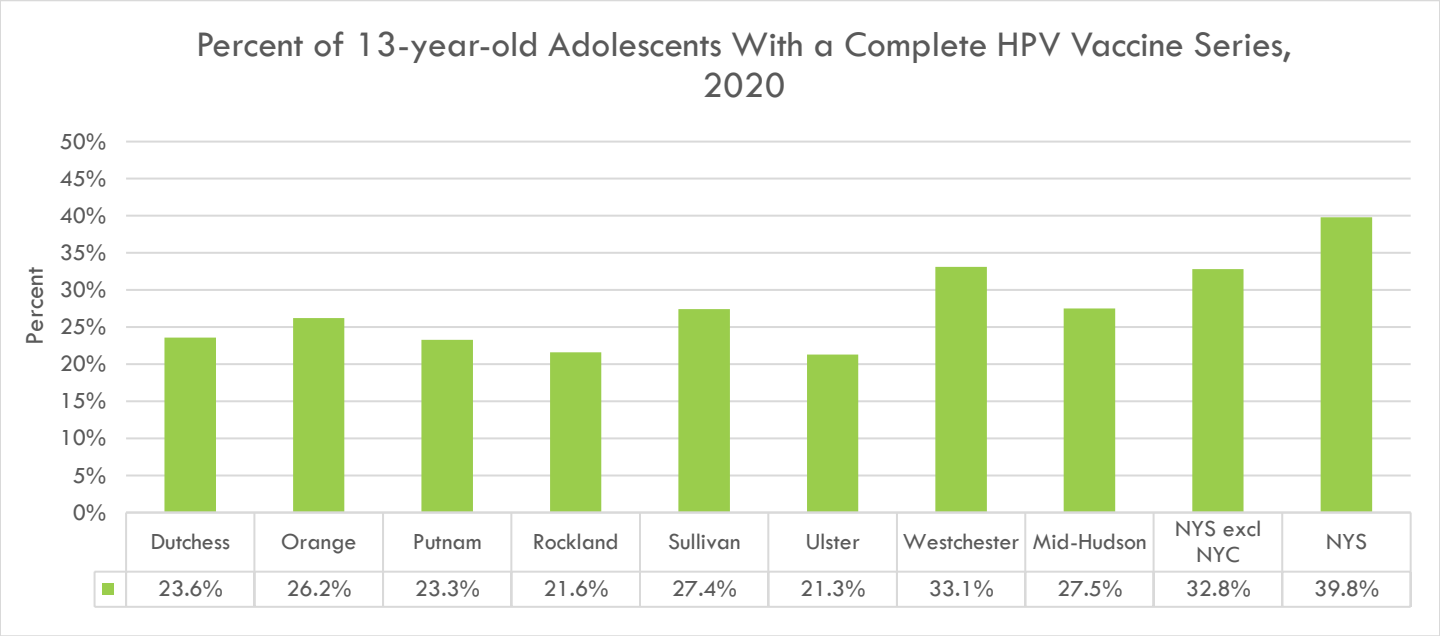
[185] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/hpv/parents/about-hpv.html#:~:text=HPV%20infections%20are%20common&text=More%20than%2042%20million%20Americans,teens%2C%20become%20infected%20each%20year, accessed August 2022

[186] New York State Department of Health, 2021, https://health.ny.gov/prevention/prevention_agenda/2019-2024/comm.htm, accessed October 2022

of adolescents aged 13 years who received two or more doses of the HPV vaccines (33.1%), while Ulster County had the lowest percentage (21.3%) [see Figure 248]. The percentage of adolescents who received two or more doses has been increasing since 2016 [see Figure 249]. The overall percentage of adolescents who completed the HPV series in the M-H Region, at 27.5%, is still well below the current NYS target.

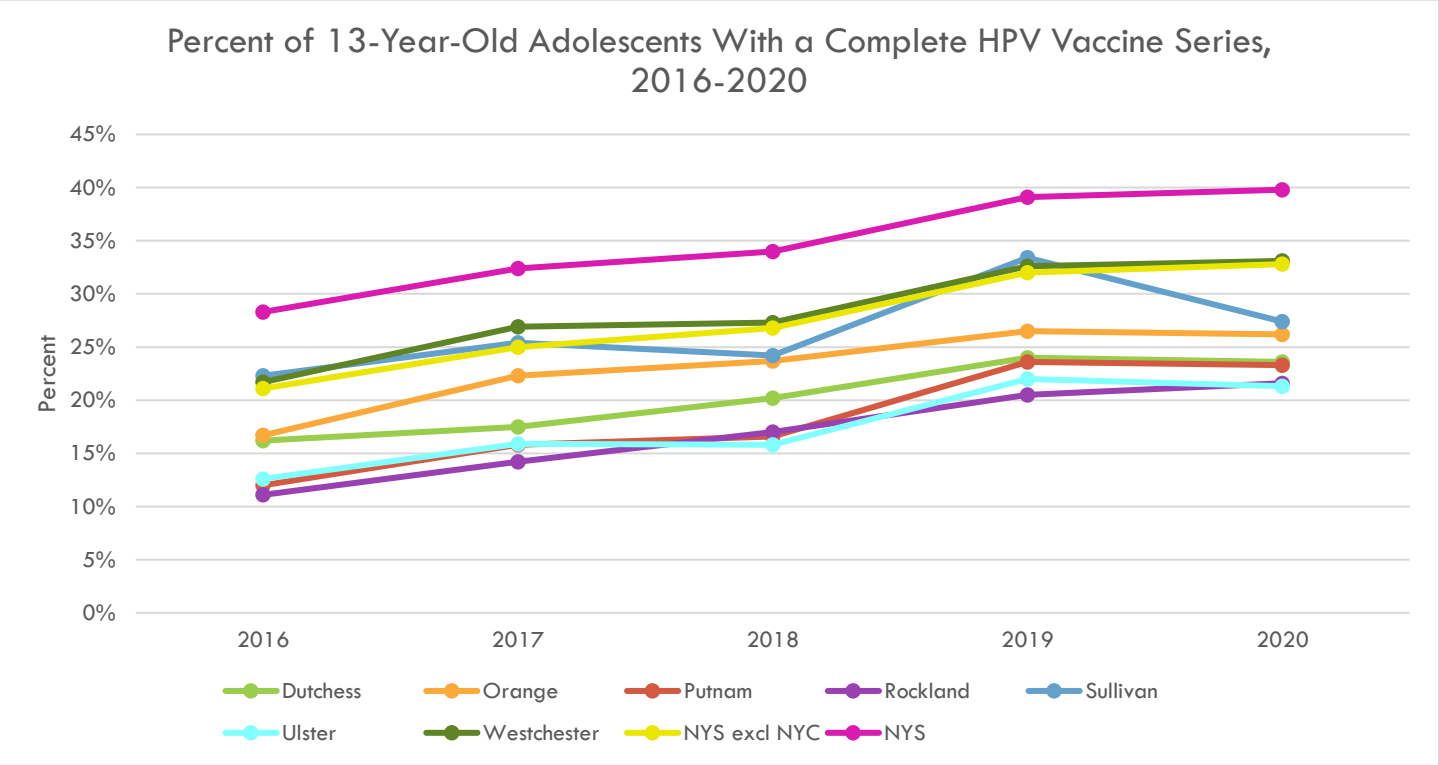
It is important to note that in the previous M-H Region CHA (2019-2022), this measure focused solely on the completion rates for females aged 13-17 years. Since that time, NYS has revised the objective to include all adolescents completing the series at age 13 and as a result trend analysis is not available.

Figure 248



Source: NYS Prevention Agenda Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fdashboard%2Fpa_dashboard&p=it&ind_id=pa41_0

Figure 249



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2016	16.2%	16.7%	12.0%	11.1%	22.3%	12.6%	21.7%	21.1%	28.3%
2017	17.5%	22.3%	15.8%	14.2%	25.4%	15.9%	26.9%	25.0%	32.4%
2018	20.2%	23.7%	16.6%	17.0%	24.2%	15.8%	27.3%	26.8%	34.0%
2019	24.0%	26.5%	23.6%	20.5%	33.4%	22.0%	32.6%	32.0%	39.1%
2020	23.6%	26.2%	23.3%	21.6%	27.4%	21.3%	33.1%	32.8%	39.8%

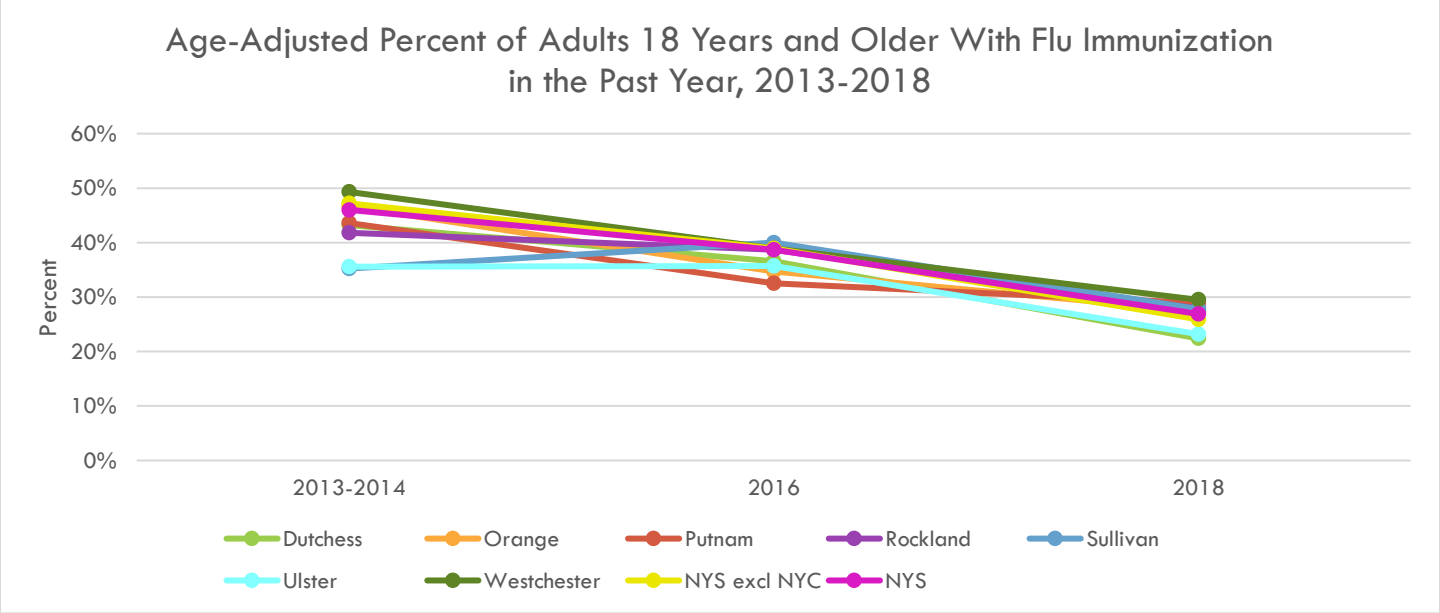
Source: NYS Prevention Agenda Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fdashboard%2Fpa_dashboard&p=it&ind_id=pa41_0

FLU IMMUNIZATION

Influenza (flu) is a contagious respiratory virus that can cause mild to severe illness. Severe illness from flu can result in hospitalization or even death. Certain populations are at a higher risk of complications from the flu virus, such as older people, young children, and people with certain health conditions. An annual flu vaccine is the best way to help protect against flu. Vaccination has been shown to reduce the risk of flu, hospitalizations, and risk of flu-related death in children.[187]

ACIP recommends that everyone six months of age and older receive a flu vaccine every flu season.[188] Healthy People 2030 set a target to increase the percentage of noninstitutionalized adults aged 18 years and older who are vaccinated annually against seasonal influenza to 70%.[189] In 2018, 26.9% of adults aged 18 years and older received a flu vaccine in NYS. Westchester County had the highest percentage of adults vaccinated (29.5%), while Dutchess County had the lowest coverage (22.4%). The percentage of adults aged 18 years and older who received a flu vaccine has decreased since 2013 in all seven counties, as well as NYS excluding NYC and NYS [see Figure 250].

Figure 250



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	43.2%	46.7%	43.6%	41.8%	35.2%	35.6%	49.3%	47.2%	46.0%
2016	36.6%	34.7%	32.5%	38.7%	40.0%	35.7%	38.9%	38.9%	38.7%
2018	22.4%	27.4%	28.9%	27.9%	27.8%	23.2%	29.5%	25.9%	26.9%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

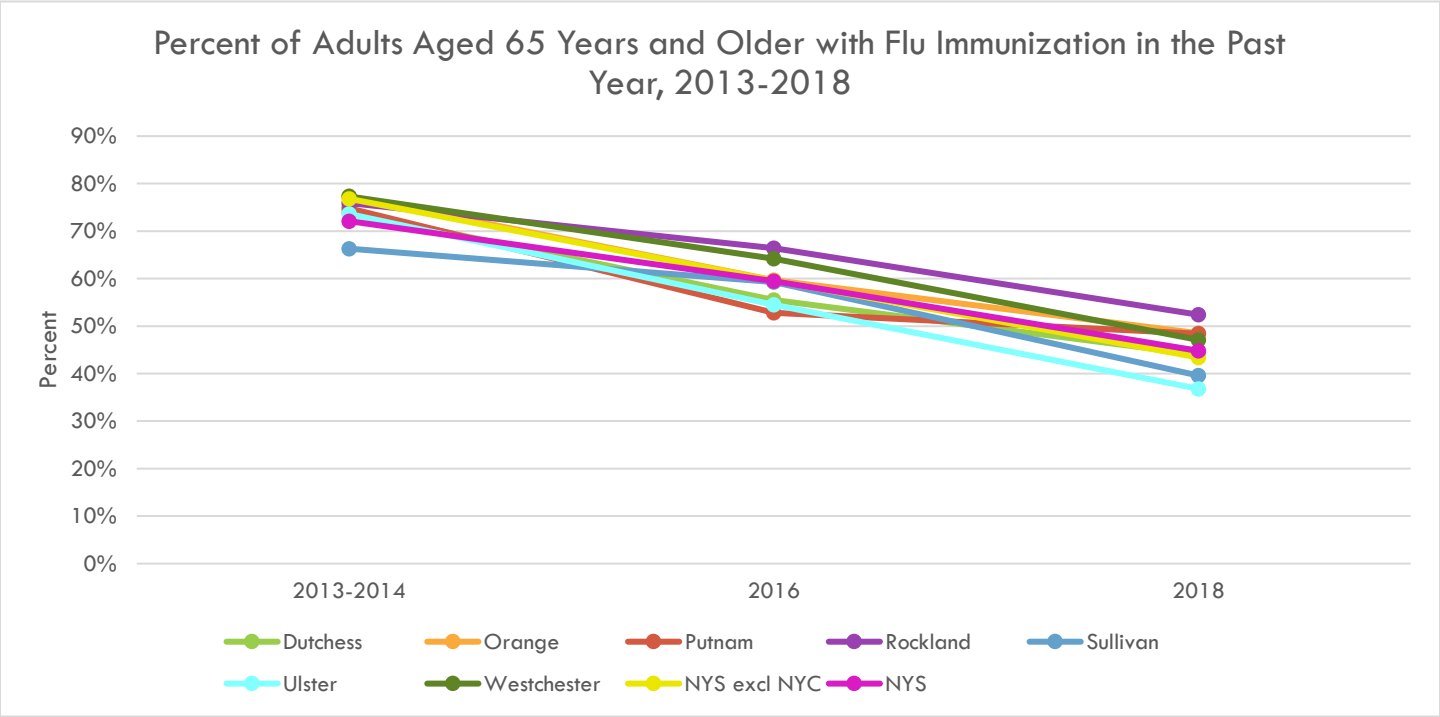
[187] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/flu/prevent/keyfacts.htm?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fflu%2Fprotect%2Fkeyfacts.htm, accessed August 2022

[188] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/flu/prevent/keyfacts.htm?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fflu%2Fprotect%2Fkeyfacts.htm, accessed August 2022

[189] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/objectives-and-data/browse-objectives/vaccination/increase-proportion-people-who-get-flu-vaccine-every-year-iid-09, accessed August 2022

In NYS, 44.8% of those aged 65 years and older received a flu immunization in 2018 [see Figure 251]. Rockland County had the highest percentage of individuals aged 65 years and older who received a flu vaccine (52.4%), while Ulster County had the lowest flu vaccine coverage (36.8%). Since 2013, the percentage of adults aged 65 years and older who received a flu vaccine has decreased in all seven counties in the M-H Region, as well as NYS excluding NYC and NYS.

Figure 251



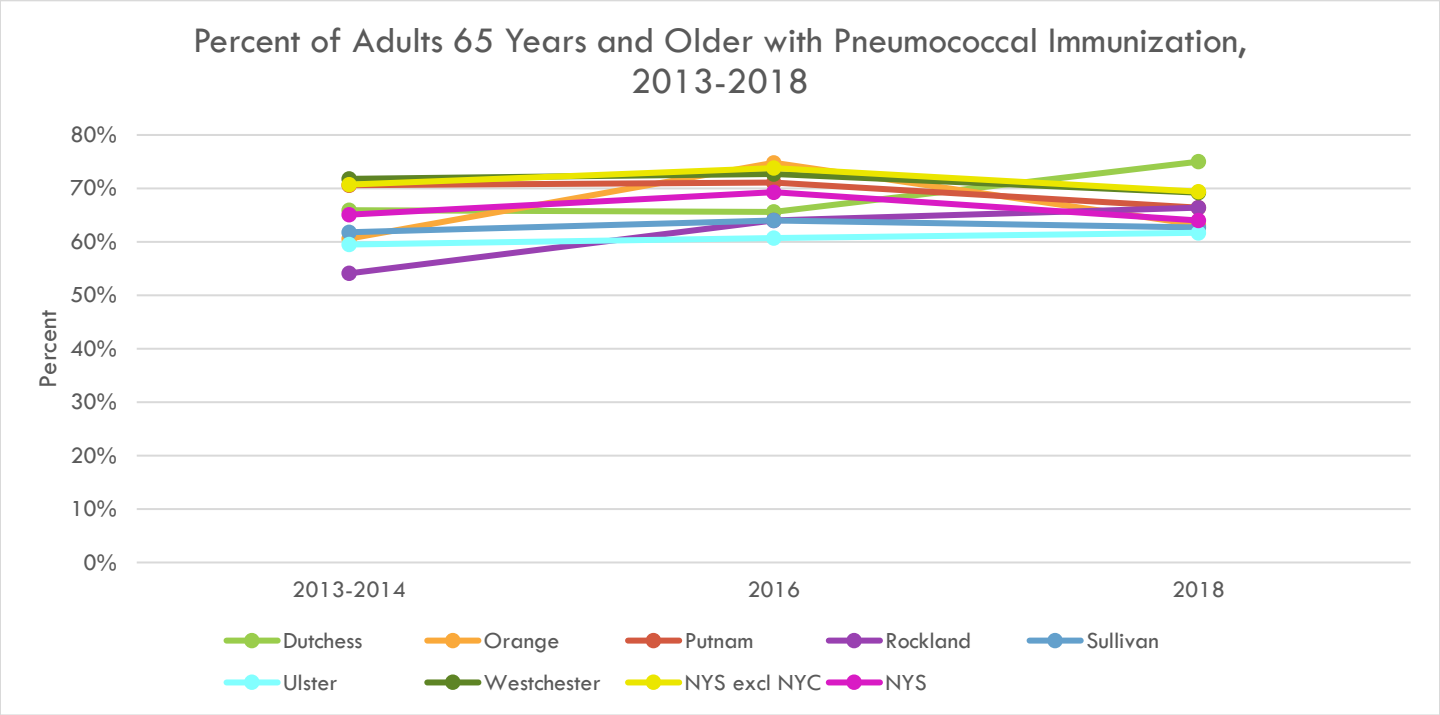
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	74.0%	77.3%	74.8%	75.9%*	66.3%*	73.6%	77.3%	76.8%	72.1%
2016	55.5%*	59.7%	52.8%*	66.4%*	59.3%*	54.5%	64.2%	59.6%	59.5%
2018	44.0%*	48.5%*	48.4%*	52.4%*	39.6%*	36.8%*	47.1%	43.4%	44.8%

*: *Unreliable crude rate due to large standard error.*
Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

PNEUMONIA IMMUNIZATION

Pneumococcal disease is caused by a type of bacteria that can lead to pneumonia, meningitis, and bacteremia. Pneumococcal bacteria are spread through droplets in the air from someone who coughs or sneezes. While pneumococcal disease is more common in children, it is more likely to cause serious complications in adults.[190] Healthy choices, such as giving up smoking and managing chronic illnesses, can also help prevent pneumonia. The CDC recommends two pneumococcal vaccines for adults aged 65 years and older. Healthy People 2020 aimed to increase the percentage of noninstitutionalized adults aged 65 years and older who are vaccinated against pneumococcal disease to 90.0%. NYS did not reach this goal, nor did the counties in the M-H Region. Dutchess County had the highest percentage (75.0%), while Ulster County had the lowest coverage (61.7%). From 2013 to 2018, Dutchess and Rockland Counties saw significant increases in the percent of adults aged 65 years and older who received the pneumococcal vaccine (65.9% in 2013 vs 75.0% in 2018 and 54.1% in 2013 vs 66.4% in 2018, respectively), while all other counties, as well as NYS excluding NYC and NYS, remained stable [see Figure 252].

Figure 252



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	65.9%	60.6%*	70.6%	54.1%*	61.8%*	59.5%	71.8%	70.7%	65.1%
2016	65.6%*	74.8%	71.1%	64.0%*	64.0%*	60.7%	72.7%	73.8%	69.3%
2018	75.0%	63.2%*	66.4%*	66.4%*	62.7%*	61.7%*	69.2%	69.4%	64.0%

*: *Unreliable crude rate due to large standard error.*
Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

[190] US Department of Health and Human Services, 2022, https://www.hhs.gov/immunization/diseases/pneumonia/index.html, accessed August 2022

SEXUALLY TRANSMITTED INFECTIONS

HIV/AIDS

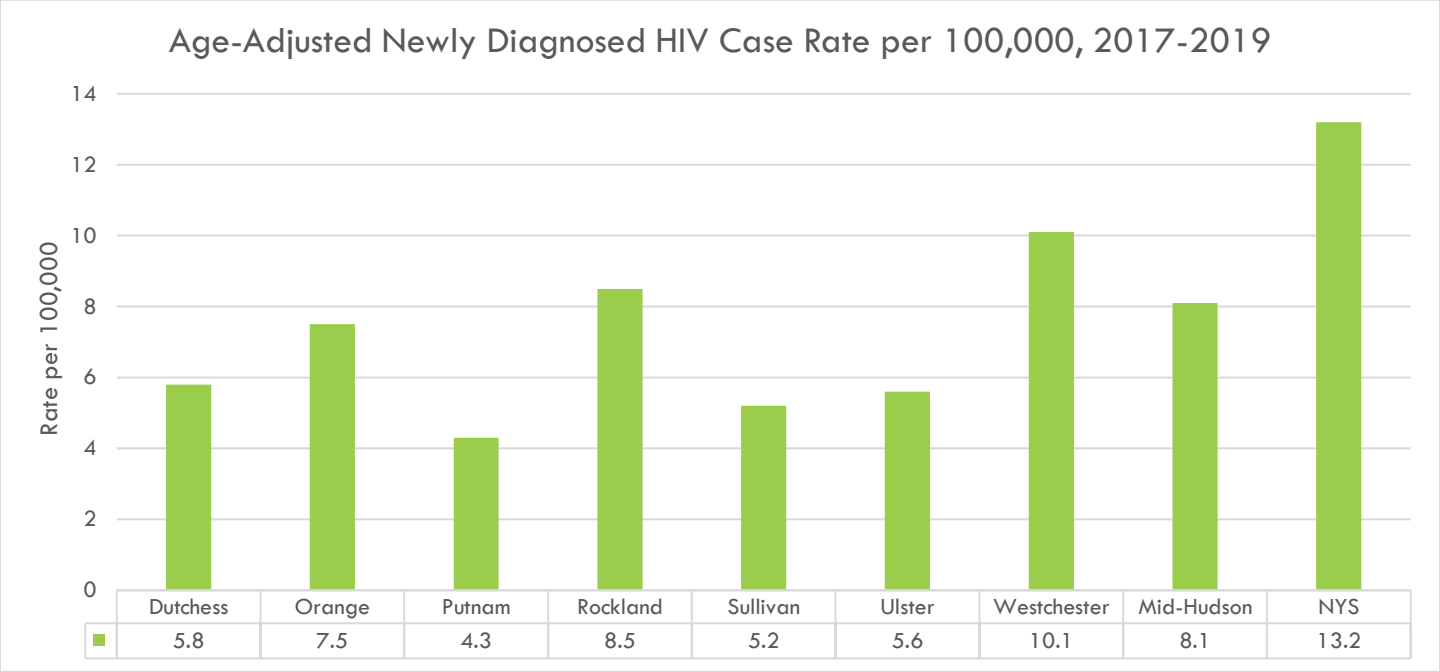
HIV is a virus that attacks the body's immune system and is spread through contact with blood, breast milk, vaginal and rectal secretions, and semen. At the end of 2019, the CDC estimated that approximately 1.2 million people aged 13 years and older in the US had HIV; about 13% of the individuals infected with HIV were not diagnosed. HIV is primarily transmitted through bodily fluid transmission, with the highest proportion of cases in 2019 transmitted through male-to-male sexual contact (65.6%) and heterosexual contact (23.5%). HIV can also be transmitted through injected drug use and this risk factor was present in approximately 10% of new HIV diagnoses. There are gender, age, race, and ethnicity disparities in new HIV diagnoses. In 2019, HIV incidence was five times higher in males than females, high in Blacks and Hispanics, and highest in persons aged 25-34 years.[191] While there is no effective cure for HIV, it can be controlled, and acquired immunodeficiency syndrome (AIDS), the final stage of HIV, can be prevented if people know they are infected and receive treatment. The CDC encourages everyone aged 13-64 years to be tested at least once as part of routine healthcare and for those with higher risk to be tested more often.

HIV/AIDS infections remain a significant public health issue in NYS and the US; HIV is preventable. Those who are confirmed positive after testing for HIV can make behavioral changes to decrease the risk of transmitting it to their sexual or drug-using partner. Healthy People 2030 aims to reduce the number of new HIV diagnoses in the US by 90% through continuing national education programs, policies, regulations, and laws.[192] NYS is currently fifth in the top 10 states with the highest rate of new HIV diagnoses in adolescents. From 2017 to 2019, Westchester (10.1 per 100,000), Rockland (8.5 per 100,000), and Orange (7.5 per 100,000) had the highest age-adjusted rate of newly diagnosed HIV infections, while Putnam had the lowest (4.3 per 100,000). The M-H Region's age-adjusted rate (8.1 per 100,000) was lower than the rate for NYS, which was 13.2 per 100,000 [see Figure 253].

[191] Centers for Disease Control and Prevention, Estimated HIV Incidence and Prevalence in the United States, https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-supplemental-report-vol-26-1.pdf, accessed May 2022

[192] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/objectives-and-data/browse-objectives/sexually-transmitted-infections/reduce-number-new-hiv-infections-hiv-01, accessed April 2022

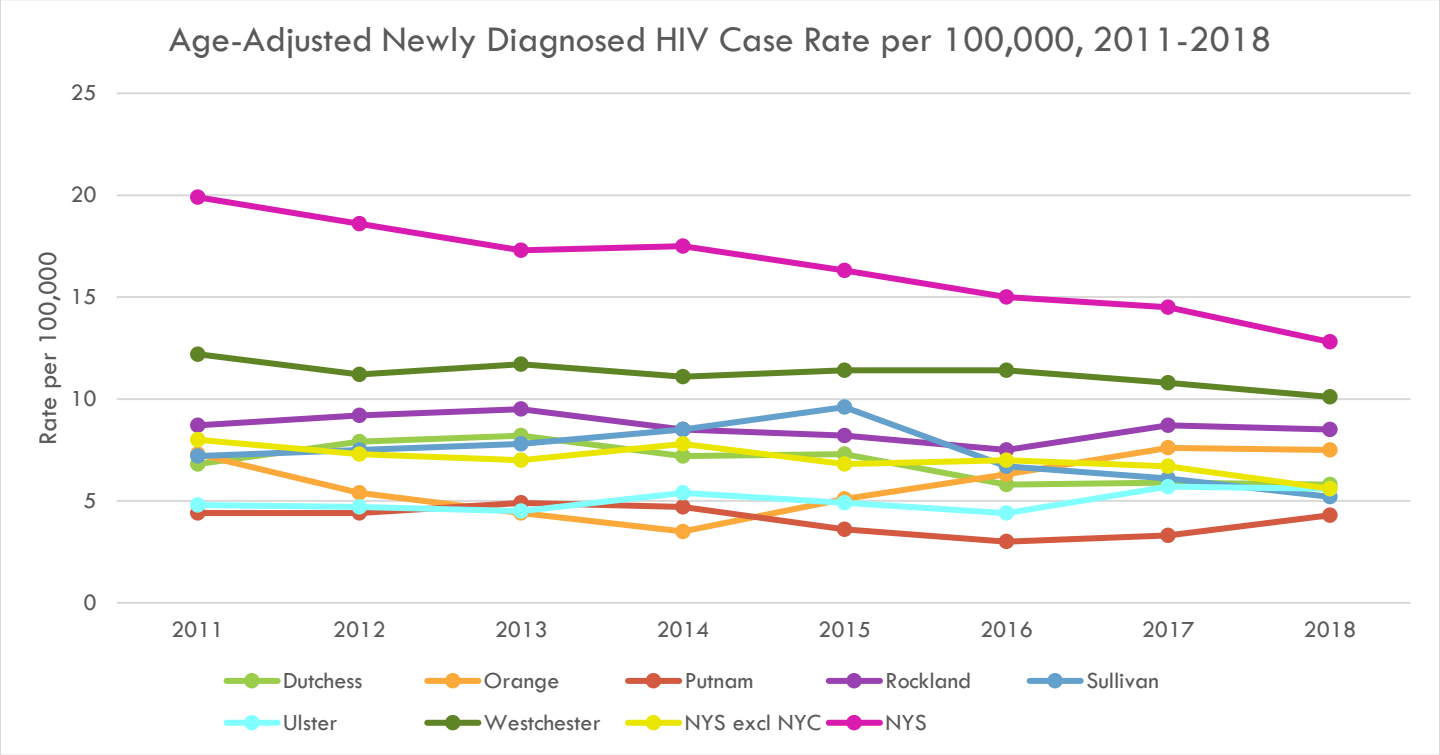
Figure 253



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg43a

HIV incidence rates have decreased from 2011 to 2018 in NYS and NYS excluding NYC. Though lower than the state, the overall trend in the M-H Region counties is generally flat with year-to-year fluctuations [see Figure 254].

Figure 254



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	6.8	7.3	4.4	8.7	7.2	4.8	12.2	8.0	19.9
2012	7.9	5.4	4.4	9.2	7.5	4.7	11.2	7.3	18.6
2013	8.2	4.4	4.9	9.5	7.8	4.5	11.7	7.0	17.3
2014	7.2	3.5	4.7	8.5	8.5	5.4	11.1	7.8	17.5
2015	7.3	5.1	3.6*	8.2	9.6	4.9	114	6.8	16.3
2016	5.8	6.3	3.0*	7.5	6.7	4.4	11.4	7.0	15.0
2017	5.9	7.6	3.3*	8.7	6.1	5.7	10.8	6.7	14.5
2018	5.8	7.5	4.3	8.5	5.2	5.6	10.1	5.6	12.8

**: Fewer than 10 events in the numerator, therefore the rate/percentage is unstable*
Note: Three-year averages are used for counties and single-year rates are used for NYS and NYS excluding NYC.
Source: NYSDOH Community Health Indicators Reports (CHIRS), 2020
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg43a

GONORRHEA

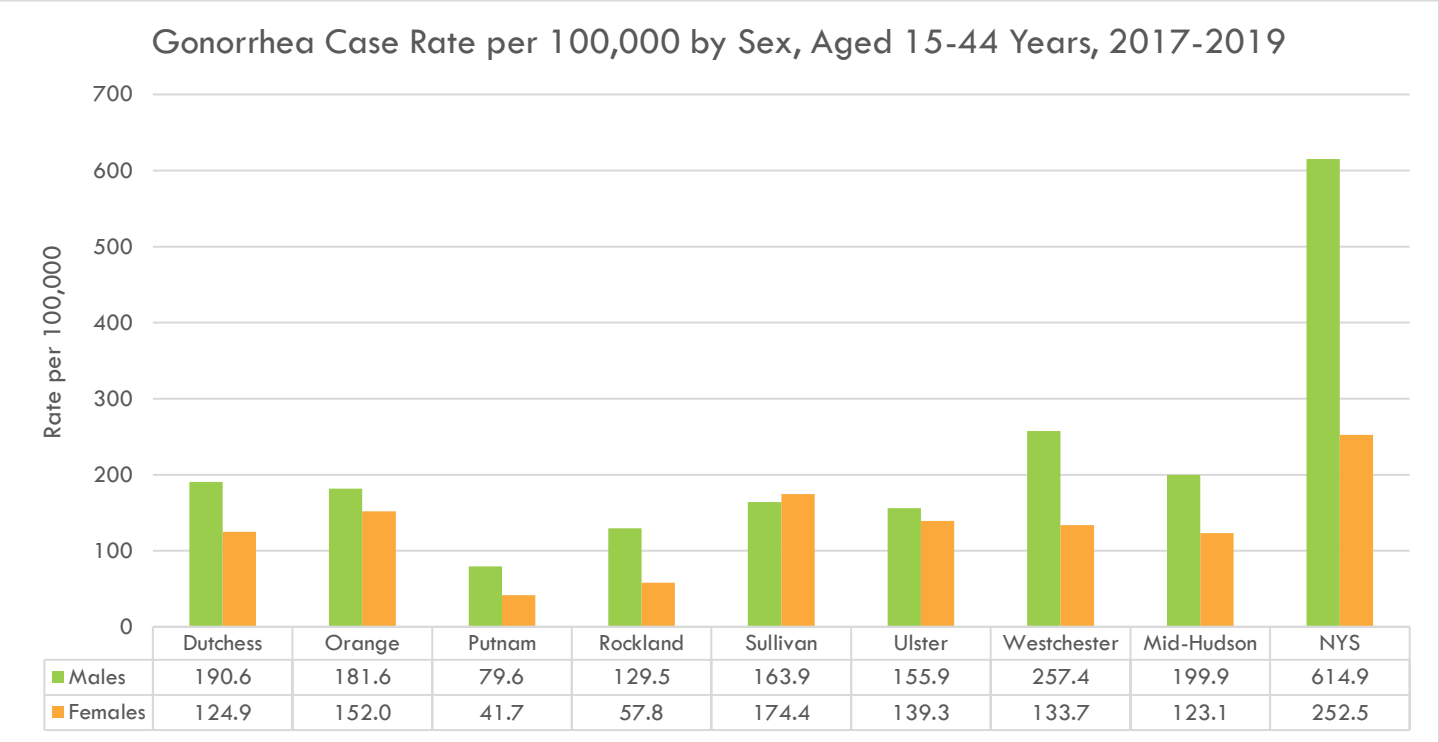
Gonorrhea is a sexually transmitted infection that can affect individuals of all genders. Infection in the genitals, urethra, rectum, and throat occurs through contact with the bacterium Neisseria gonorrhoeae during vaginal, anal, or oral sexual activity with an infected partner. Pregnant persons can also pass a gonorrhea infection to babies during childbirth. Gonorrhea is most common among young people aged 15-24 years.[193] The NYSPA

[193] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/std/ff/stdfact-gonorrhea.htm, accessed October 2022

aims to decrease the annual growth rate of new gonorrhea diagnoses by 50% to 4% through promoting regulations, education, and testing for females younger than 25 years of age and those with risk factors such as multiple partners or a sexual partner that has a sexually transmitted infection.[193,194] These practices aim to provide access to affordable, culturally sensitive, and convenient STI testing and treatment services.

Figure 255 shows the incidence rate of gonorrhea from 2017 to 2019 by sex in persons aged 15-44 years. Incidence was consistently higher in males than females in all counties other than Sullivan. The highest rate was seen in males in Westchester County (257.4 per 100,00). Sullivan, Orange, and Ulster Counties have the highest rates of gonorrhea infections in females (174.4, 152.0, and 139.3 per 100,000, respectively), while Putnam County case rates were the lowest for both sexes. NYS surpassed all counties in the M-H Region for both male and female infections.

Figure 255



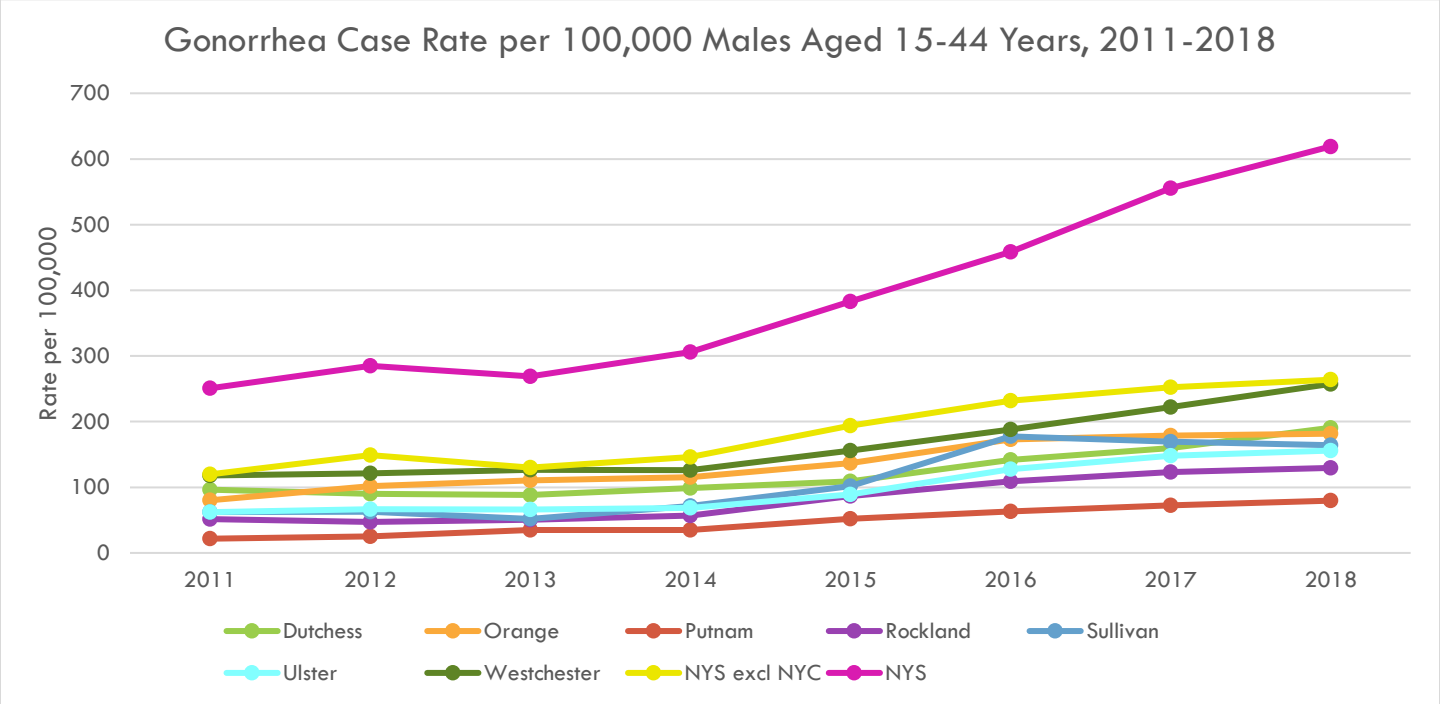
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
Males	190.6	181.6	79.6	129.5	163.9	155.9	257.4	199.9	614.9
Females	124.9	152.0	41.7	57.8	174.4	139.3	133.7	123.1	252.5

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg46
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg122

[194] New York State Department of Health, 2021, https://health.ny.gov/prevention/prevention_agenda/2019-2024/comm.htm, accessed October 2022

Figure 256 shows the gonorrhea case rate in males of the same age range increasing from 2011 to 2018. Among the counties, the highest rate was consistently seen in Westchester County and the lowest in Putnam County.

Figure 256

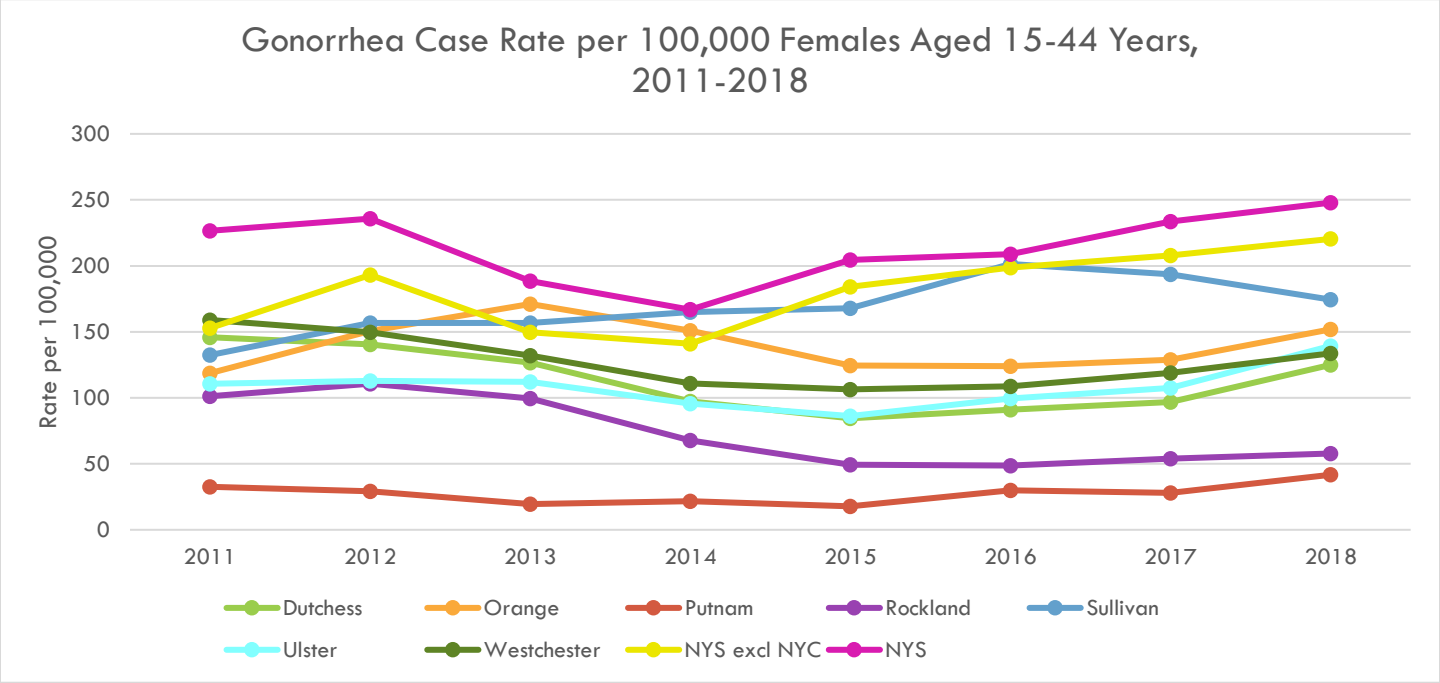


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	96.4	80.2	21.7	51.4	62.4	62.1	118.0	119.7	250.7
2012	89.8	101.6	25.4	47.2	62.9	66.5	121.1	148.9	284.9
2013	88.3	110.6	34.7	50.5	51.8	66.2	126.5	130.0	268.9
2014	98.8	115.2	35.0	57.0	71.7	68.8	126.3	146.2	305.9
2015	108.9	136.6	51.8	86.5	101.6	89.0	155.7	193.8	382.9
2016	141.5	172.9	63.1	109.1	177.5	127.5	187.9	231.6	458.3
2017	159.8	178.6	72.4	123.2	169.4	147.9	221.9	252.2	555.4
2018	190.6	181.6	79.6	129.5	163.9	155.9	257.4	263.8	619.0

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC are used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg46

Figure 257 shows year-to-year fluctuation in gonorrhea in females of the same age range in the same period for most counties, with a more consistent upward trend in the state over the last five years of the period.

Figure 257

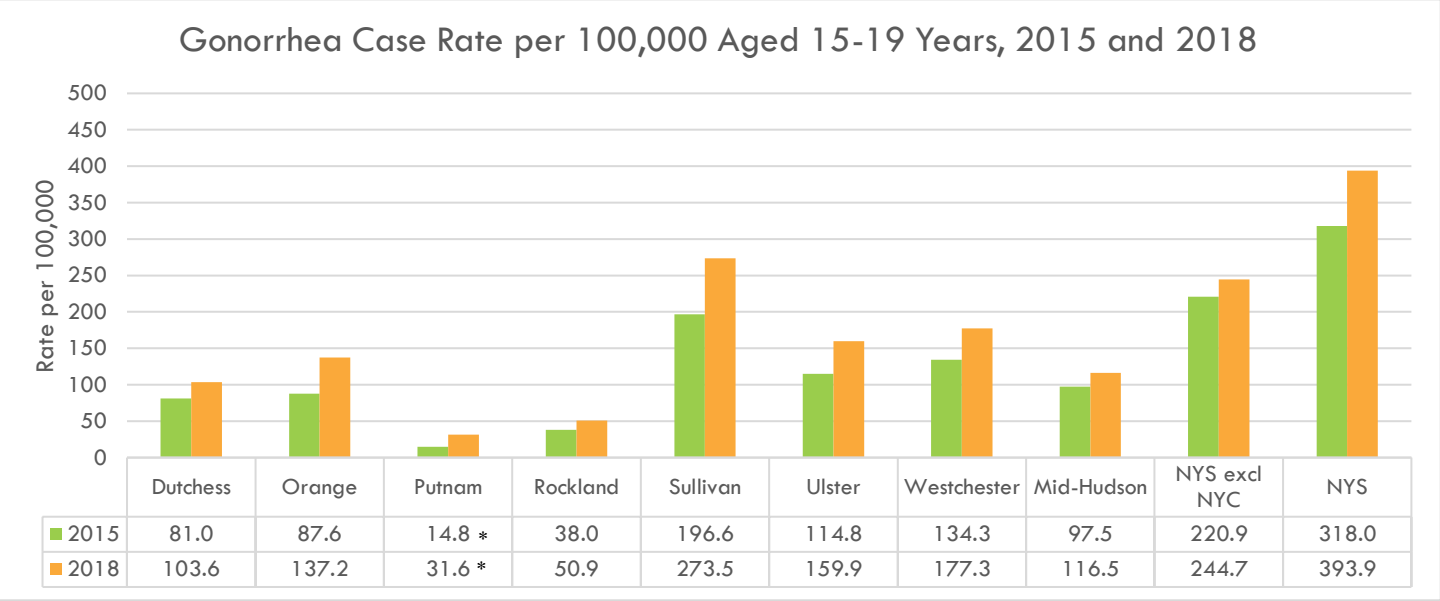


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	145.9	118.7	32.7	101.2	132.4	110.6	159.0	152.8	226.5
2012	140.6	150.6	29.1	110.7	156.8	112.9	149.7	193.0	235.7
2013	126.7	171.1	19.6	99.5	156.8	112.2	132.0	149.6	188.6
2014	97.4	150.9	21.6	67.7	165.0	95.7	111.0	141.0	166.8
2015	84.5	124.5	17.8*	49.3	168.0	86.2	106.4	184.1	204.6
2016	91.1	124.0	29.8	48.7	201.4	99.5	108.8	198.8	208.9
2017	96.8	128.8	27.9	53.9	193.5	107.4	118.8	207.9	233.5
2018	124.9	152.0	41.7	57.8	174.4	139.3	133.7	220.4	247.9

**: Fewer than ten events in the numerator; therefore, the rate is unstable.*
Note: Three-year averages are used for counties and single-year estimates are used for NYS and NYS excluding NYC.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg122

Figure 258 shows a significant increase from 2015 to 2018 in gonorrhea for persons aged 15-19 years for all M-H Region counties and NYS. Putnam and Orange Counties saw the highest proportional increase between the two periods. The highest rates in both periods were seen in Sullivan County, exceeding the M-H Region and NYS excluding NYC rates.

Figure 258

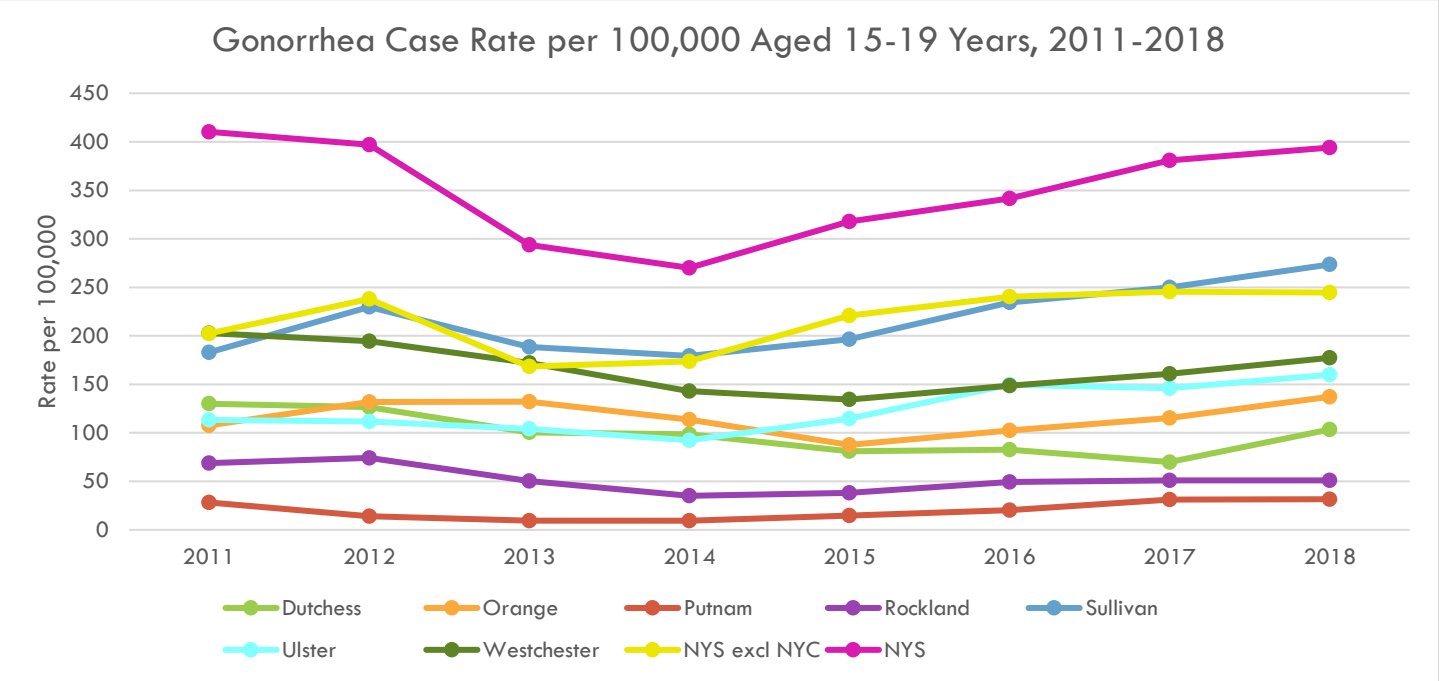


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
2015	81.0	87.6	14.8 *	38.0	196.6	114.8	134.3	97.5	220.9	318.0
2018	103.6	137.2	31.6 *	50.9	273.5	159.9	177.3	116.5	244.7	393.9

**: Fewer than ten events in the numerator, therefore the rate/percentage is unstable.*
Note: Three-year averages are used for counties and single-year rates are used for Mid-Hudson, NYS, and NYS excluding NYC.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg47

When examining trends for this age range over eight years [see Figure 259], rates have been highest in Westchester and Sullivan Counties and lowest in Putnam County, although the rates in Putnam County are unstable.

Figure 259

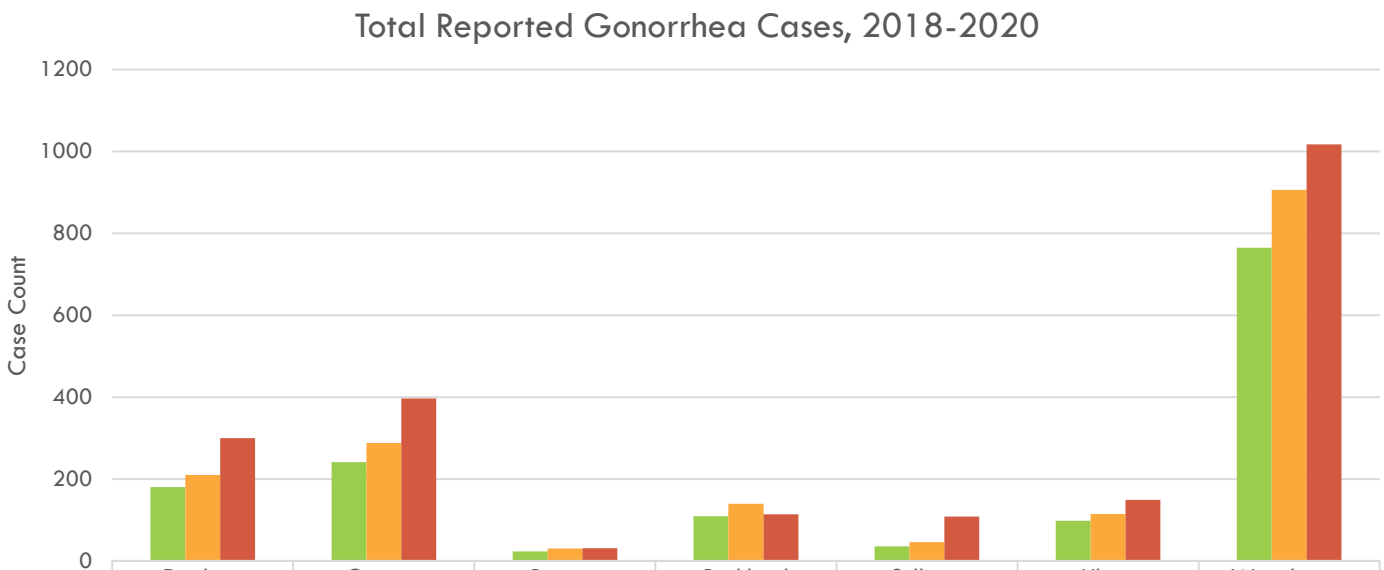


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	130.0	107.8	28.4*	68.8	182.9	113.5	202.8	202.3	410.3
2012	1426.5	131.8	14.1*	74.2	229.9	111.8	194.6	238.0	397.0
2013	100.5	132.2	9.5*	50.5	188.7	104.1	171.9	168.4	293.6
2014	98.4	113.6	9.6*	35.1	179.3	92.3	143.1	173.7	270.1
2015	81.0	87.6	14.8*	38.0	196.6	114.8	134.3	220.9	318.0
2016	82.5	102.6	20.2*	49.4	234.4	149.5	148.7	240.4	341.6
2017	69.9	115.3	31.1*	50.9	250.0	146.0	161.0	245.5	380.9
2018	103.6	137.2	31.6*	50.9	273.5	159.9	177.3	244.7	393.9

**: Fewer than ten events in the numerator; therefore, the rate is unstable.*
Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC are used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg47

In Figure 260, the total number of reported cases of gonorrhea for the years 2018-2020 increased in all counties, except for Rockland from 2019 to 2020. The highest proportional increases in cases were seen from 2019 to 2020 in Orange (40% increase), Dutchess (44% increase), and Sullivan (137% increase). Orange, Dutchess, Westchester, and Sullivan Counties (from most significant addition to least) all saw an increase in reported gonorrhea cases for all three years, while Putnam County showed the lowest growth.

Figure 260



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
2018	180	241	23	109	36	98	765
2019	210	288	30	140	46	115	906
2020	300	397	31	114	108	149	1017

Source: Office of Sexual Health and Epidemiology, 2017-2019
https://www.health.ny.gov/statistics/diseases/communicable/std/index.htm

CHLAMYDIA

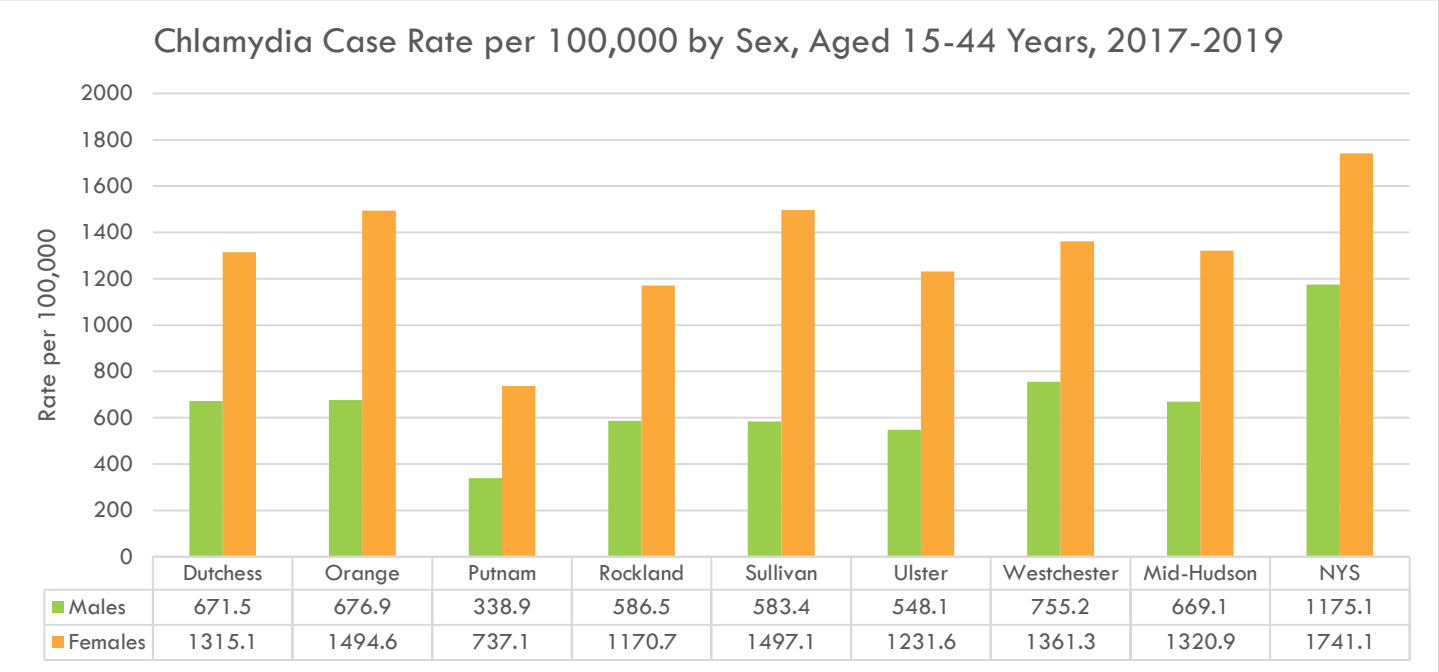
Chlamydia is a common STI that can infect people of all genders. Chlamydia is spread with an infected partner via vaginal, anal, or oral sexual activity. If someone has been treated for chlamydia in the past, they could still become infected again through unprotected sex with the same individual or another person who has chlamydia. Pregnant persons can also pass chlamydia to their babies during childbirth.[195] Chlamydia is the most frequently reported bacterial infection in the US, with the highest prevalence among persons aged 24 years and younger. Like gonorrhea, if left untreated in females, chlamydia can also lead to serious sequelae such as pelvic inflammatory disease (PID), ectopic pregnancy, and infertility. Asymptomatic infection is common; the CDC and the NYSPA recommend screening annually in sexually active females aged 25 years and younger and females aged 25 years and older with increased risk for infection (if they have a new sex partner, multiple or concurrent sexual partners, or a partner(s) who has an STI).[196]

[195] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm, accessed May 2022

[196] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/std/treatment-guidelines/chlamydia.htm, accessed May 2022

From 2017 to 2019, chlamydia rates in persons aged 15-44 years were higher in females than males in all counties in the M-H Region and for the state. Screening recommendations in females likely account for the gender disparity. The rate of chlamydia per 100,000 females was highest in Sullivan (1497.1), Orange (1494.6), and Westchester Counties (1361.3) in comparison to the M-H Region rate (1320.9) of chlamydia for females. Putnam County had the lowest male and female rates [see Figure 261].

Figure 261

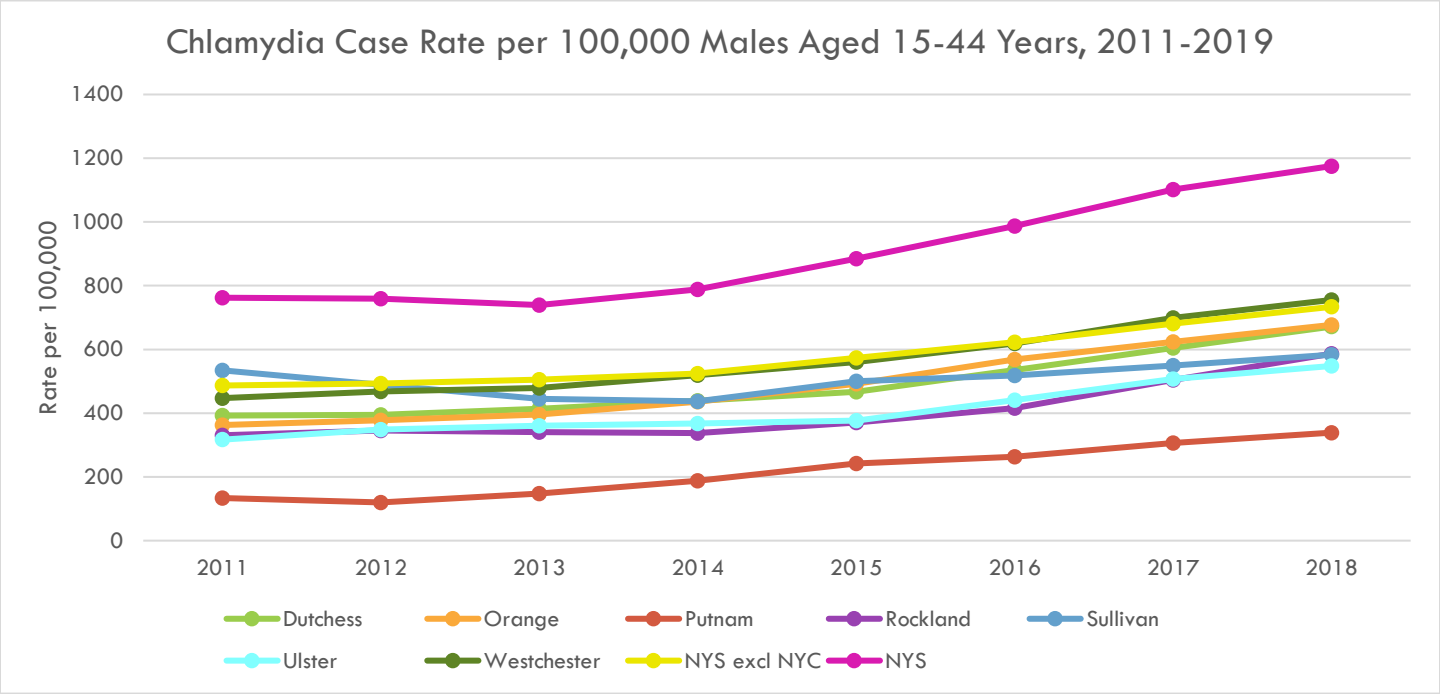


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
Males	671.5	676.9	338.9	586.5	583.4	548.1	755.2	669.1	1175.1
Females	1315.1	1494.6	737.1	1170.7	1497.1	1231.6	1361.3	1320.9	1741.1

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg48
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg51

Figure 262 shows the slight upward trend in the chlamydia case rate in males aged 15 to 44 years for all counties in the M-H Region from 2011 to 2018. Rates for all seven M-H Region counties clustered closely together and remained below the rates reported for NYS for all eight years. Amongst the counties, rates were consistently highest in Westchester County and lowest in Putnam County.

Figure 262

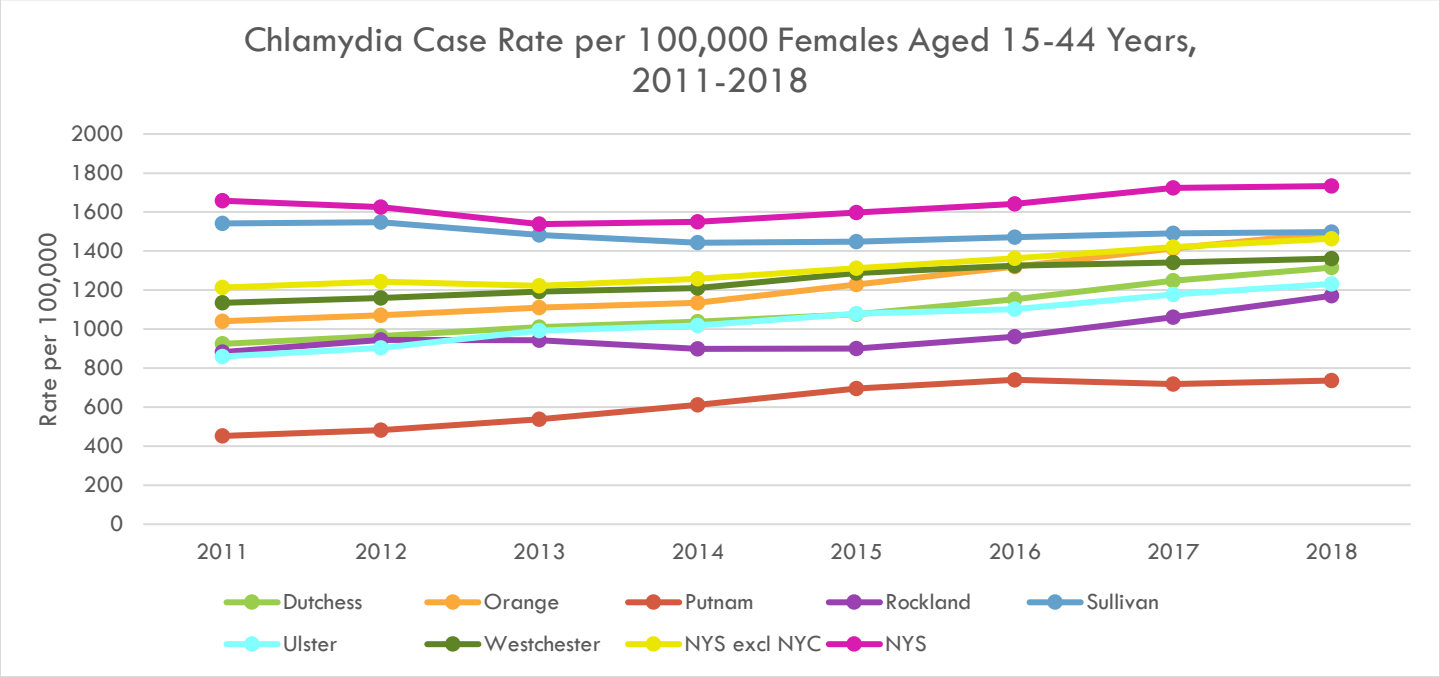


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	392.4	362.8	133.6	330.8	534.1	317.0	447.2	486.8	761.9
2012	394.4	377.7	119.9	345.2	489.2	348.7	468.0	493.5	759.1
2013	414.3	396.2	148.1	340.3	445.3	360.5	479.2	505.1	739.3
2014	439.0	435.7	187.6	337.4	437.3	367.2	519.5	524.4	788.7
2015	467.3	492.3	242.5	370.4	500.6	376.6	560.1	573.9	884.5
2016	535.2	568.3	263.7	415.7	517.8	440.7	618.7	622.4	987.0
2017	604.7	623.7	306.3	504.4	549.2	507.1	699.0	680.8	1101.7
2018	671.5	676.9	338.9	586.5	583.4	548.1	755.2	733.7	1175.4

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC are used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg48

Figure 263 shows the slight upward trend in the chlamydia case rates in females aged 15 to 44 years for all counties in the M-H Region except for Sullivan, whose rate remained flat from 2011 to 2018. With the exception of Sullivan County, rates in all seven counties were lower than that of NYS excluding NYC. The highest rates were seen in Westchester and Sullivan Counties and the lowest was in Putnam County.

Figure 263

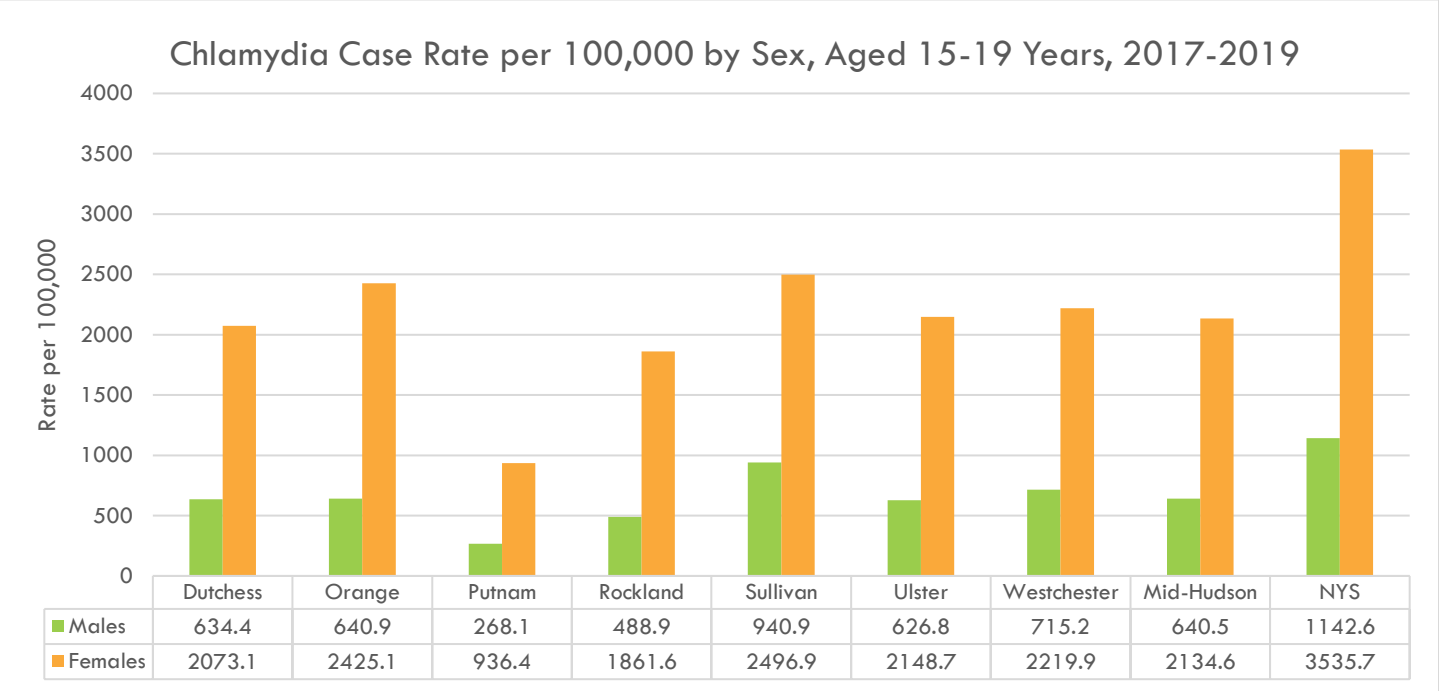


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	924.3	1040.5	452.3	882.1	1541.1	859.8	1134.6	1213.1	1658.8
2012	964.3	1070.8	481.6	945.2	1547.9	903.3	1159.5	1243.2	1625.4
2013	1010.8	1110.0	538.2	943.1	1483.1	992.6	1192.8	1222.1	1538.2
2014	1038.1	1135.4	611.7	898.6	1442.7	1017.8	1211.1	1257.4	1550.4
2015	1076.1	1227.7	695.1	900.7	1448.3	1079.4	1287.6	1312.3	1597.6
2016	1153.5	1319.6	740.2	960.6	1471.9	1102.5	1325.4	1362.6	1641.7
2017	1248.4	1414.2	719.1	1061.3	1491.4	1177.7	1341.8	1419.9	1723.7
2018	1315.1	1494.6	737.1	1170.7	1497.1	1231.6	1361.3	1463.5	1733.3

Note: Three-year average for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg51

Similar to those aged 15 to 44 years, chlamydia rates in persons aged 15 to 19 years from 2017 to 2019 were higher in females than males in all counties in the M-H Region and for NYS. Sullivan (2496.9 per 100,000) and Orange (2425.1 per 100,000) had the highest rates in females and Westchester (715.2 per 100,000) had the highest rates in males. Putnam and Rockland Counties had the lowest rates compared to the other M-H Region counties [see Figure 264].

Figure 264

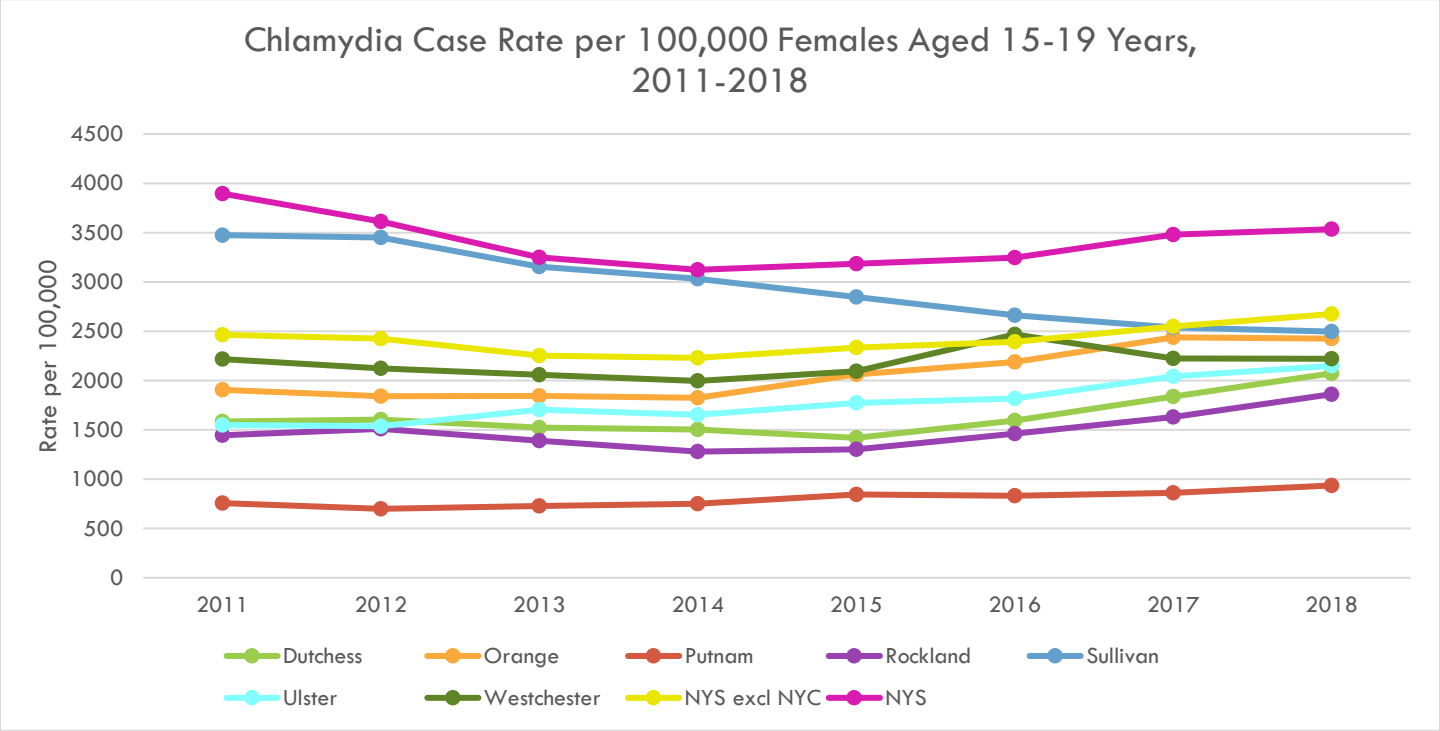


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
Males	634.4	640.9	268.1	488.9	940.9	626.8	715.2	640.5	1142.6
Females	2073.1	2425.1	936.4	1861.6	2496.9	2148.7	2219.9	2134.6	3535.7

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg49
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg52

Over the eight years from 2011 to 2018, the rates of chlamydia in females aged 15 to 19 years [see Figure 265] remained flat or increased slightly in most M-H Region counties and in NYS excluding NYC. A decreasing trend was seen in Sullivan County, while Putnam County had the lowest rates across the period.

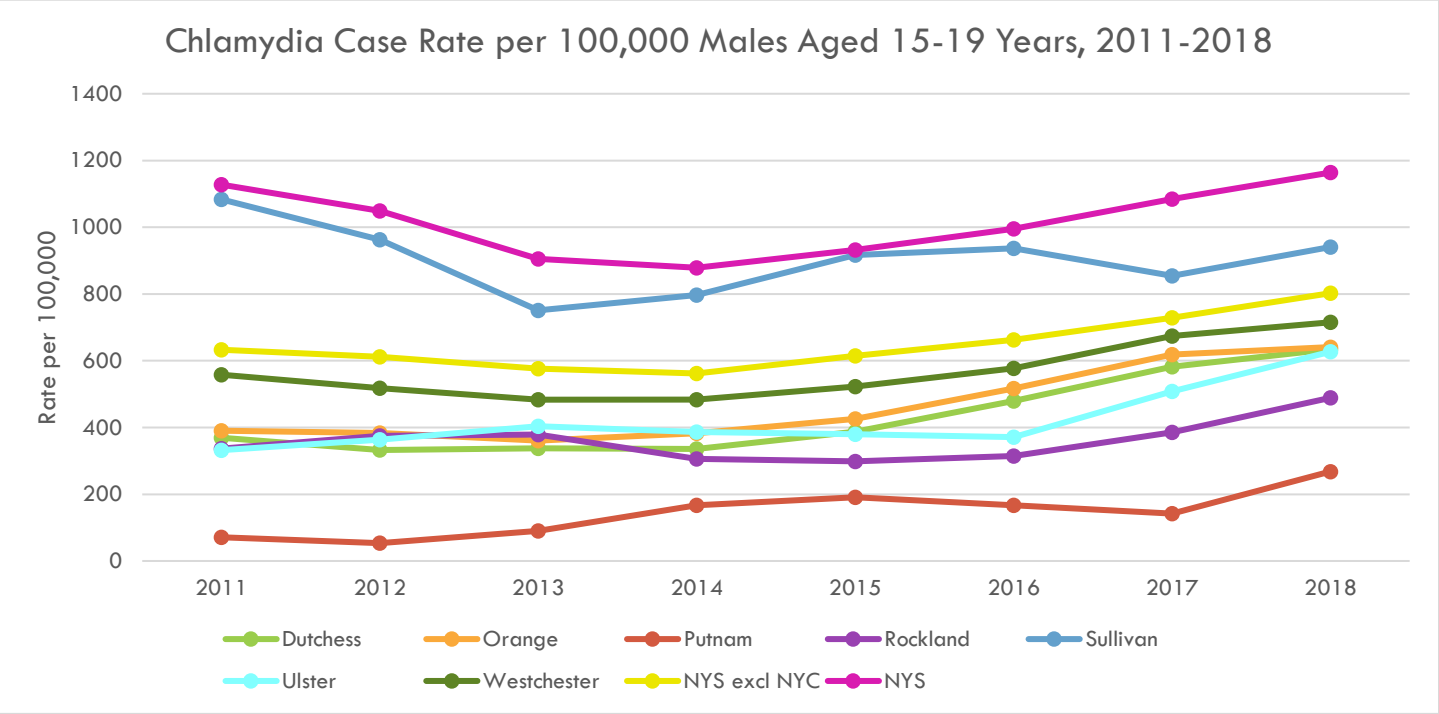
Figure 265



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	1585.2	1906.5	756.7	1446.9	3474.5	1549.6	2217.5	2462.9	3895.1
2012	1605.3	1841.7	699.9	1508.8	3449.2	1537.7	2124.8	2423.6	3613.2
2013	1524.5	1842.9	729.5	1389.7	3154.2	1705.1	2057.9	2254.8	3248.4
2014	1502.7	1825.2	752.8	1280.0	3032.6	1652.1	1996.1	2229.9	3122.8
2015	1419.3	2062.3	846.8	1303.6	2846.2	1773.7	2093.7	2334.7	3183.2
2016	1593.3	2188.7	833.0	1462.7	2661.9	1817.0	2468.1	2392.5	3246.5
2017	1837.1	2438.2	861.5	1629.0	2539.5	2041.5	2225.0	2546.8	3480.4
2018	2073.1	2425.1	936.4	1861.6	2496.9	2148.7	2219.9	2674.6	3533.4

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg52

Figure 266

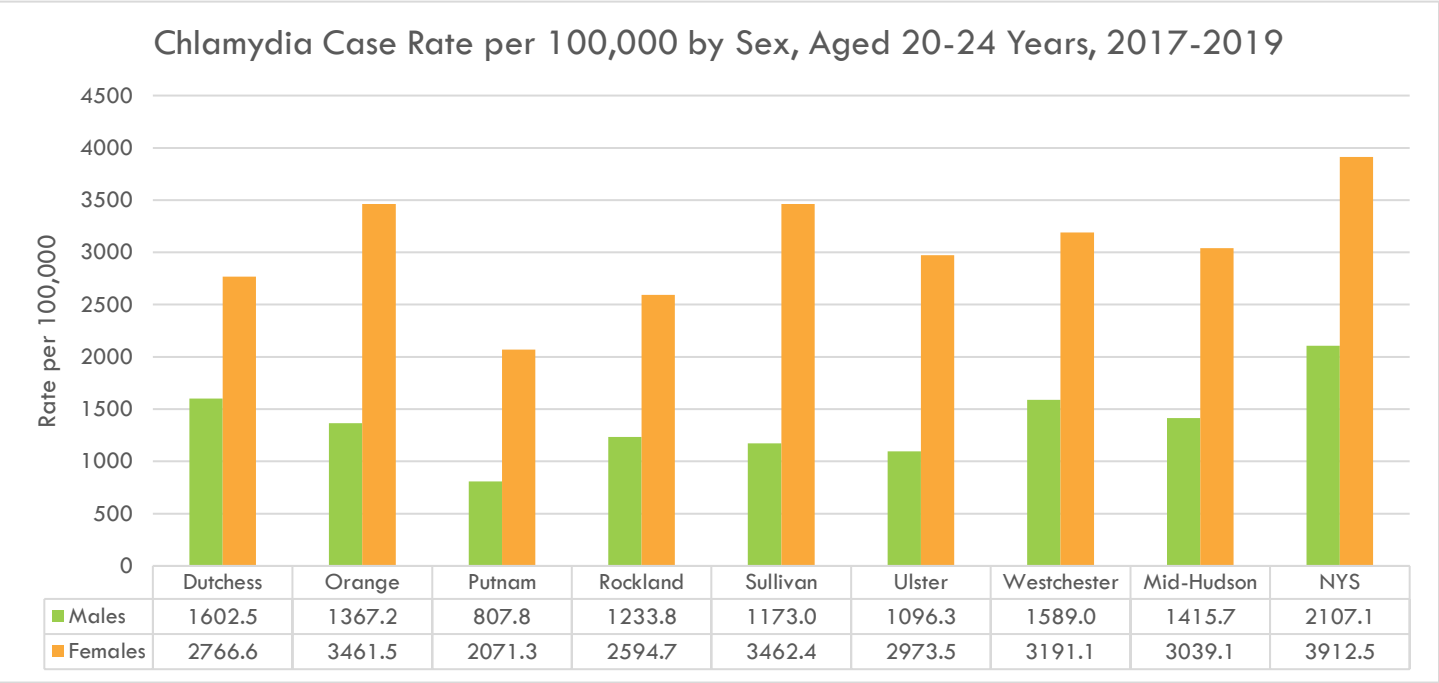


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	369.3	390.1	71.3*	336.5	1083.5	332.1	558.1	632.8	1127.6
2012	332.5	383.8	53.5*	375	962.7	363.9	518.2	611.4	1049
2013	337.8	360.7	90.4	379.2	751	403.5	483.7	576.4	905.5
2014	335.3	383.1	167.1	306.1	796.5	387	483.6	561.9	878.7
2015	387.8	425.8	190.7	298.6	916.9	380.2	522.9	615.2	931.7
2016	479.2	516.9	167.3	314.8	936.7	370.9	577.4	662.5	995.5
2017	582.5	618.8	141.6	385.9	854.1	508.7	674.3	729.1	1084.6
2018	634.4	640.9	268.1	488.9	940.7	626.8	715.2	802.4	1163.9

*: *Fewer than ten events in the numerator; therefore, the rate is unstable.*
Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg49

Similar to other age groups, chlamydia rates in persons aged 20 to 24 years from 2017 to 2019 were higher in females than males in all counties in the M-H Region and for the state as a whole. Just as in the age range 15 to 19 years, Sullivan (3462.4 per 100,000) and Orange (3461.5 per 100,000) Counties had the highest rates for females, surpassing the M-H Region rate (3039.1 per 100,000). Dutchess (1602.5 per 100,000) and Westchester (1415.7 per 100,000) had the highest rates for the male population [see Figure 267]. Compared to the rates in the male population aged 15 to 19 years, the chlamydia rate for males aged 20 to 24 years was higher in all counties.

Figure 267

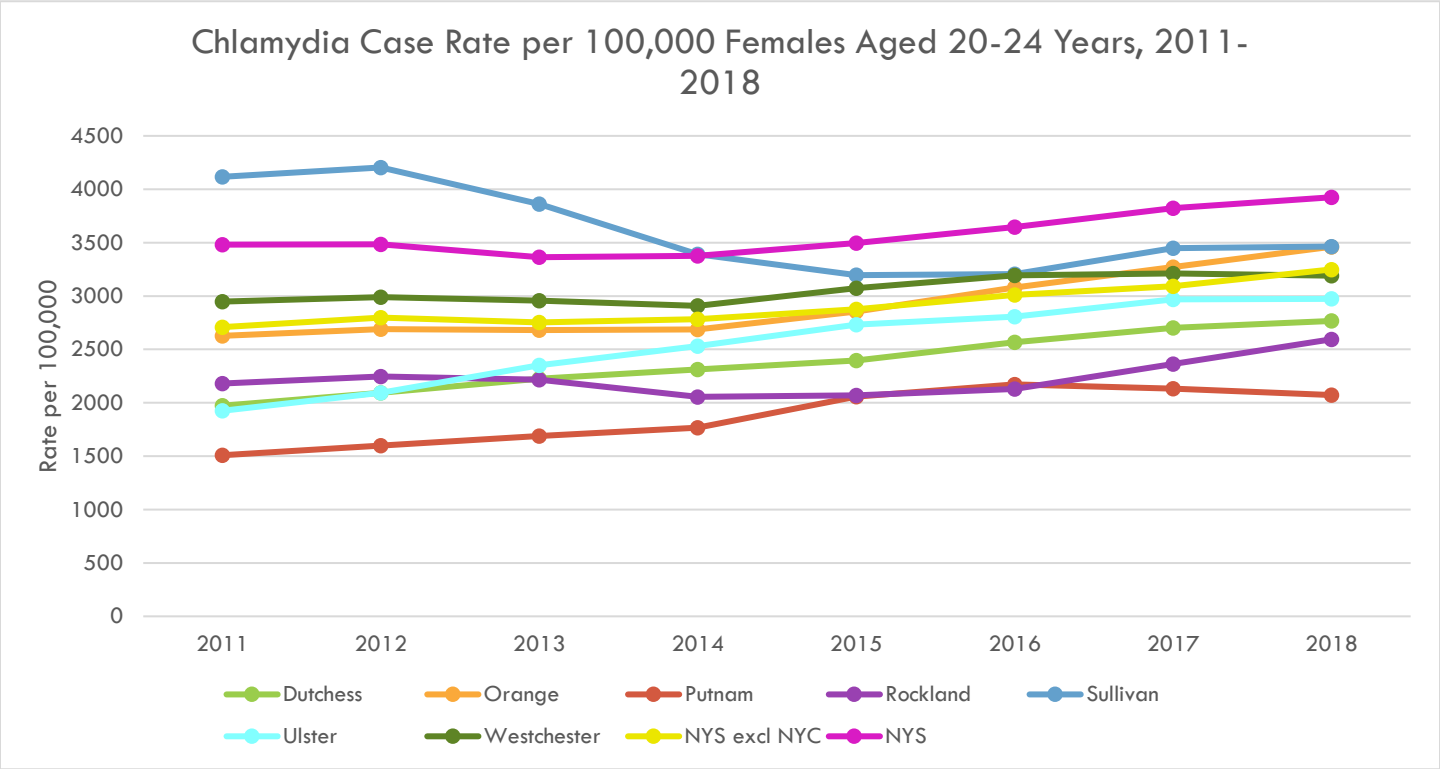


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
Males	1602.5	1367.2	807.8	1233.8	1173.0	1096.3	1589.0	1415.7	2107.1
Females	2766.6	3461.5	2071.3	2594.7	3462.4	2973.5	3191.1	3039.1	3912.5

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg50
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg53

Over the eight years from 2011 to 2018, there was an overall increasing trend in M-H Region counties and NYS excluding NYC for rates of chlamydia in females aged 20 to 24 years [see Figure 268].

Figure 268

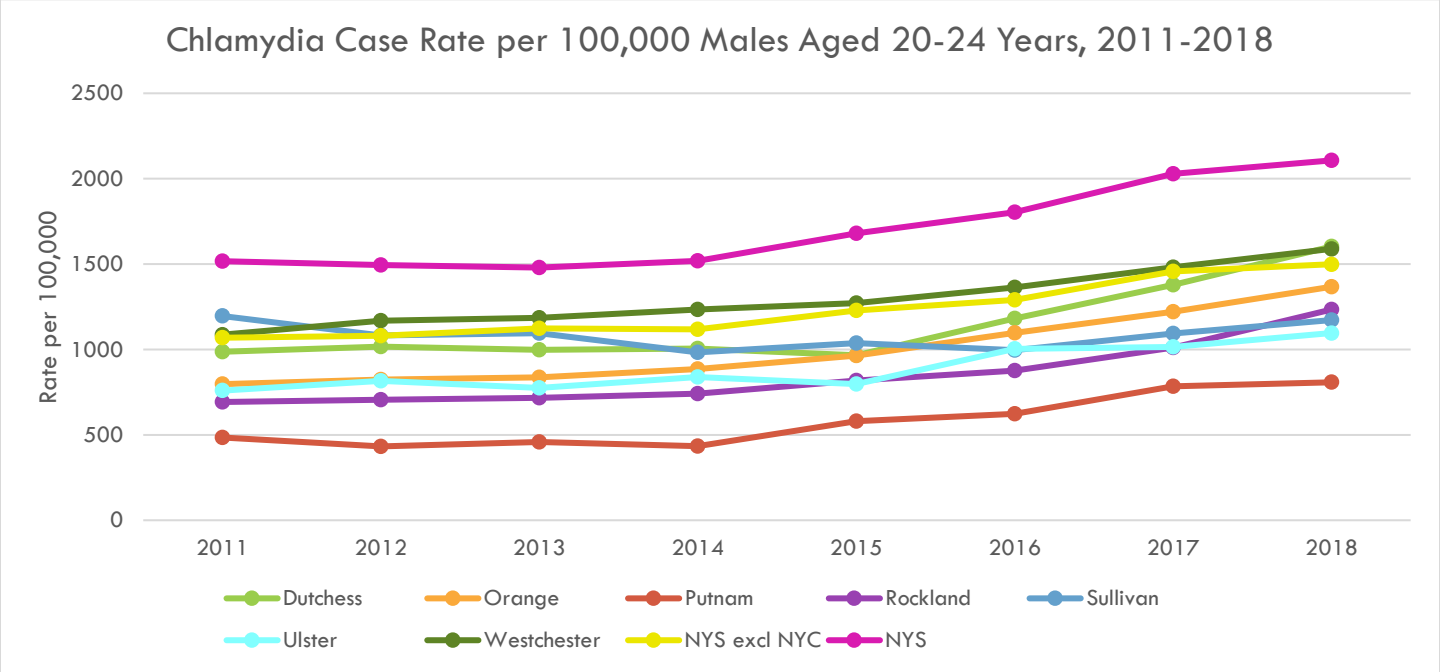


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	1972.7	2627.2	1509.0	2180.5	4117.9	1925.3	2946.8	2709.0	3482.2
2012	2093.1	2691.3	1600.4	2247.0	4204.3	2092.0	2989.8	2798.3	3483.0
2013	2224.7	2681.3	1689.7	2216.0	3861.4	2352.6	2956.6	2752.1	3363.8
2014	2311.9	2688.0	1766.3	2056.0	3391.1	2530.5	2907.9	2781.7	3376.2
2015	2396.6	2855.8	2058.6	2068.8	3195.6	2730.8	3073.9	2875.3	3495.1
2016	2567.1	3078.5	2172.4	2129.7	3205.3	2805.9	3194.6	3009.5	3646.5
2017	2702.6	3272.4	2133.8	2364.1	3449.4	2969.3	3211.7	3092.7	3822.7
2018	2766.6	3461.5	2071.5	2594.7	3462.4	2973.5	3191.1	3249.0	3925.0

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg53

Over the eight years from 2011 to 2018, there was an overall increasing trend in M-H Region counties and NYS excluding NYC for rates of chlamydia in males aged 20 to 24 years. Rates were highest in Westchester County and lowest in Putnam County [see Figure 269].

Figure 269

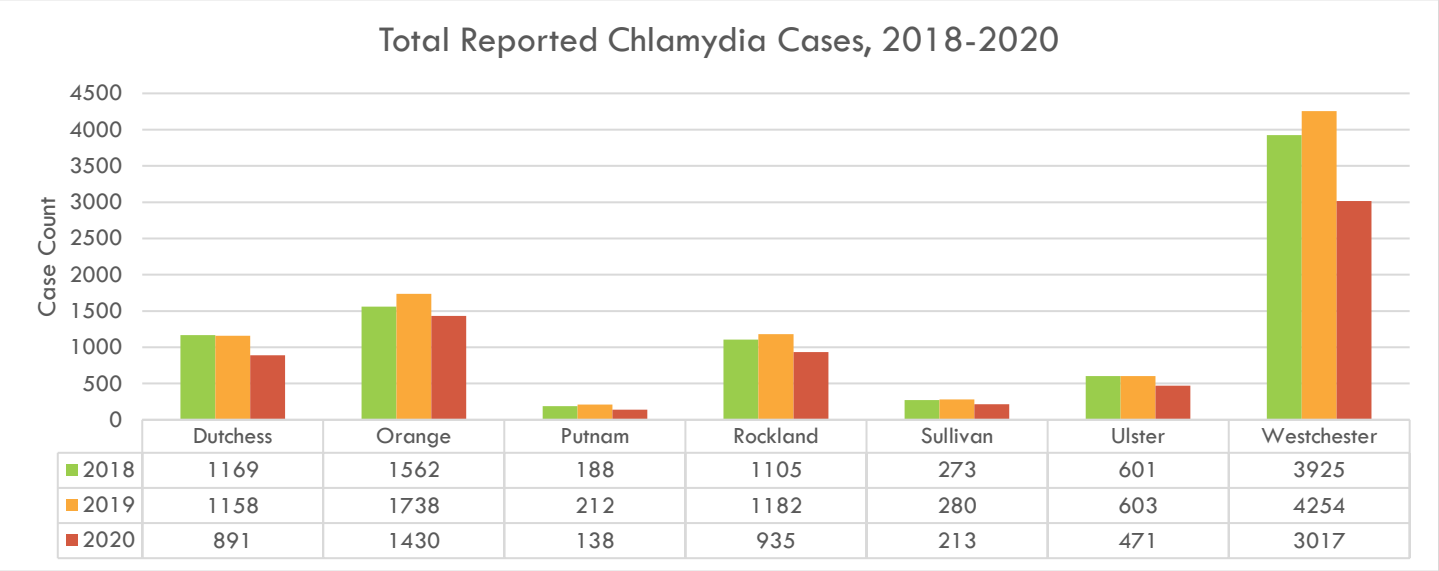


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	987.4	797.2	484.1	692.6	1195.8	759.2	1086.7	1068.9	1517.5
2012	1016.8	824.5	432.5	706.4	1082.7	816.0	1168.4	1080.5	1495.0
2013	997.8	836.8	458.1	717.7	1095.7	775.6	1184.4	1122.7	1479.7
2014	1006.0	885.0	433.6	740.8	983.1	838.9	1233.6	1117.1	1518.8
2015	966.3	963.9	579.2	818.5	1037.9	797.6	1272.3	1227.8	1680.3
2016	1181.3	1097.0	622.9	876.8	996.9	1002.9	1362.7	1290.1	1803.8
2017	1379.2	1221.4	784.6	1011.6	1094.2	1014.4	1480.7	1457.8	2028.2
2018	1602.5	1367.2	807.8	1233.8	1173.0	1096.3	1589.0	1499.1	2107.2

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg50

In Figure 270, the total number of reported cases of chlamydia increased slightly from 2018 to 2019 for all M-H Region counties except Dutchess. In contrast, case counts decreased in all counties between 2019 and 2020. Decreases are likely attributable to changes in risk and care-seeking behavior related to the COVID-19 pandemic.

Figure 270



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
2018	1169	1562	188	1105	273	601	3925
2019	1158	1738	212	1182	280	603	4254
2020	891	1430	138	935	213	471	3017

Source: Office of Sexual Health and Epidemiology, 2017-2019
https://www.health.ny.gov/statistics/diseases/communicable/std/index.htm

SYPHILIS

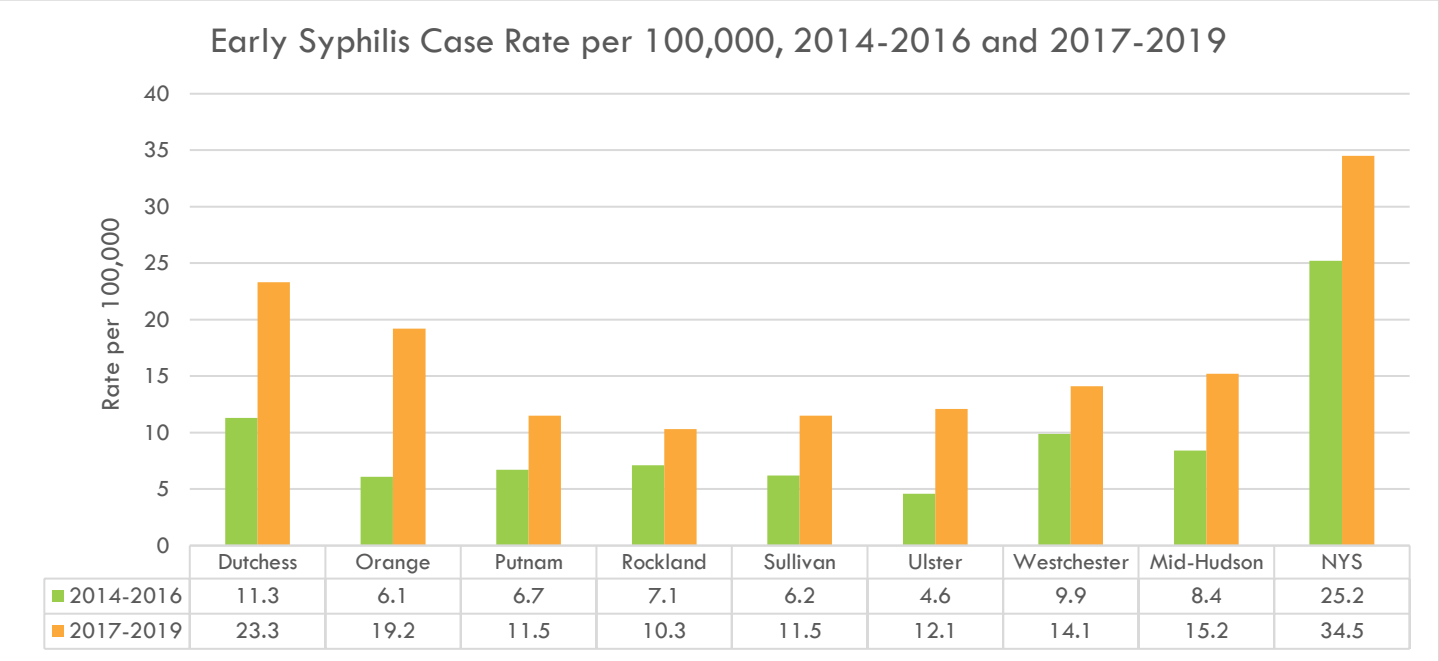
Syphilis is a curable STI that can lead to very serious complications when left untreated. Syphilis is divided into primary, secondary, latent, and tertiary stages. Primary syphilis presents as a sore(s) that may be located on or around the penis, vagina, anus, lips, mouth, or rectum. Any sexually active person can contract syphilis through direct contact with a syphilis sore during unprotected vaginal, anal, or oral sex. Since pregnant women infected with syphilis can also transmit the infection to their babies during childbirth, they should be tested for syphilis at least once during their pregnancy.[197]

For surveillance purposes, early syphilis is defined as the aggregate count of primary and secondary syphilis diagnoses with syphilis diagnosed within the first year of infection that had progressed beyond primary and secondary stages.[198] Compared to 2014-2016, in 2017-2019 early syphilis case rates increased for all M-H Region counties between 30% and 70%. The highest early syphilis case rates per 100,000 were seen in Dutchess (23.2) and Orange (19.2) Counties, and the lowest was seen in Rockland County (10.3). The M-H Region combined reported lower early syphilis case rates than NYS for both three-year periods [see Figure 271].

[197] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/std/syphilis/stdfact-syphilis.htm, accessed May 2022

[198] New York State Department of Health, Office of Sexual Health and Epidemiology, 2019, https://www.health.ny.gov/statistics/diseases/communicable/std/docs/sti_surveillance_report_2019.pdf, accessed May 2022

Figure 271

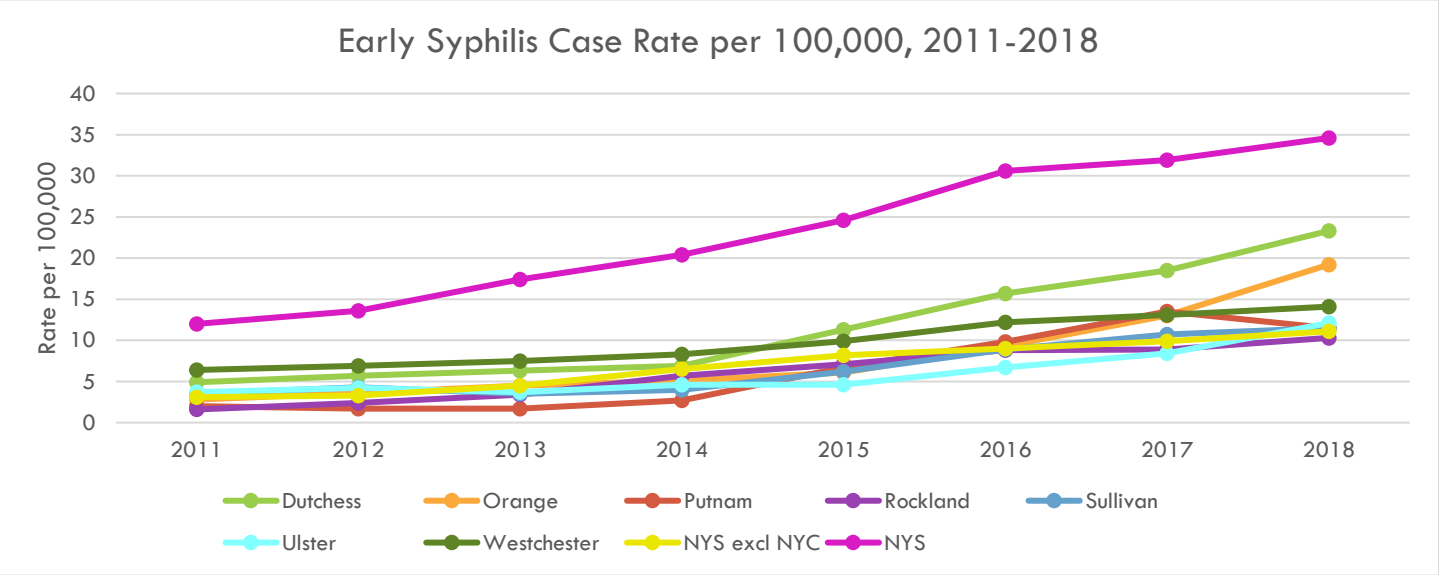


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
2014-2016	11.3	6.1	6.7	7.1	6.2	4.6	9.9	8.4	25.2
2017-2019	23.3	19.2	11.5	10.3	11.5	12.1	14.1	15.2	34.5

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg45

Figure 272 shows the trajectory of early syphilis case rates per 100,000 for all counties in the M-H Region compared to NYS for the years 2011 through 2018. Case rates are lower in M-H Region counties than the state but follow the same upward trend over time. NYC highly impacts the overall rate for NYS, and trends in M-H Region counties track more closely with that seen in NYS excluding NYC, with M-H Region counties showing a faster rate of increase starting in 2016. Between 2017 and 2018, Dutchess and Orange Counties increased most significantly, while Putnam was the only county with a decreased rate.

Figure 272

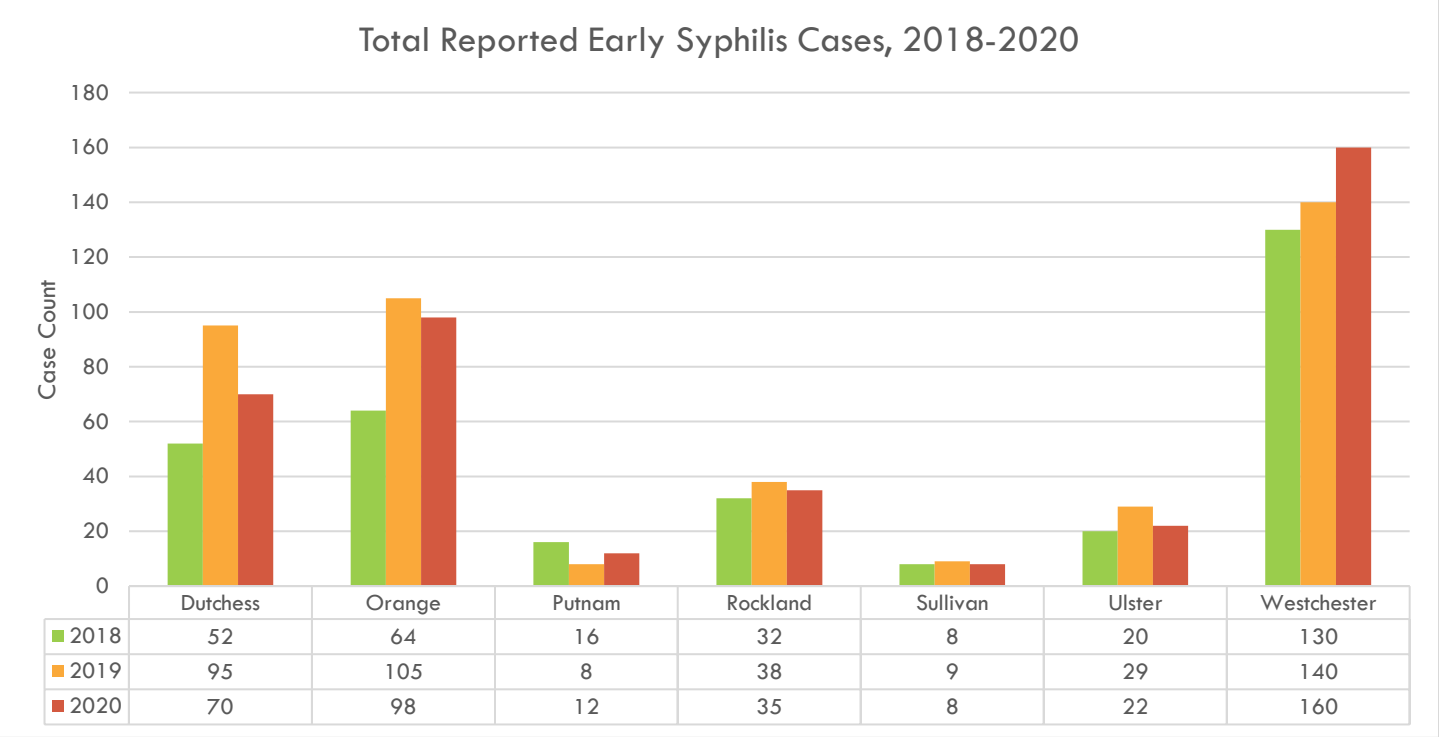


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	4.9	2.8	2.0*	1.6	3.5*	3.7	6.4	3.1	12.0
2012	5.7	3.6	1.7*	2.4	4.3	4.2	6.9	3.3	13.6
2013	6.3	4.5	1.7*	3.4	3.5*	3.7	7.5	4.5	17.4
2014	6.9	5.1	2.7*	5.7	4.0*	4.6	8.3	6.5	20.4
2015	11.3	6.1	6.7	7.1	6.2	4.6	9.9	8.2	24.6
2016	15.7	9.3	9.8	8.8	8.9	6.7	12.2	9.0	30.6
2017	18.5	13.0	13.5	8.9	10.7	8.4	13.1	9.9	31.9
2018	23.3	19.2	11.5	10.3	11.5	12.1	14.1	11.1	34.6

**: Fewer than ten events in the numerator, therefore, the rate is unstable.*
Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gg45

Figure 273 shows the M-H Region counties early syphilis case counts for 2018 to 2020. From 2018 to 2019, there was an increase in case counts in all counties except Putnam, with the most significant increases seen in Orange and Dutchess. From 2019 to 2020, all counties except Westchester and Putnam reported decreases in early syphilis cases. It is important to note that March of 2020 marked the start of a nationwide state of emergency due to COVID-19, significantly impacting the surveillance and reporting of sexually transmitted infections. Syphilis transmission may have also been affected by COVID-19 safety precautions and mandates for NY on Pause, which decreased person-to-person contact.

Figure 273



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
2018	52	64	16	32	8	20	130
2019	95	105	8	38	9	29	140
2020	70	98	12	35	8	22	160

Source: Office of Sexual Health and Epidemiology, 2017-2019
https://www.health.ny.gov/statistics/diseases/communicable/std/index.htm

CONGENITAL SYPHILIS

Rising syphilis rates pose an increased risk for the incidence of congenital syphilis. Congenital syphilis is a disease that occurs when a mother passes the infection to her baby during childbirth. Syphilis in pregnancy can result in adverse birth outcomes, including miscarriage, stillbirth, premature birth, low birthweight, and death shortly after delivery. Babies born with congenital syphilis can suffer from deformed bones, severe anemia, an enlarged liver or spleen, jaundice, brain and nerve problems, developmental disabilities, vision and hearing loss, meningitis, seizures, and skin rashes. These severe complications can be mitigated by the work of local health departments and obstetrical care providers to assure that cases in pregnant women are identified and appropriately treated. The CDC recommends that all women be tested at their first prenatal check-up, while some women should also be tested more than once during pregnancy.[199] From 2016 to 2020 there were between one and four cases of congenital syphilis reported each year in the M-H Region. In alignment with early syphilis case counts, Orange

[199] Centers of Disease Control and Prevention, 2022, https://www.cdc.gov/std/syphilis/stdfact-congenital-syphilis.htm, accessed May 2022

and Westchester Counties were most heavily impacted, reporting four and six cases of congenital syphilis over the five years.[200]

PELVIC INFLAMMATORY DISEASE

PID is an infection of the female reproductive organs. It usually occurs when sexually transmitted bacteria spread from the vagina to the uterus, fallopian tubes, or ovaries.[201] PID often has no signs or symptoms and, as a result, many do not know they have it or when they need treatment. Individuals usually are unaware they have PID until they have trouble getting pregnant or develop chronic pelvic pain. While PID can be treated, treatment cannot undo the damage that has already occurred to the reproductive system. The longer it takes to get treatment, the more likely complications will arise from PID. If untreated, PID complications may result in the formation of scar tissue inside and outside of the fallopian tubes. This can lead to tubal blockage, ectopic pregnancy, infertility, and long-term pelvic/abdominal pain. However, once treated, it is possible to be re-infected with PID if one becomes infected with another STI. In addition, if an individual has already had PID, they have a higher risk of contracting it again.

Because PID can result in serious complications, it is a reportable disease in NYS. This means medical professionals must report cases of PID to the NYSDOH. While PID often does not have symptoms in the early stages, if symptoms present, they often mirror other more common infections. Data regarding PID is not included as misdiagnosis often leads to inconsistent or incomplete reporting with unstable rates.[202] The rates of PID hospitalizations can be found on the NYS Community Health Indicator Reports dashboard located at: https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Gh14#pagetitle

[200] Congenital syphilis data was extracted from the New York State's Communicable Disease Electronic Surveillance System (CDESS) by individual counties and should be considered preliminary.

[201] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/std/pid/stdfact-pid.htm, accessed September 2022

[202] NIH, National Library of Medicine, National Center for Biotechnology Information, 2003, https://www.ncbi.nlm.nih.gov/pubmed/14603097/, accessed September 2022

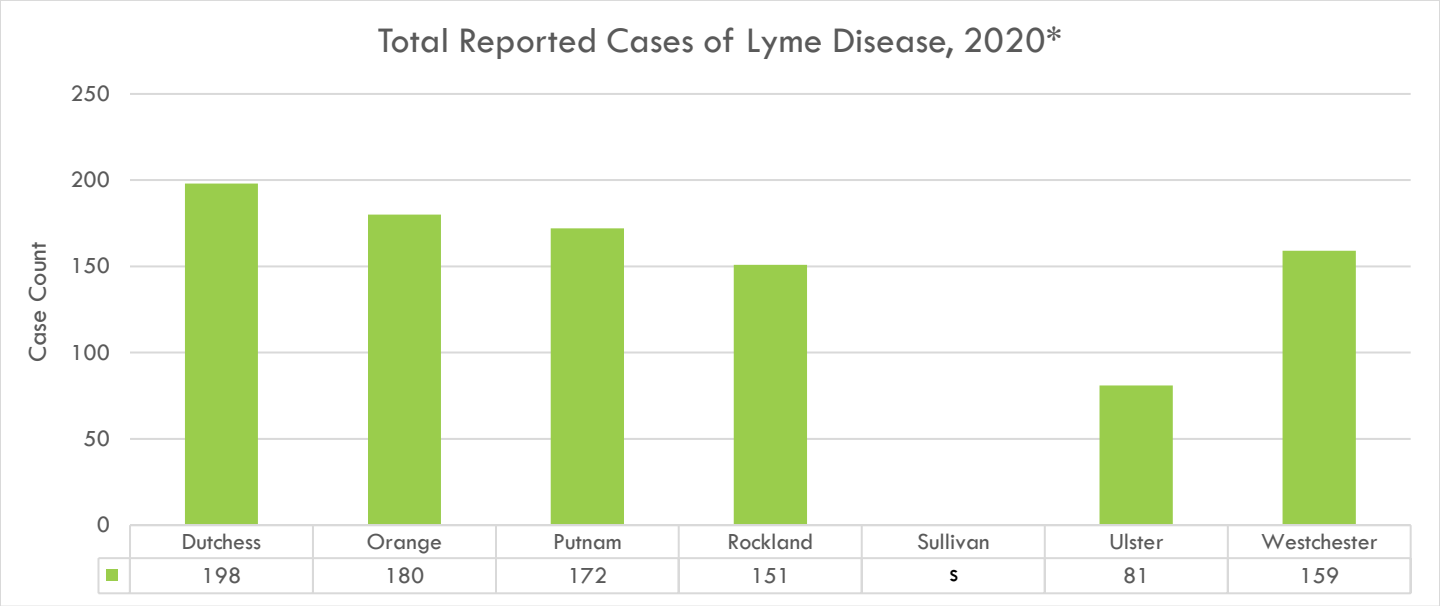
TICK-BORNE DISEASES

LYME DISEASE

Lyme disease is caused by the bacterium Borrelia burgdorferi, which is transmitted through the bite of infected black-legged ticks. Symptoms of Lyme disease may include fever, headache, fatigue, and a rash known as erythema migrans. Most cases of Lyme disease can be treated with antibiotics. Left untreated, Lyme disease can spread to joints, the heart, and the nervous system.[203] Lyme disease is diagnosed based on symptoms, physical findings, and exposure to infected ticks. Laboratory testing can also be helpful in diagnosing Lyme disease.

Each year, approximately 30,000 cases of Lyme disease are reported to the CDC by state health departments; however, the actual number of infections per year is thought to be much higher. Recent estimates suggest that this number is closer to 476,000.[204] Steps to prevent Lyme disease include using insect repellent, removing ticks promptly, using pesticides, and reducing tick habitats. In 2020, Dutchess and Orange Counties had the highest number of cases (198 and 180, respectively), while Ulster County had the lowest number of cases (81). Data for Sullivan County was not available but historically case numbers have been high, with 653 cases in 2019. All seven counties in the M-H Region saw lower Lyme disease case numbers in 2020 than in previous years, likely due to the impact of the COVID-19 pandemic on healthcare visits and laboratory testing. Nationally, the rate of ED visits for tick bites per 100,000 population decreased by nearly 40% and Lyme disease testing decreased by an estimated 25%, which could contribute to lower number of reported Lyme disease cases.[205]

Figure 274



: Data totals for 2020 are preliminary at the time of this report.
s: Preliminary data are not available.
Note: The number of cases is determined using sentinel surveillance, which is extrapolated from samples of positive laboratory results to generate estimates of the total number of cases. Sentinel surveillance was conducted in all Mid-Hudson counties in 2017.
Source: NYSDOH Communicable Disease Electronic Surveillance System (CDESS), 2022
https://health.ny.gov/statistics/diseases/communicable/

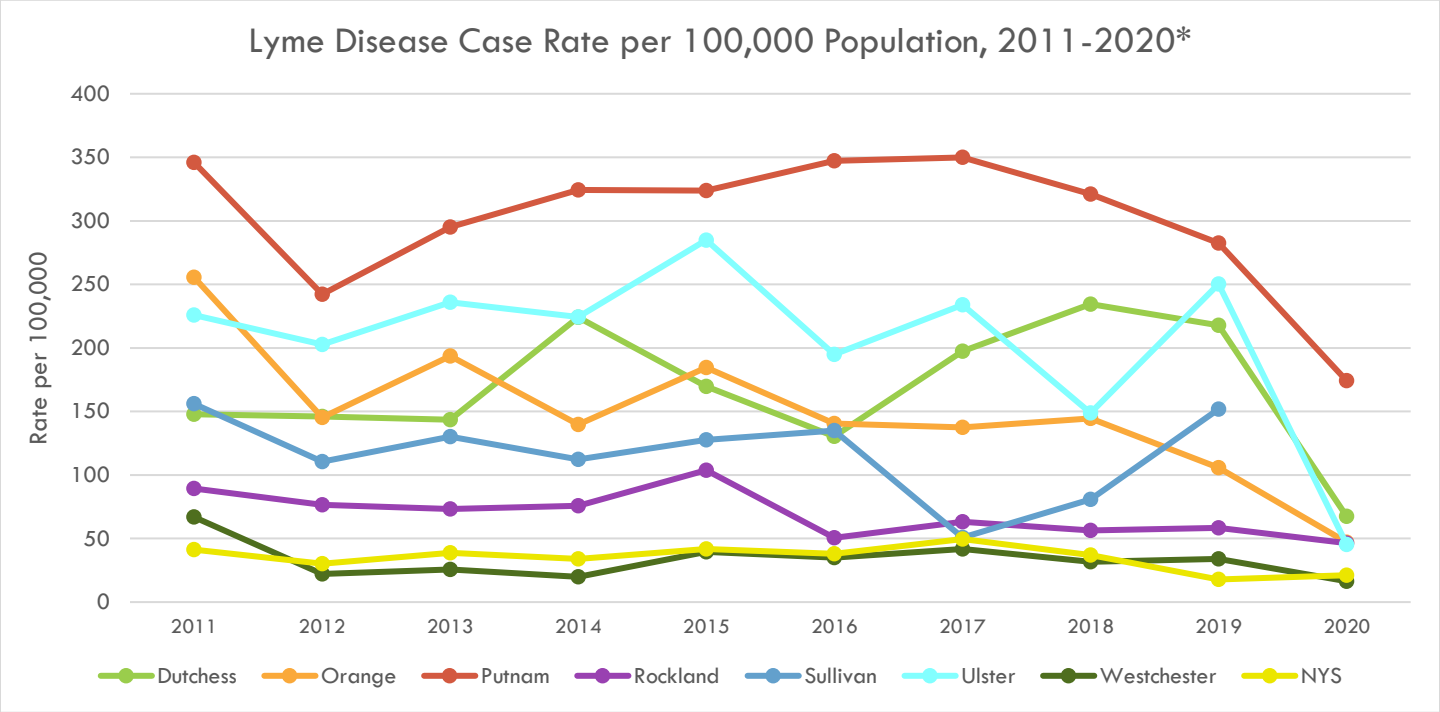
[203] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/lyme/treatment/index.html, accessed September 2022

[204] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/lyme/datasurveillance/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Flyme%2Fstats%2Findex.html, accessed August 2022

[205] NIH, National Library of Medicine, National Center for Biotechnology Information, 2021, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8462321/, accessed November 2022

As seen in Figure 275, Putnam County had the highest case rate of Lyme disease in 2020 (174.2 per 100,000 population). Case rates fluctuated in all counties from 2018 to 2020. However, some counties had steady decreases during that time (Putnam, Orange, and Dutchess), and others had an increase in 2019, followed by a decrease in 2020 (Rockland and Westchester). The case rate for each county in 2020 was above that of NYS, except for Westchester County. A rate could not be calculated for Sullivan County in 2020 [see Figure 275].

Figure 275



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2011	147.9	255.6	346.0	89.5	156.0	225.8	66.9	41.3
2012	146.0	145.4	242.2	76.5	110.5	202.8	22.1	30.2
2013	143.6	193.6	295.2	73.3	130.2	236.0	25.7	38.8
2014	224.0	139.8	324.2	75.7	112.2	224.3	20.0	34.0
2015	169.6	184.5	323.7	103.8	127.7	284.9	39.6	41.9
2016	130.5	140.6	347.3	50.6	134.9	194.9	35.1	38.1
2017	197.3	137.4	349.9	63.3	50.8	233.8	41.8	49.6
2018	234.5	144.4	321.1	56.3	80.8	148.8	31.8	36.9
2019	217.9	105.8	282.4	58.3	151.8	250.2	34.0	17.8
2020*	67.5	47.1	174.2	46.4	s	45.4	16.4	21.1

**: Data totals for 2020 are preliminary at the time of this report*
s: Preliminary data are not available therefore a rate cannot be calculated.
Note: The number of cases is determined using sentinel surveillance, which is extrapolated from samples of positive laboratory results to generate estimates of the total number of cases. Sentinel surveillance was conducted in all Mid-Hudson Counties in 2017.
Source: NYSDOH Communicable Disease Annual Reports, and NYSDOH Communicable Disease Electronic Surveillance System (CDESS), 2022
https://health.ny.gov/statistics/diseases/communicable/

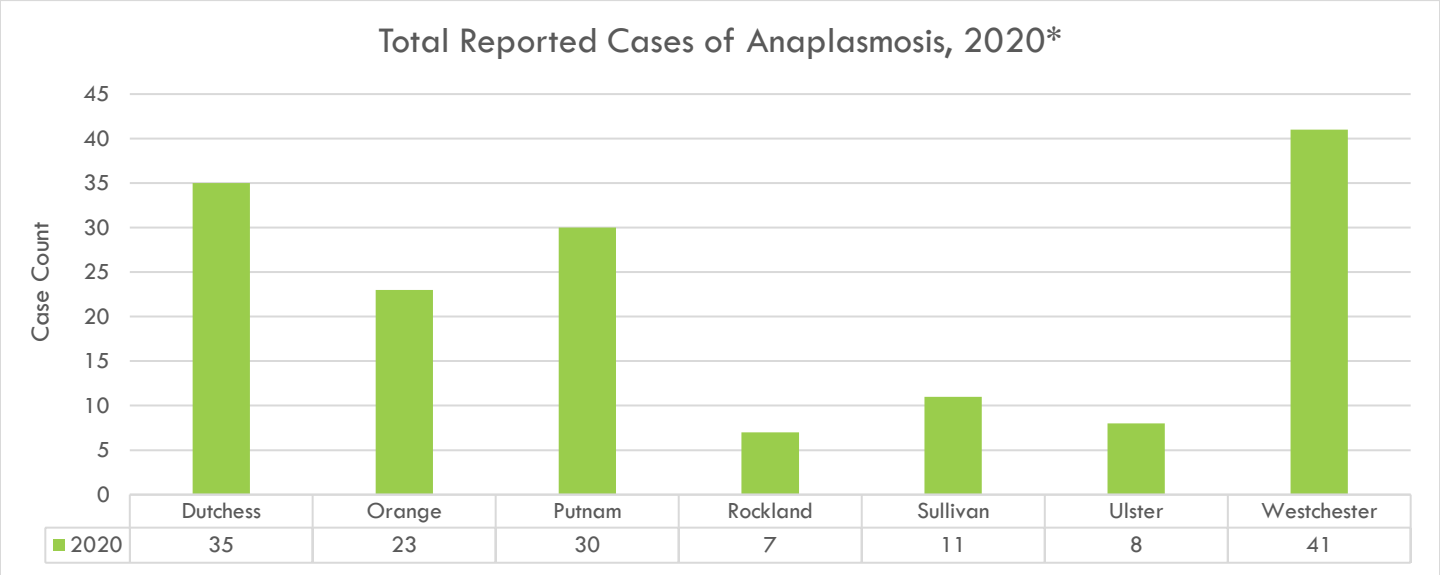
ANAPLASMOSIS

Anaplasmosis is a disease caused by the bacterium Anaplasma phagocytophilum, which is transmitted to humans via the bite of infected black-legged ticks. Early symptoms of anaplasmosis may include fever, headache, chills, and muscle aches. If left untreated, or if other medical conditions are present, anaplasmosis can cause more serious illness resulting in respiratory failure, bleeding problems, organ failure, and, in rare cases, death.[206] Anaplasmosis is diagnosed based on symptoms and blood tests. People with weakened immune systems may be at an increased risk of severe outcomes.

The number of reported anaplasmosis cases in the US rose from 2000 to 2017, peaking in 2017 with 5,762. It decreased in 2018 and increased again in 2019 to 5,655.[207] The geographic range of anaplasmosis also appears to be increasing as black-legged ticks expand in range. From 2018 to 2019 the states with the highest incidence category of Anaplasmosis (13.1+ per million population) increased from 11 to 12 states. As of 2019, the states with the highest rates, in ascending order, are ND, NJ, PA, WI, MN, CT, NY, MA, RI, NH, ME, and VT. Only one state dropped from that category (DE), and all other states within that category had rate increases. NYS' incidence nearly doubled from 2018 to 2019.[208]

Westchester County had the highest number of reported cases in the M-H Region in 2020 (41) and Rockland had the lowest (7) [see Figure 276]. In most counties, the case rate decreased from 2017 to 2018, increased in 2019 (except for Rockland, which saw a decrease), and decreased again in 2020 [see Figure 277]. In 2020, Putnam County reported the highest rate of anaplasmosis cases (30.4 per 100,000 population) and Rockland had the lowest (2.2 per 100,000 population) [see Figure 277].

Figure 276



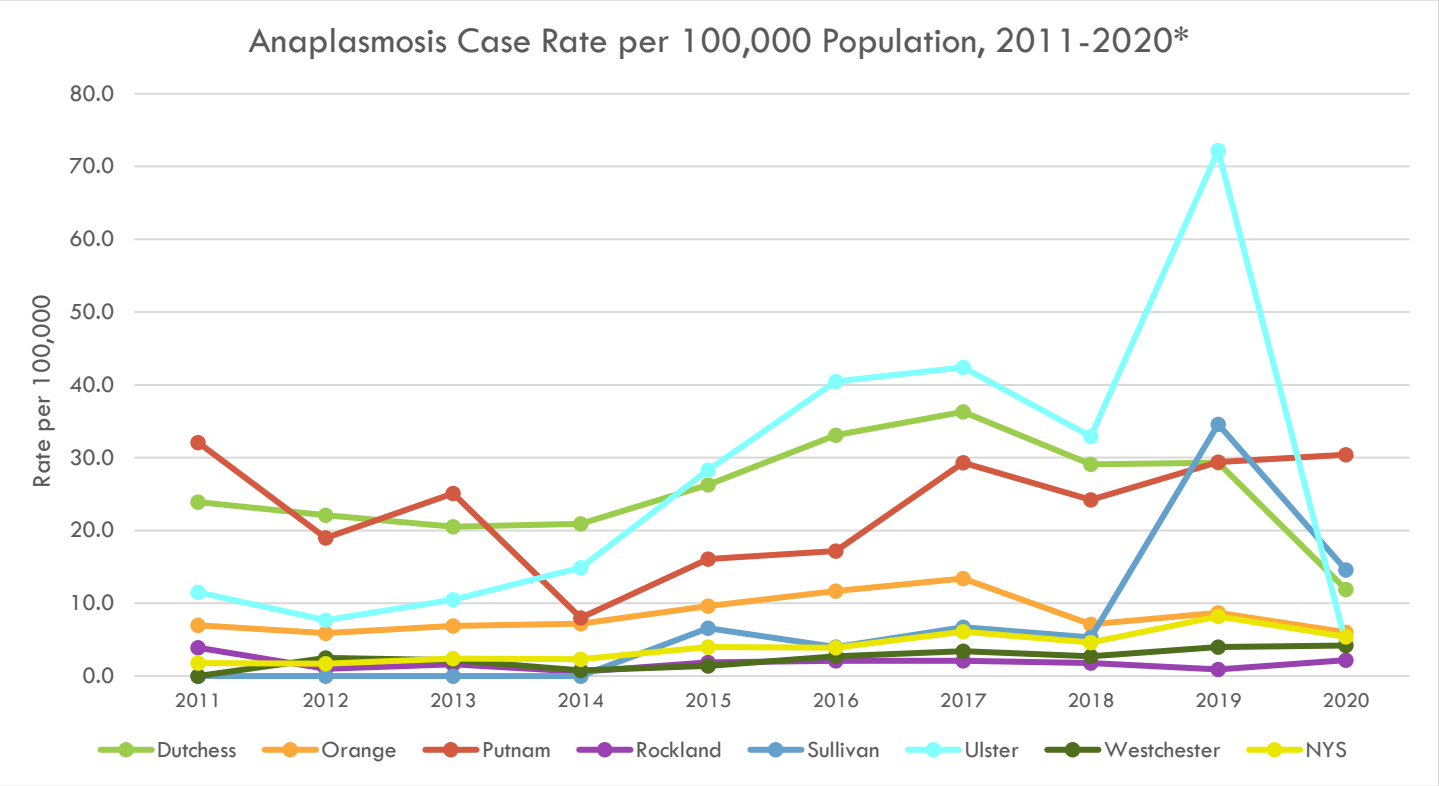
*: *Data totals for 2020 are preliminary at the time of this report*
Source: NYSDOH Communicable Disease Electronic Surveillance System (CDESS), 2022
https://health.ny.gov/statistics/diseases/communicable/

[206] Centers for Disease Control and Prevention, 2019, https://www.cdc.gov/anaplasmosis/symptoms/index.html, accessed September 2022

[207] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/anaplasmosis/, accessed August 2022

[208] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/anaplasmosis/, accessed August 2022

Figure 277



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2011	23.9	7.0	32.1	3.9	0.0	11.5	0.0	1.8
2012	22.1	5.9	19.0	1.0	0.0	7.7	2.5	1.7
2013	20.5	6.9	25.1	1.6	0.0	10.5	2.2	2.4
2014	20.9	7.2	8.0	0.6	0.0	14.9	0.8	2.3
2015	26.3	9.6	16.1	1.9	6.6	28.3	1.4	4.0
2016	33.1	11.7	17.2	2.1	4.0	40.5	2.7	3.9
2017	36.3	13.4	29.3	2.1	6.7	42.4	3.4	6.1
2018	29.1	7.1	24.2	1.8	5.3	32.9	2.7	4.6
2019	29.3	8.7	29.4	0.9	34.6	72.2	4.0	8.2
2020*	11.9	6.0	30.4	2.2	14.6	4.5	4.2	5.4

: Data totals for 2020 are preliminary at the time of this report
Source: NYSDOH Communicable Disease Annual Reports, and NYSDOH Communicable Disease Electronic Surveillance System (CDESS), 2022
https://health.ny.gov/statistics/diseases/communicable/

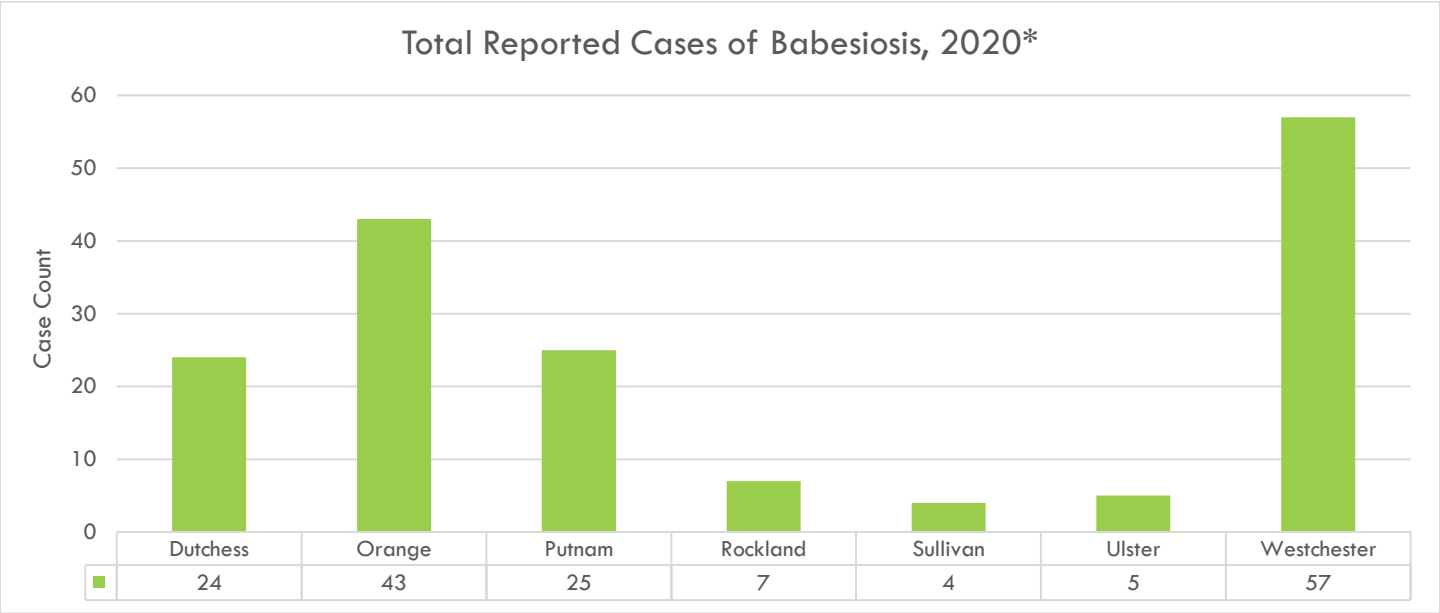
BABESIOSIS

Babesiosis is caused by the parasite Babesia microti that infects red blood cells and is spread by black-legged ticks. Tick-borne transmission is most common in the Northeast and upper Midwest of the US and usually peaks during warmer months. Many individuals infected with babesiosis do not experience any symptoms, but treatment is available for those who do. In those with symptoms, babesiosis is usually diagnosed by examining blood specimens to search for Babesia microti parasites in the red blood cells.[209]

[209] Centers for Disease Control and Prevention, 2020, https://www.cdc.gov/parasites/babesiosis/, accessed August 2022

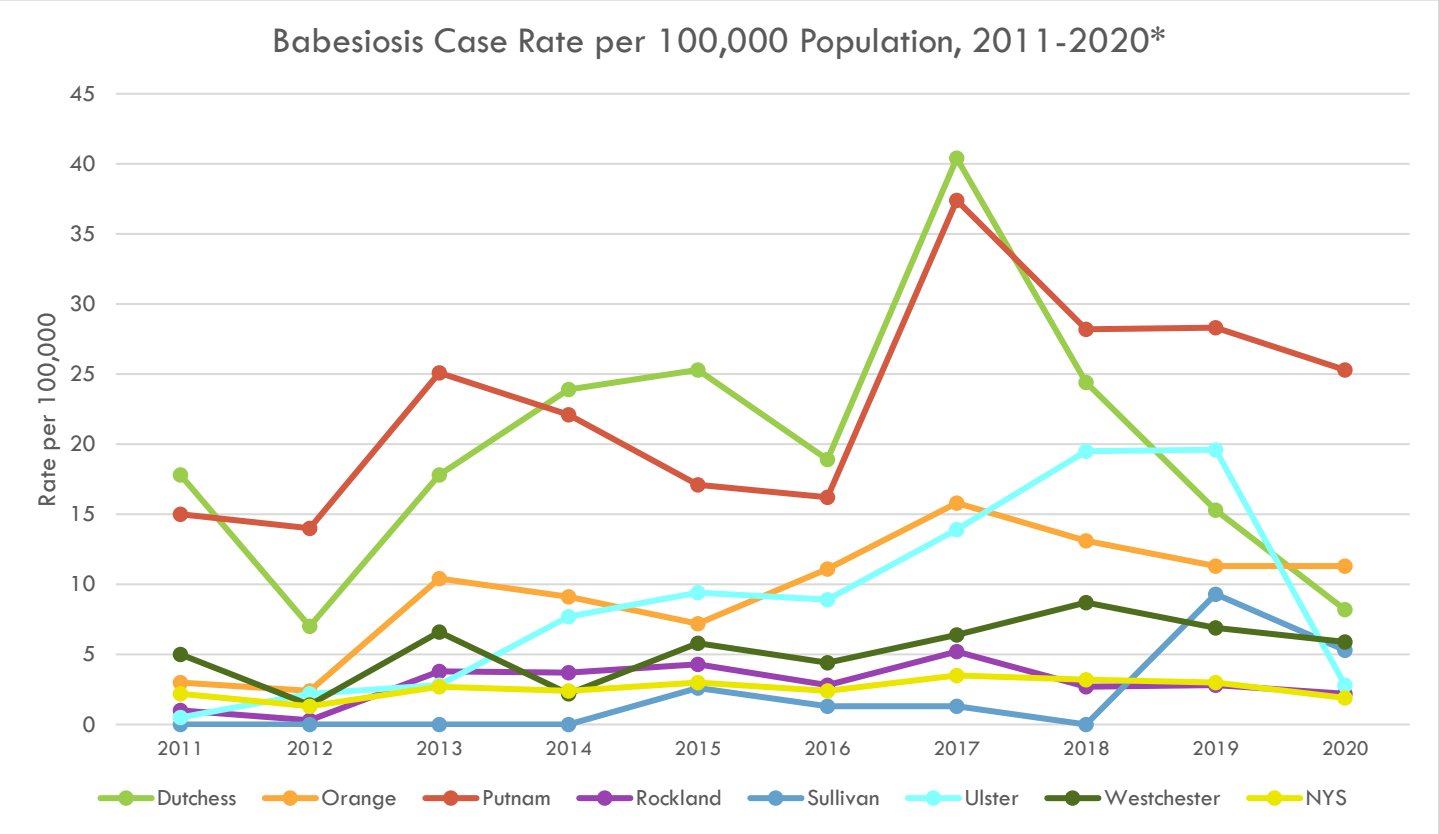
In 2020, Westchester County had the highest number of reported cases (57) in the region [see Figure 278]. From 2011 through 2017, every county in the region experienced a net increase in case rate, with Dutchess and Putnam experiencing the most significant rate increases. However, from 2017 through 2020 all counties except Sullivan experienced significant net decreases in case rate. As of 2020 all counties in the M-H Region experienced rates that were higher than NYS [see Figure 279].

Figure 278



*: *Data totals for 2020 are preliminary at the time of this report*
Source: NYSDOH Communicable Disease Electronic Surveillance System (CDESS), 2022
https://health.ny.gov/statistics/diseases/communicable/

Figure 279



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2011	17.8	3.0	15.0	1.0	0.0	0.5	5.0	2.2
2012	7.0	2.4	14.0	0.3	0.0	2.2	1.4	1.3
2013	17.8	10.4	25.1	3.8	0.0	2.8	6.6	2.7
2014	23.9	9.1	22.1	3.7	0.0	7.7	2.2	2.4
2015	25.3	7.2	17.1	4.3	2.6	9.4	5.8	3.0
2016	18.9	11.1	16.2	2.8	1.3	8.9	4.4	2.4
2017	40.4	15.8	37.4	5.2	1.3	13.9	6.4	3.5
2018	24.4	13.1	28.2	2.7	0.0	19.5	8.7	3.2
2019	15.3	11.3	28.3	2.8	9.3	19.6	6.9	3.0
2020*	8.2	11.3	25.3	2.2	5.3	2.8	5.9	1.9

: Data totals for 2020 are preliminary at the time of this report
Source: NYSDOH Communicable Disease Annual Reports, and NYSDOH Communicable Disease Electronic Surveillance System (CDESS), 2022
https://health.ny.gov/statistics/diseases/communicable/

EHRLICHIOSIS

Ehrlichiosis includes the diseases caused by the bacteria Ehrlichia chaffeenis, E. ewingii, or E. muris eauclairensis. Ehrlichiosis is spread to humans primarily through the bite of infected lone star and black-legged ticks. People infected with ehrlichiosis often experience fever, chills, headache, muscle aches, and sometimes an upset stomach.[210] Although infection can occur any month of the year, most reported cases occur during the summer months.[211] Geographically, ehrlichiosis is spread from the east coast to the west toward Texas. Cases are more

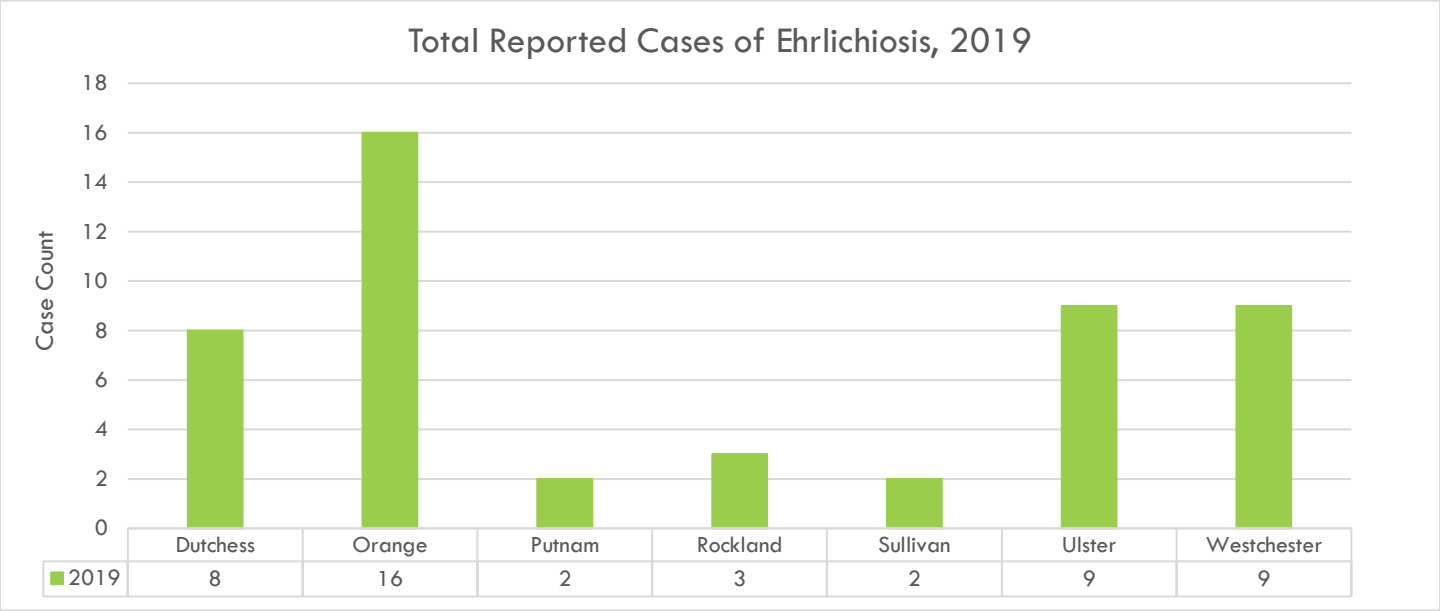
[210] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/ehrlichiosis/, accessed August 2022

[211] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/ehrlichiosis/stats/index.html, accessed October 2022

frequently reported in men than women and in people aged 60-69 years.[212] People with compromised immune systems may be at an increased risk for severe diseases.

Orange County reported the highest numbers of cases in the M-H Region (16), while Sullivan and Putnam Counties reported two cases each [see Figure 280]. Most counties experienced a peak in case rate from 2015 through 2017 (Putnam had the highest peak during this time at 8.1 cases per 100,00 population in 2016), with the exception of Ulster which experienced its peak in 2019. In 2019, all counties in the M-H Region experienced rates higher than NYS' rate for the first time since 2011. From 2019 to 2020, all counties experienced rate decreases, with Dutchess, Putnam, Rockland, Sullivan, and Ulster Counties posting rates of 0.0 in 2020 [see Figure 281].

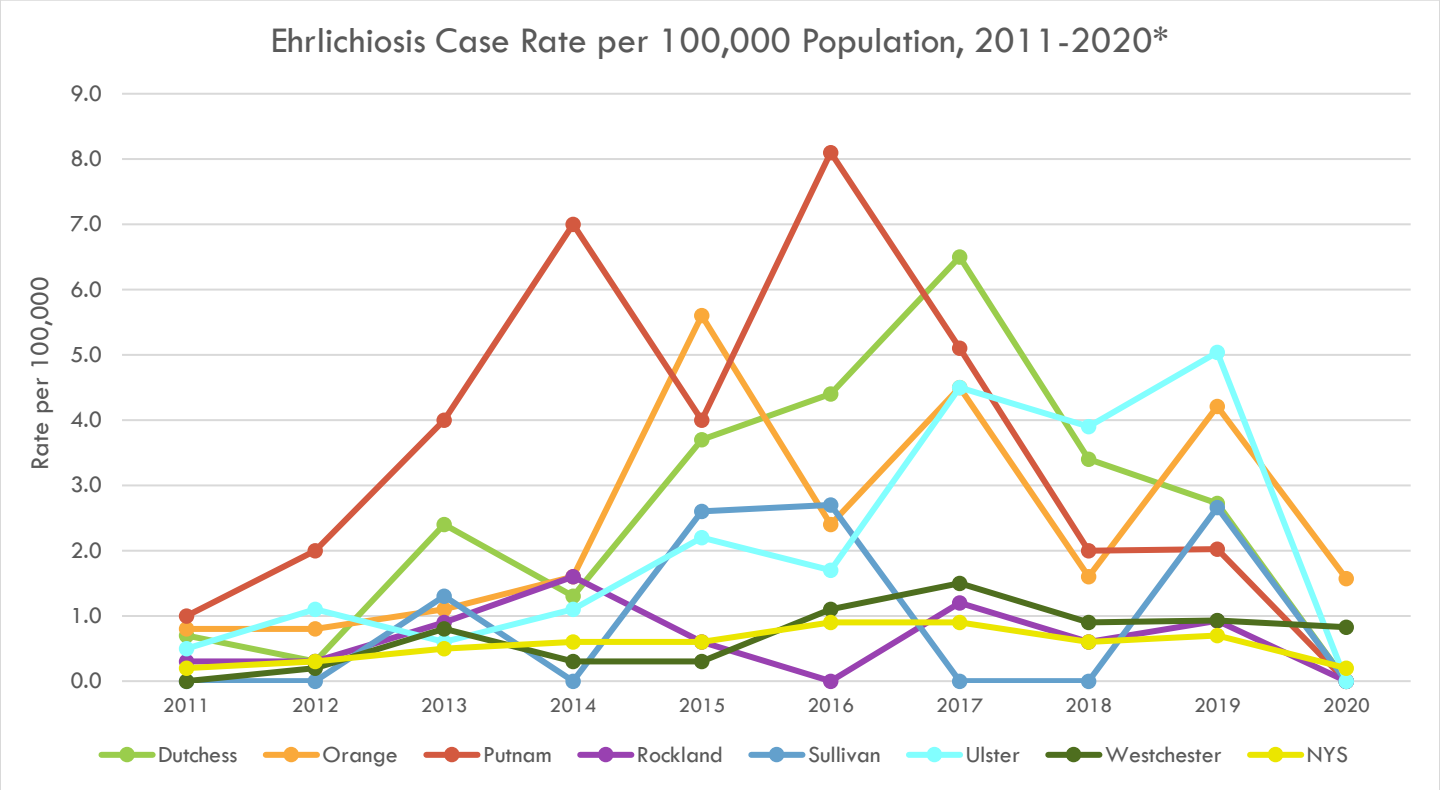
Figure 280



Source: NYSDOH Communicable Disease Annual Reports, and NYSDOH Communicable Disease Electronic Surveillance System (CDESS), 2022
https://health.ny.gov/statistics/diseases/communicable/

[212] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/ehrlichiosis/stats/index.html, accessed October 2022

Figure 281



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS
2011	0.7	0.8	1.0	0.3	1.3	0.5	0.0	0.4
2012	0.3	0.8	2.0	0.3	0.0	1.1	0.2	0.4
2013	2.4	1.1	4.0	0.9	1.3	0.6	0.8	0.8
2014	1.3	1.6	7.0	1.6	0.0	1.1	0.3	1.0
2015	3.7	5.6	4.0	0.6	2.6	2.2	0.3	1.0
2016	4.4	2.4	8.1	0.0	2.7	1.7	1.1	1.4
2017	6.5	4.5	6.1	1.2	0.0	4.5	0.2	1.4
2018	3.4	1.6	2.0	0.6	0.0	3.9	0.9	0.6
2019	2.7	4.2	2.0	0.9	2.7	5.0	0.9	0.7
2020*	0.0	1.6	0.0	0.0	0.0	0.0	0.8	0.2

*: *Data totals for 2020 are preliminary at the time of this report*
Source: NYSDOH Communicable Disease Annual Reports, and NYSDOH Communicable Disease Electronic Surveillance System (CDESS), 2022
https://health.ny.gov/statistics/diseases/communicable/

RABIES

Rabies is a nearly 100% fatal but preventable viral disease that infects the central nervous system. The virus can be spread to people and pets that are bitten or scratched by a rabid animal.[213] All mammals are susceptible to rabies, but in the US more than 90% of reported cases of rabies in animals are in wildlife. Species that most commonly carry rabies include raccoons, skunks, bats, and foxes. Rabies is much less common in domestic animals due to ongoing efforts to maintain high vaccination rates in these species. Rabies in people is very rare in the US,

[213] Center for Disease Control and Prevention, 2022, https://www.cdc.gov/rabies/index.html, accessed May 2022

with only one to three cases reported most years. Contact with infected bats, which can go unrecognized, is the leading cause of these human cases.[214]

In NYS, local health departments prevent rabies in people by offering vaccinations to pets, investigating reports of human and pet exposures to possibly rabid animals, and assuring access to rabies post-exposure prophylaxis (RPEP) when indicated. After a possible rabies exposure, appropriate medical care and administration of RPEP is critical to prevent the development of the disease.

In 2021, only a single domestic animal from Rockland County tested positive for rabies, constituting 4.2% of domestic animal species tested from Rockland and 0.5% of all domestic animal specimens tested from the M-H Region [see Table 38]. Dutchess County had the highest number of rabies-positive wild animals (5), and Orange County had the highest percentage of wild animals submitted test positive (7.8%). Across the M-H Region, 17 wild animals tested positive, constituting 2.9% of all wild animals submitted for rabies testing [see Table 39].

Table 38

Animal Rabies Testing of Domestic Species*, 2021

County	Total Domestic Animals Tested	Total Domestic Animals Positive	Percent Positive
Dutchess	26	0	0.0%
Orange	37	0	0.0%
Putnam	20	0	0.0%
Rockland	24	1	4.2%
Sullivan	10	0	0.0%
Ulster	26	0	0.0%
Westchester	69	0	0.0%
Mid-Hudson	212	1	0.5%

*: *Domestic animals include dogs, cats, ferrets, horses, donkeys, mules, cattle, sheep, goats, and pigs*
Source: Wadsworth Center Rabies lab, consolidated 2021 data by request
https://www.wadsworth.org/programs/id/rabies/reports

Table 39

Animal Rabies Testing of Wild Species*, 2021

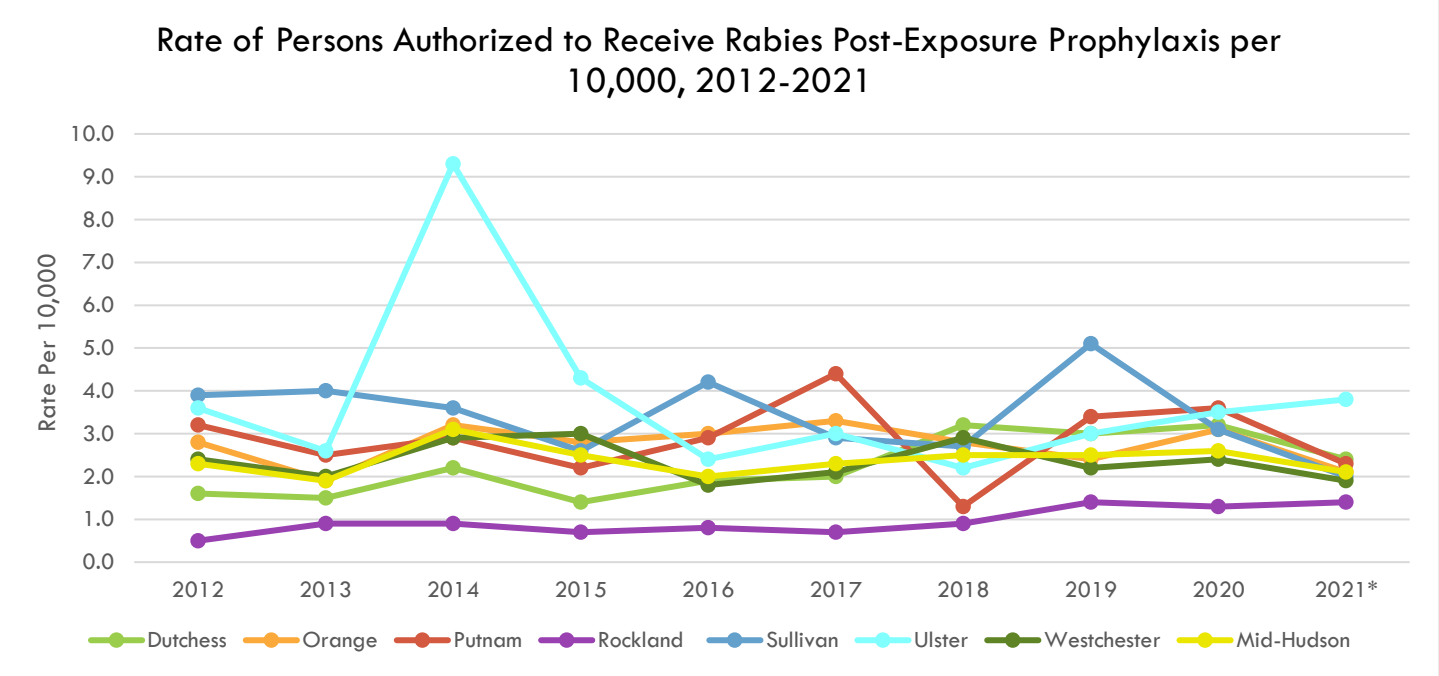
County	Total Wild Species Tested	Total Wild Species Positive	Percent Positive
Dutchess	74	5	6.8%
Orange	52	4	7.7%
Putnam	57	1	1.8%
Rockland	44	1	2.3%
Sullivan	16	0	0.0%
Ulster	69	2	2.9%
Westchester	273	4	1.5%
Mid-Hudson	584	17	2.9%

*: *Wild animals include bats, bears, bobcats, coyote, deer, fox, opossum, porcupine, rabbit, raccoon, rat, skunk, squirrel, weasel, woodchuck*
Source: Wadsworth Center Rabies lab, consolidated 2021 data by request
https://www.wadsworth.org/programs/id/rabies/reports

[214] Center for Disease Control and Prevention, 2022, https://www.cdc.gov/rabies/animals/index.html, accessed May 2022

The incidence rate for people in the M-H Region being authorized to receive post-exposure prophylaxis was generally stable between 2012 and 2021, except for 2014 where the spike was attributable to an increase in human-bat contact in Ulster County [see Figure 282].

Figure 282



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson
2012	1.6	2.8	3.2	0.5	3.9	3.6	2.4	2.3
2013	1.5	1.9	2.5	0.9	4.0	2.6	2.0	1.9
2014	2.2	3.2	2.9	0.9	3.6	9.3	2.9	3.1
2015	1.4	2.8	2.2	0.7	2.6	4.3	3.0	2.5
2016	1.9	3.0	2.9	0.8	4.2	2.4	1.8	2.0
2017	2.0	3.3	4.4	0.7	2.9	3.0	2.1	2.3
2018	3.2	2.8	1.3	0.9	2.7	2.2	2.9	2.5
2019	3.0	2.4	3.4	1.4	5.1	3.0	2.2	2.5
2020	3.2	3.1	3.6	1.3	3.1	3.5	2.4	2.6
2021	2.4	2.1	2.3	1.4	2.0	3.8	1.9	2.1

**: 2021 population estimates not available. Rates determined with 2020 population estimates*
Source: NYSDOH Department of Health Bureau of Communicable Disease Control
https://www.health.ny.gov/diseases/communicable/zoonoses/rabies/

CLOSTRIDIUM DIFFICILE

Hospital acquired infections (HAI) cause significant complications in health care facilities. One common HAI is Clostridioides difficile (C. diff), a bacterium that can cause symptoms ranging from diarrhea to life-threatening colon inflammation.[215] This is usually the result of side effects from taking antibiotics. While C. diff is often a HAI acquired in health care settings, it can also be acquired in the community. Most cases of C. diff occur in people aged 65 years and older, people who take antibiotics and receive medical care, people staying in hospitals and nursing homes for a long period of time, people with weakened immune systems, and people who have had a previous C. diff infection. Symptoms of C. diff may start within a few days of infection or several weeks after taking antibiotics. Symptoms include diarrhea, fever, stomach tenderness, loss of appetite, and nausea. C. diff is easily spread from person to person and it is a major health threat.

Many HAIs, such as C. diff, are preventable. Recent studies have suggested that implementing infection prevention practices can lead to up to a 70% reduction in HAIs.[216] Healthy People 2020 objectives were developed to measure the progress towards reducing the incidence of certain HAIs, such as C. Diff.

Hospital rates in New York State can be found here:
https://www.health.ny.gov/statistics/facilities/hospital/hospital_acquired_infections/

[215] Mayo Clinic, https://www.mayoclinic.org/diseases-conditions/c-difficile/symptoms-causes/syc-20351691, accessed September 2022

[216] World Health Organization, 2022, https://www.who.int/news/item/06-05-2022-who-launches-first-ever-global-report-on-infection-prevention-and-control, accessed October 2022

REPRODUCTIVE HEALTH

COUNTY ZIP CODE PERINATAL PROFILE

Perinatal Profiles contain data regarding total births, adverse birth outcomes, prenatal care, Medicaid/self-pay births, and teen pregnancy by county and ZIP code.

New York State County / ZIP Code Perinatal Profiles can be found at:
https://www.health.ny.gov/statistics/chac/perinatal/county/2017-2019/

PRENATAL CARE

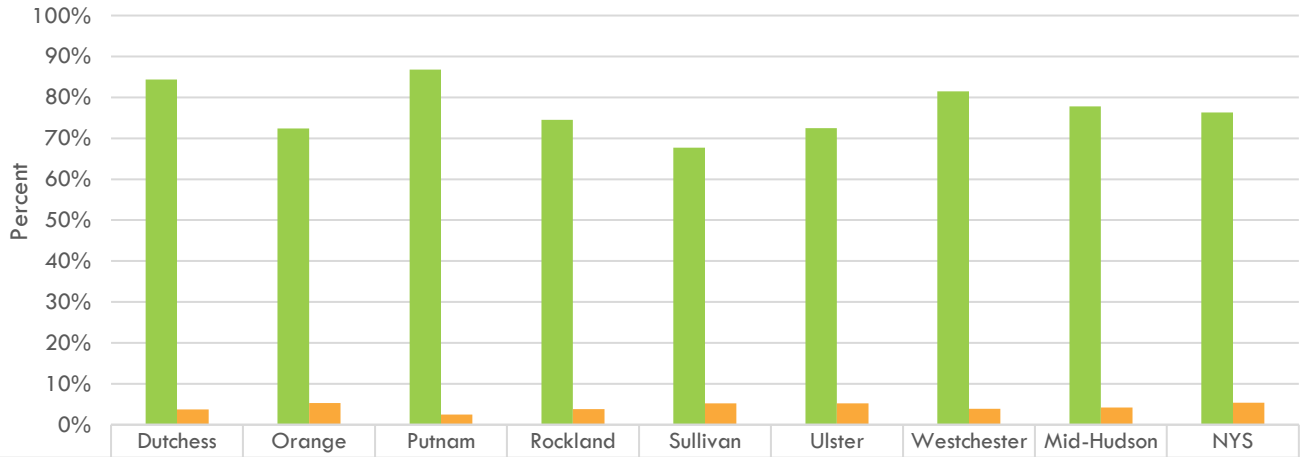
Prenatal care is the health care received from medical providers during pregnancy, including checkups, physicals, and prenatal testing. Getting early and regular prenatal care in the first trimester can help keep mothers and their babies healthy as it lets medical providers identify and treat health problems early. Babies born to mothers who do not get prenatal care are three times more likely to have a low birthweight and five times more likely to die.[217] During their first two trimesters, mothers should have prenatal visits every four to six weeks. After the first two trimesters, mothers should schedule prenatal visits every two to three weeks until week 36. After week 36, mothers should have a prenatal visit every week.

One objective of Healthy People 2020 was to increase the proportion of pregnant women who receive early and adequate prenatal care. Their target goal was to increase the percentage of pregnant women who receive prenatal care beginning in the first trimester to 84.8%.[218] The M-H Region fell below this target, with 77.8% of women receiving early prenatal care in the first trimester [see Figure 283]. This percentage was highest in Putnam County (86.8%) and lowest in Sullivan County (67.7%). The rate of women receiving late or no prenatal care was also highest in Orange, Sullivan, and Ulster Counties (5.3%, 5.2%, and 5.2%, respectively), but fell below the 5.4% of women in NYS that received late or no prenatal care.

[217] OASH, Office on Women's Health, US Department of Health and Human Services, 2021, https://www.womenshealth.gov/a-z-topics/prenatal-care, accessed June 2022

[218] Healthy People 2020, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, 2022, https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health, accessed June 2022

Figure 283

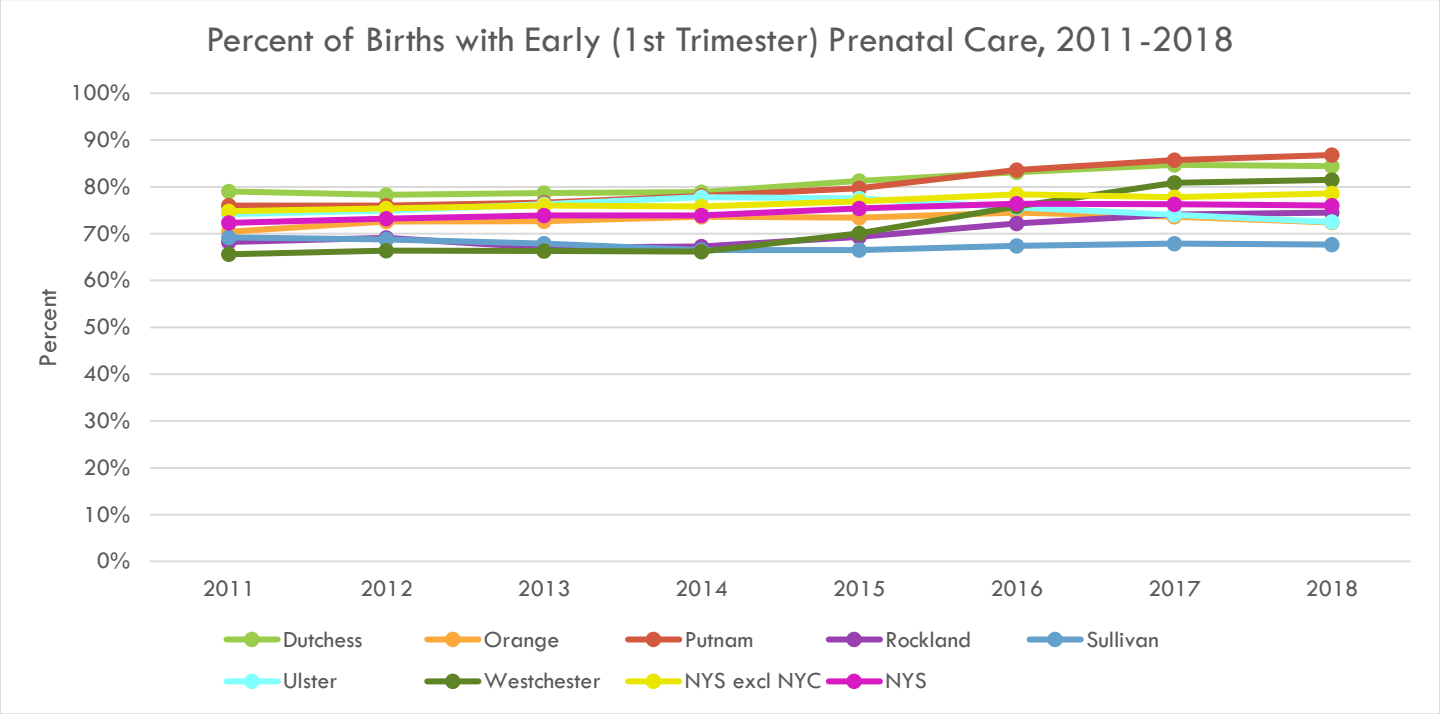


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
Early prenatal care	84.4%	72.4%	86.8%	74.5%	67.7%	72.5%	81.5%	77.8%	76.3%
Late/no prenatal care	3.7%	5.3%	2.5%	3.8%	5.2%	5.2%	3.9%	4.2%	5.4%

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=lb21
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=lb22

From 2011 to 2018, there were no marked changes in the percentage of women who receive early, late, or no prenatal care in the M-H Region [see Figure 284, Figure 285].

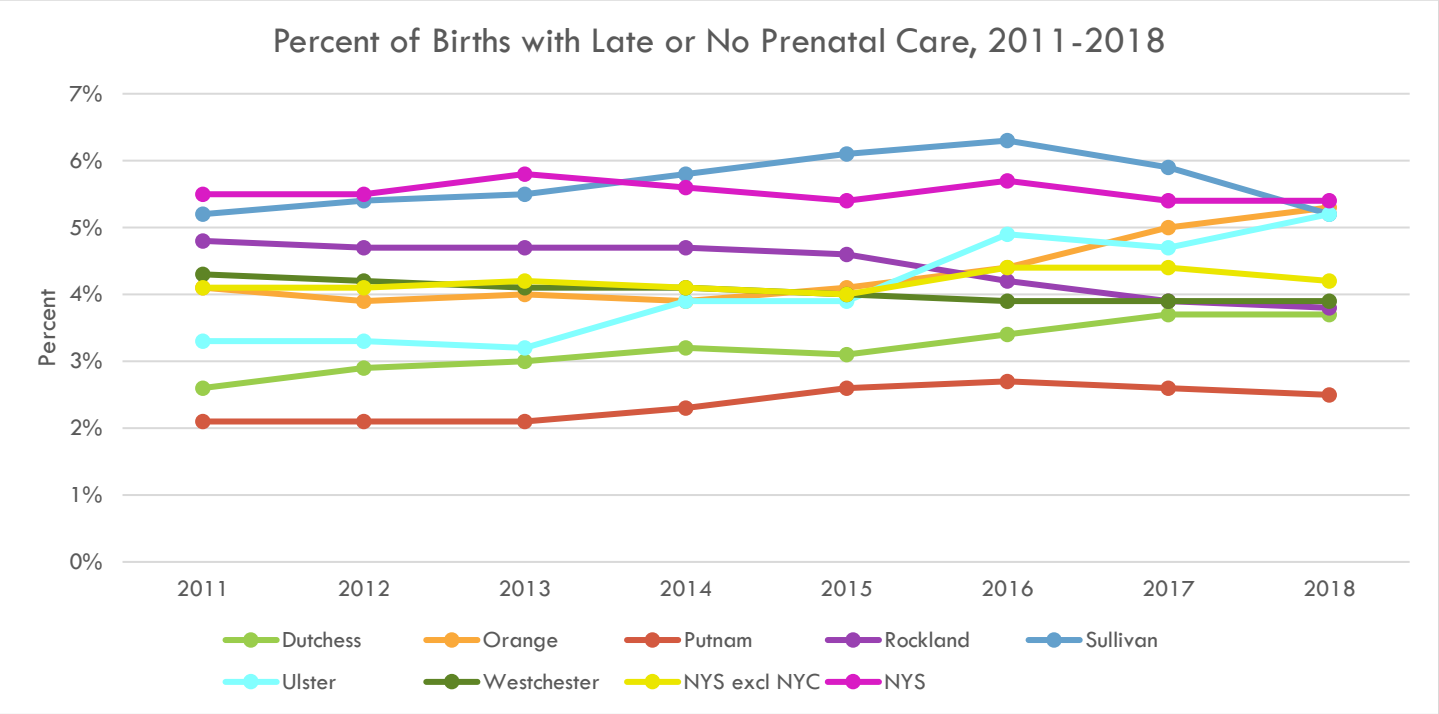
Figure 284



	Three-Year Average							Single Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	79.0%	70.4%	76.0%	68.2%	69.2%	74.2%	65.6%	74.8%	72.3%
2012	78.3%	72.6%	76.0%	69.1%	68.8%	74.9%	66.4%	75.4%	73.2%
2013	78.7%	72.7%	76.6%	67.0%	67.9%	76.3%	66.3%	76.0%	73.9%
2014	78.9%	73.6%	78.1%	67.3%	66.5%	77.8%	66.2%	75.8%	73.9%
2015	81.3%	73.4%	79.7%	69.3%	66.5%	77.5%	70.1%	76.9%	75.4%
2016	83.1%	74.5%	83.6%	72.2%	67.4%	75.6%	75.8%	78.4%	76.4%
2017	84.7%	73.6%	85.7%	74.1%	67.9%	74.0%	80.9%	77.8%	76.3%
2018	84.4%	72.4%	86.8%	74.5%	67.7%	72.5%	81.5%	78.6%	76.0%

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=lb21

Figure 285

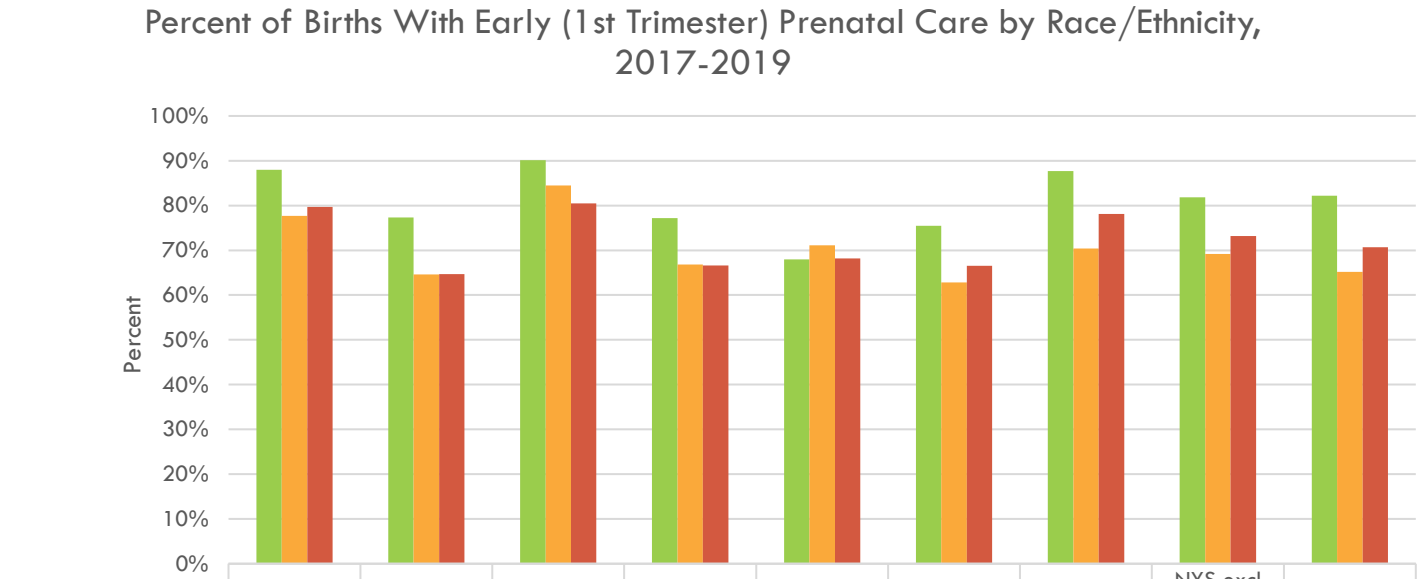


	Three-Year Average							Single Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	2.6%	4.1%	2.1%	4.8%	5.2%	3.3%	4.3%	4.1%	5.5%
2012	2.9%	3.9%	2.1%	4.7%	5.4%	3.3%	4.2%	4.1%	5.5%
2013	3.0%	4.0%	2.1%	4.7%	5.5%	3.2%	4.1%	4.2%	5.8%
2014	3.2%	3.9%	2.3%	4.7%	5.8%	3.9%	4.1%	4.1%	5.6%
2015	3.1%	4.1%	2.6%	4.6%	6.1%	3.9%	4.0%	4.0%	5.4%
2016	3.4%	4.4%	2.7%	4.2%	6.3%	4.9%	3.9%	4.4%	5.7%
2017	3.7%	5.0%	2.6%	3.9%	5.9%	4.7%	3.9%	4.4%	5.4%
2018	3.7%	5.3%	2.5%	3.8%	5.2%	5.2%	3.9%	4.2%	5.4%

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=lb22

There are racial and ethnic disparities surrounding prenatal care in the M-H Region. Non-Hispanic White women had the highest percentage of early prenatal care in every county. Non-Hispanic Black and Hispanic women had slightly lower percentages of early prenatal care [see Figure 286].

Figure 286



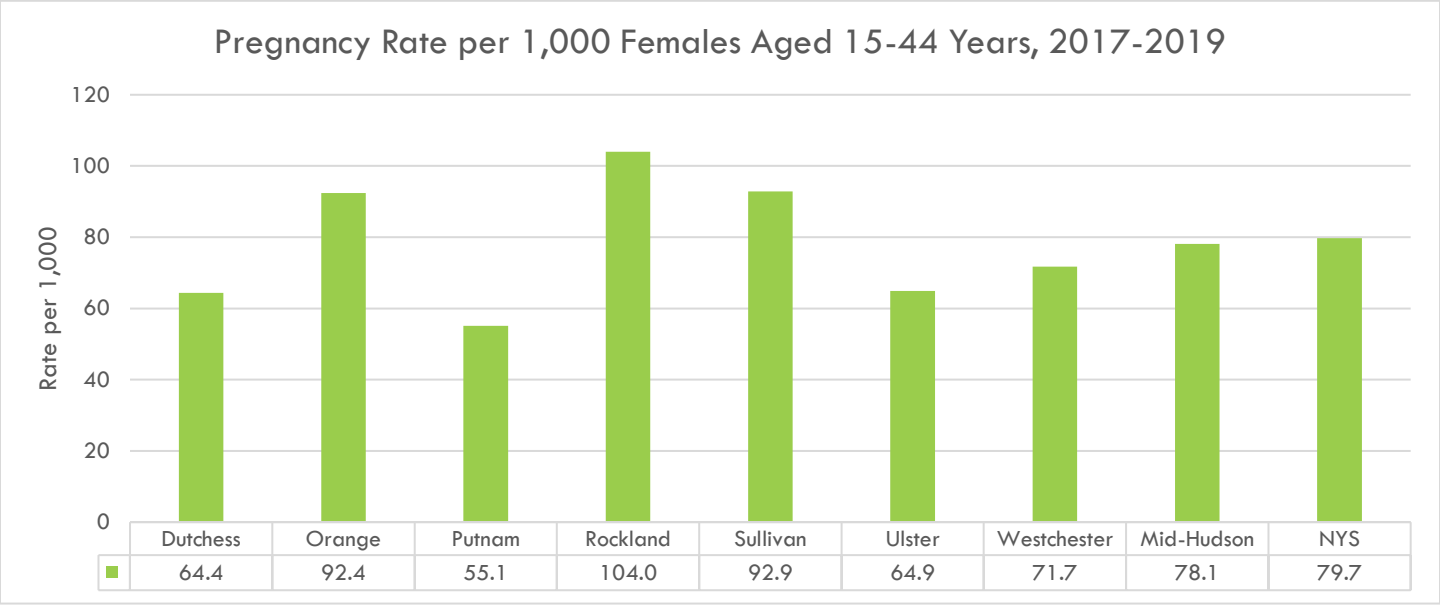
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	88.0%	77.3%	90.1%	77.2%	68.0%	75.5%	87.7%	81.8%	82.2%
Non-Hispanic Black	77.7%	64.6%	84.5%	66.8%	71.1%	62.8%	70.4%	69.2%	65.2%
Hispanic	79.7%	64.7%	80.5%	66.6%	68.2%	66.5%	78.1%	73.2%	70.7%

Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

ALL PREGNANCIES BY AGE GROUP

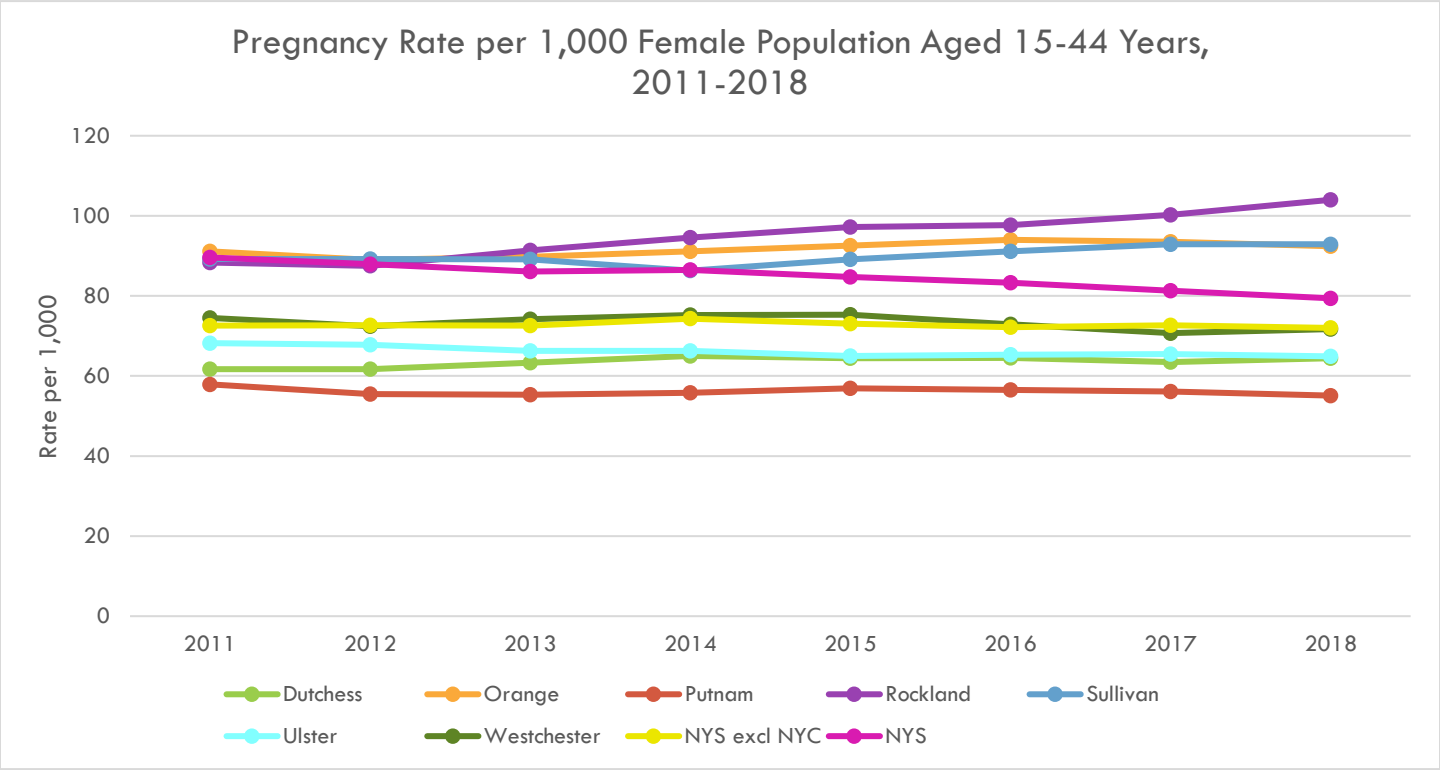
Among women aged 15 to 44 years, the pregnancy rate in the M-H Region was 78.1 per 1,000 females, which was lower than NYS (79.7 per 1,000 females). Rockland County had the highest pregnancy rate (104.0 per 1,000 females), followed by Sullivan County and Orange County (92.9 and 92.4 per 1,000 females, respectively). The lowest pregnancy rate was in Putnam County (55.1 per 1,000 females) [see Figure 287].

Figure 287



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Fb10

Figure 288

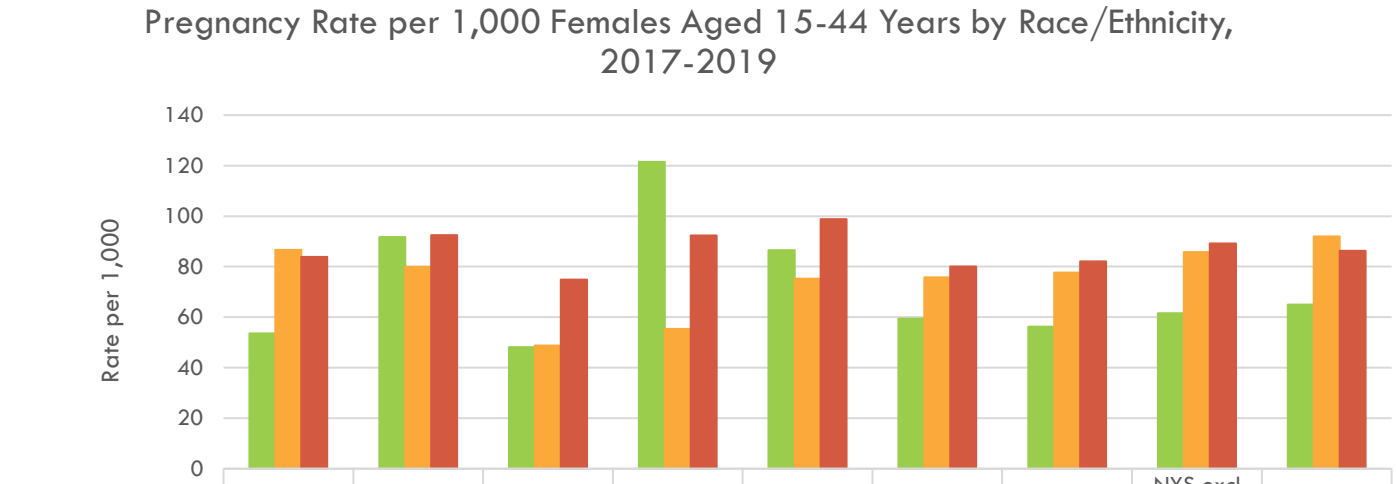


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	61.7	91.1	57.9	88.3	89.2	68.2	74.5	72.6	89.6
2012	61.7	89.0	55.5	87.5	89.2	67.8	72.4	72.7	87.9
2013	63.3	89.8	55.3	91.4	89.1	66.3	74.2	72.6	86.1
2014	65.0	91.1	55.8	94.6	86.3	66.3	75.2	74.3	86.5
2015	64.4	92.6	56.9	97.2	89.1	65.0	75.3	73.1	84.7
2016	64.5	94.0	56.5	97.7	91.1	65.3	72.9	72.2	83.3
2017	63.5	93.5	56.1	100.2	92.9	65.5	70.7	72.7	81.3
2018	64.4	92.4	55.1	104.0	92.9	64.9	71.7	72.0	79.4

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Fb10

Among women aged 15 to 44 years, the pregnancy rate varied by race/ethnicity in the M-H Region. Non-Hispanic White women had the highest pregnancy rates in Rockland, while having the lowest rates in Dutchess, Ulster, Putnam, and Westchester Counties, as well as NYS. Non-Hispanic Black women had the highest pregnancy rates in Dutchess County and NYS, while Hispanic women had the highest pregnancy rates in Orange, Putnam, Sullivan, and Westchester Counties [see Figure 289].

Figure 289



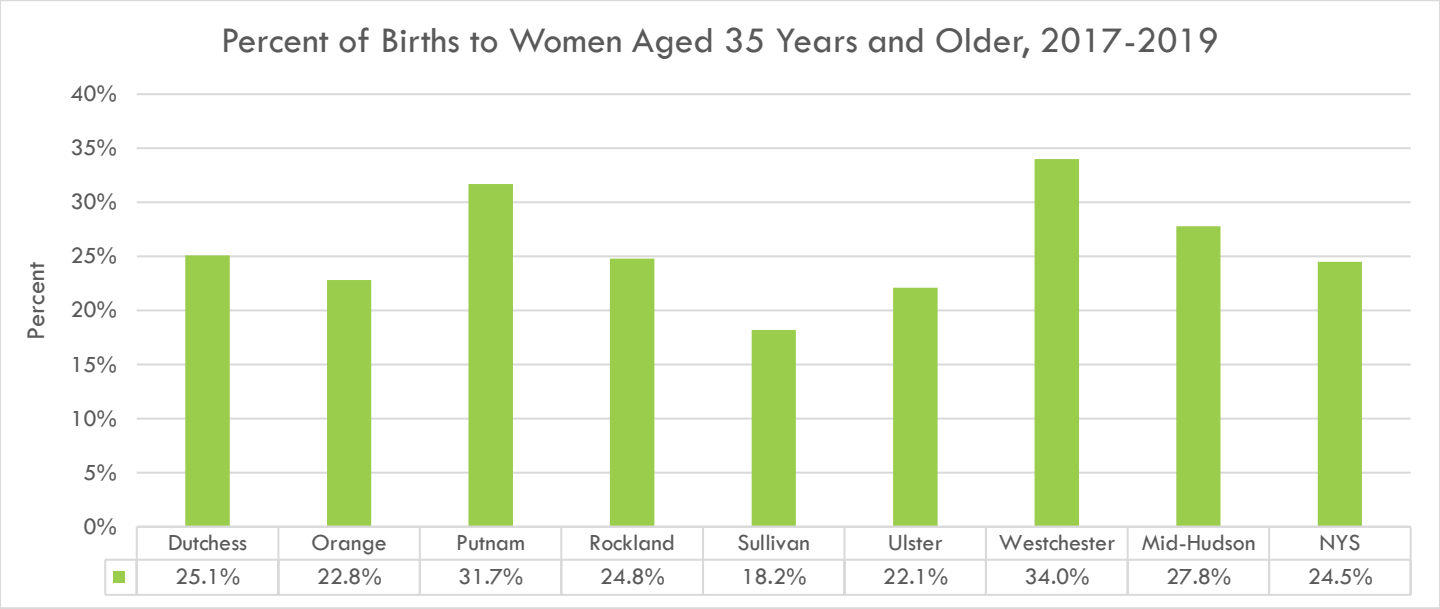
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	53.6	91.7	48.1	121.5	86.5	59.4	56.2	61.6	65.0
Non-Hispanic Black	86.7	79.9	48.8	55.4	75.2	75.7	77.7	85.8	92.0
Hispanic	83.9	92.5	74.9	92.3	98.8	80.0	82.1	89.2	86.2

Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

BIRTHS TO WOMEN AGED 35 YEARS AND OLDER

Pregnant women aged 35 years and older are at a higher risk for certain complications or becoming pregnant with multiples.[219] Those over the age of 35 may also have a harder time getting pregnant, requiring fertility treatments. Women aged 35 years and older who become pregnant may be more likely to develop health conditions, such as gestational diabetes and preeclampsia. These health conditions can cause problems during pregnancy, including premature birth, low birthweight, birth defects such as Down syndrome, miscarriage, stillbirth, and needing a cesarean section (C-section). Those aged 35 years and older are recommended to have additional prenatal testing done to assess whether their baby is at risk for certain birth defects. In the M-H Region, 27.8% of births were to women aged 35 years and older. Westchester County had the highest percentage of births to women over the age of 35 (34.0%), while Sullivan County had the lowest percentage (18.2%) [see Figure 290].

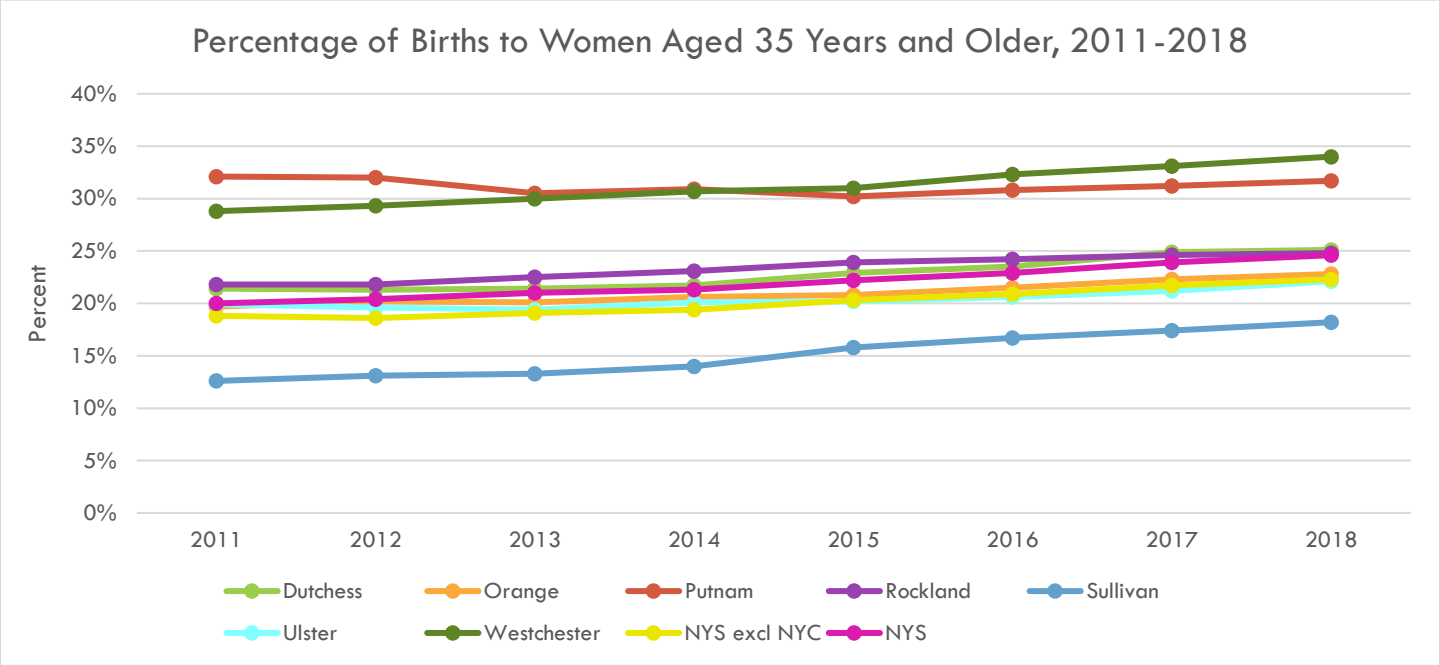
Figure 290



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Fb4

[219] March of Dimes, 2020, https://www.marchofdimes.org/complications/pregnancy-after-age-35.aspx, accessed May 2022

Figure 291



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	21.4%	19.7%	32.1%	21.8%	12.6%	19.9%	28.8%	18.8%	20.0%
2012	21.3%	20.2%	32.0%	21.8%	13.1%	19.6%	29.3%	18.6%	20.4%
2013	21.4%	20.1%	30.5%	22.5%	13.3%	19.4%	30.0%	19.1%	21.0%
2014	21.7%	20.6%	30.9%	23.1%	14.0%	20.1%	30.7%	19.4%	21.3%
2015	22.9%	20.8%	30.2%	23.9%	15.8%	20.2%	31.0%	20.3%	22.2%
2016	23.5%	21.5%	30.8%	24.2%	16.7%	20.6%	32.3%	20.9%	22.9%
2017	24.9%	22.3%	31.2%	24.6%	17.4%	21.2%	33.1%	21.7%	23.9%
2018	25.1%	22.8%	31.7%	24.8%	18.2%	22.1%	34.0%	22.3%	24.6%

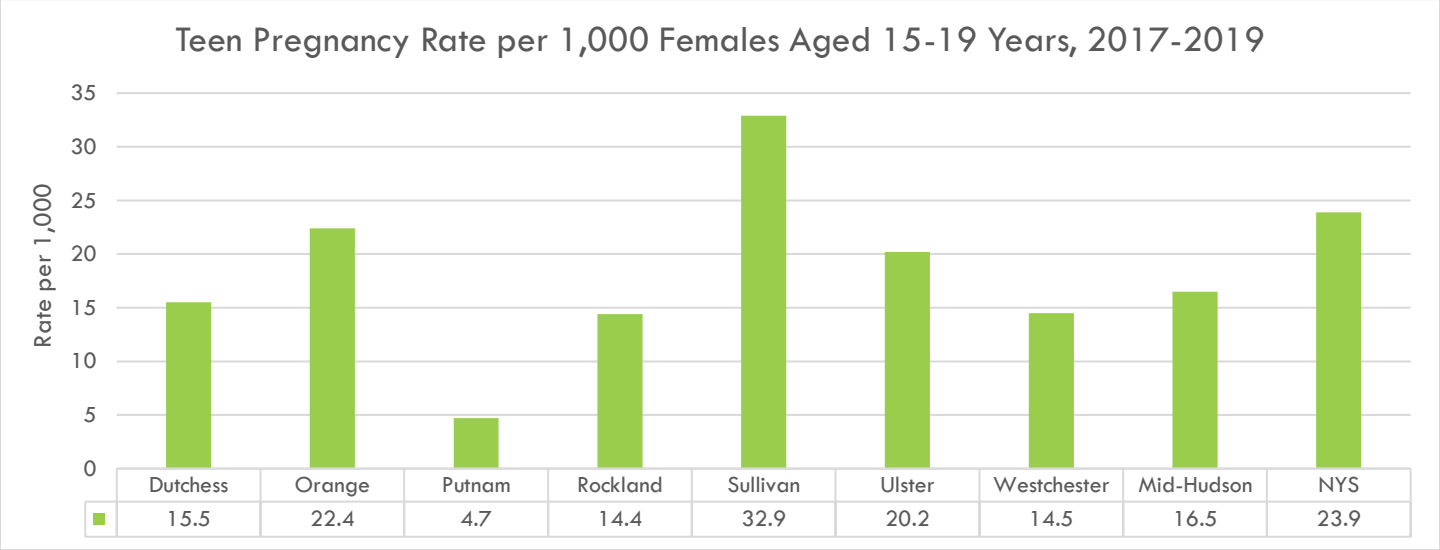
Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Fb4

ADOLESCENT PREGNANCY

Teen pregnancy is currently at historic lows in NYS and progress is being made nationwide.[220] Evidence suggests that this decline in NYS may be attributable to teens abstaining from sexual activity and more sexually active teens are using birth control. Despite this progress, the teen pregnancy rate in the US is substantially higher than any other western industrialized nation. Poorer socioeconomic status conditions, such as lower education and lower income level, may contribute to higher rates of teen pregnancy. Teens in child welfare systems are also more likely to experience teen pregnancy. Teen pregnancy is a significant contributor to high school dropout rates. In the US, 50% of teen mothers graduate high school by age 22, while 90% of women who did not give birth during adolescence received a high school diploma. The children of teenage mothers are more likely to have lower school achievement and drop out of high school, have more health problems, become incarcerated at some point during adolescence, give birth as a teenager, and experience unemployment as an adult.[220]

The overall rate for pregnancy in teens aged 15 to 19 years for the M-H Region was lower than NYS (16.5 per 1,000 vs. 23.9 per 1,000, respectively). Sullivan County had the highest pregnancy rate among teens aged 15 to 19 years in the M-H Region (32.9 per 1,000) [see Figure 292]. This rate has been decreasing statewide from 2011 to 2018 [see Figure 293].

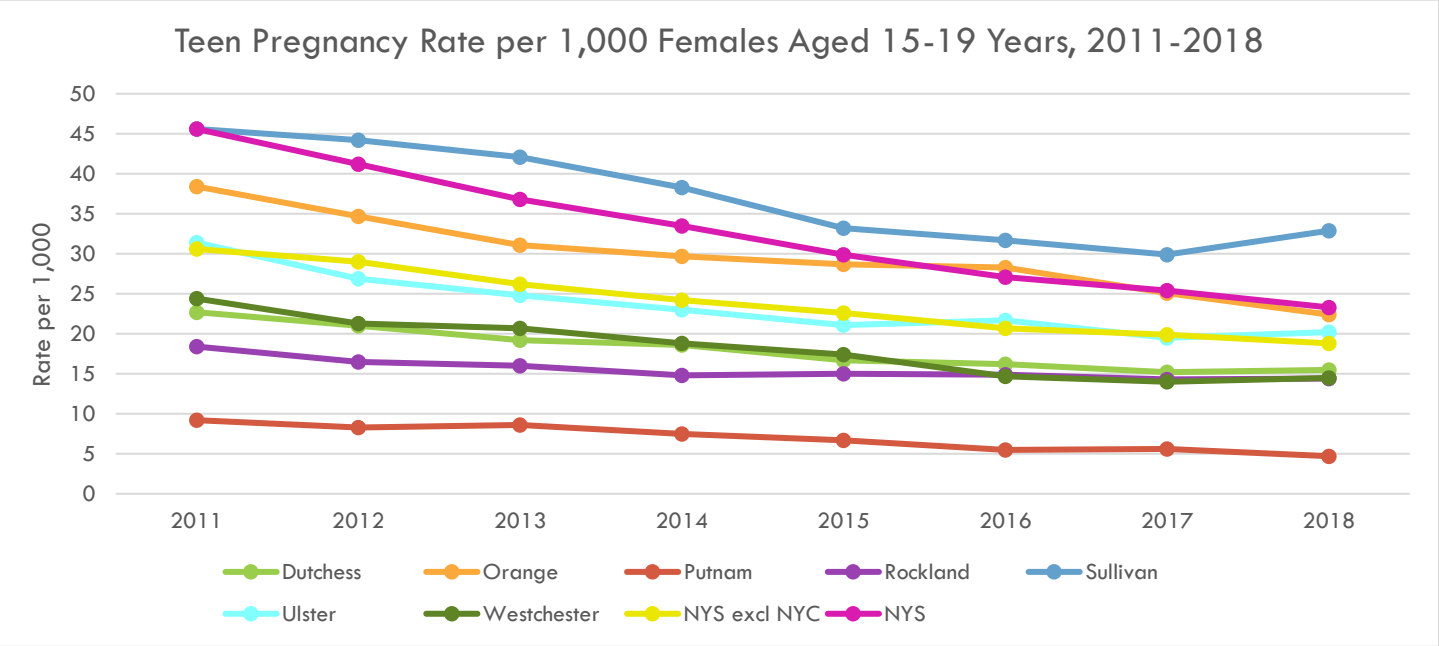
Figure 292



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Fb13

[220] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/teenpregnancy/about/index.htm, accessed June 2022

Figure 293

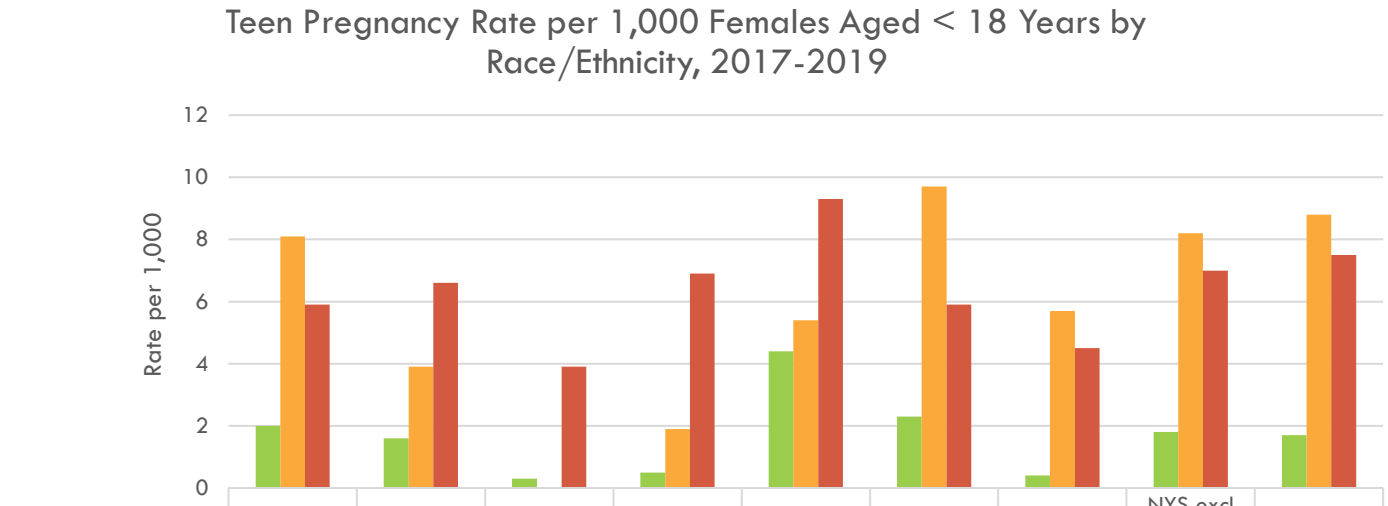


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	22.7	38.4	9.2	18.4	45.6	31.4	24.4	30.6	45.6
2012	21.0	34.7	8.3	16.5	44.2	26.9	21.3	29.0	41.2
2013	19.2	31.1	8.6	16.0	42.1	24.8	20.7	26.2	36.8
2014	18.6	29.7	7.5	14.8	38.3	23.0	18.8	24.2	33.5
2015	16.7	28.7	6.7	15.0	33.2	21.1	17.4	22.6	29.9
2016	16.2	28.3	5.5	14.9	31.7	21.7	14.7	20.7	27.1
2017	15.2	25.1	5.6	14.3	29.9	19.5	14.0	19.9	25.4
2018	15.5	22.4	4.7	14.4	32.9	20.2	14.5	18.8	23.3

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Fb13

There are racial/ethnic disparities in teen pregnancy, with non-Hispanic Black teens experiencing the highest rates of teen pregnancy in Dutchess, Ulster, and Westchester Counties, as well as NYS. Hispanic teens had the highest teen pregnancy rates in Orange, Rockland, and Sullivan Counties. Non-Hispanic White teens experienced the lowest rate of teen pregnancy in NYS [see Figure 294]. These rates are below Healthy People 2020's target of reducing pregnancies among adolescent females aged 15 to 17 years to 36.2 teen pregnancies per 1,000 adolescent females.[221]

Figure 294



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	2.0	1.6	0.3 *	0.5	4.4	2.3	0.4	1.8	1.7
Non-Hispanic Black	8.1	3.9	0.0 *	1.9	5.4 *	9.7	5.7	8.2	8.8
Hispanic	5.9	6.6	3.9	6.9	9.3	5.9	4.5	7.0	7.5

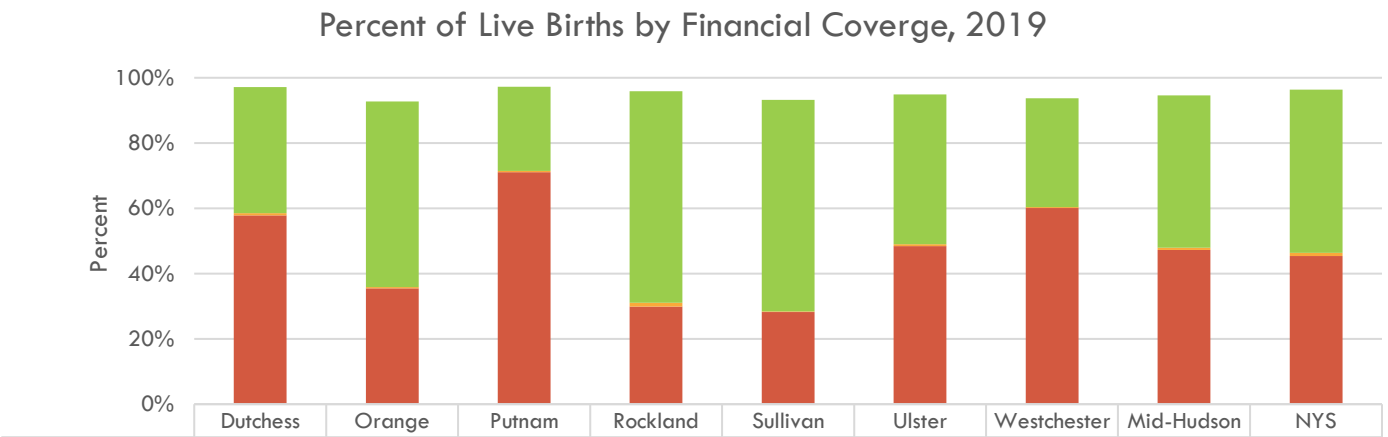
*: *The rate or percentage is unstable.*
Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

[221] Healthy People 2020, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://www.healthypeople.gov/2020/topics-objectives/topic/family-planning/objectives, accessed June 2022

SELF-PAY OR MEDICAID BIRTHS / PREGNANCIES

Most births in the M-H Region were covered by private insurance or Medicaid. In 2019, a majority of the births in Dutchess, Putnam, Ulster, and Westchester Counties were covered by private insurance, while Medicaid was used more frequently to cover births in Orange, Rockland, and Sullivan Counties. In NYS, half of the births were covered by Medicaid. In each county and in NYS, a small percentage of births were self-pay.

Figure 295



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
Medicaid	38.6%	56.8%	25.7%	64.8%	64.8%	45.9%	33.3%	46.7%	50.0%
Self-pay	0.7%	0.4%	0.4%	1.2%	0.2%	0.6%	0.3%	0.6%	1.0%
Private insurance	57.8%	35.5%	71.1%	29.9%	28.2%	48.4%	60.1%	47.3%	45.4%

Note: Other forms of coverage not shown include Indian Health, CHAMPUS, Other, and Not Stated.
Medicaid includes births with Medicaid listed as secondary payer.
Source: NYSDOH Vital Statistics, 2019
https://www.health.ny.gov/statistics/vital_statistics/2019/table13.htm

ADVERSE BIRTH OUTCOMES

PRETERM BIRTHS

Preterm birth is when a mother gives birth to a baby more than three weeks before its due date. Preterm babies, especially those born very early, often have medical complications. While these complications may vary, typically the more premature a baby is, the higher the risk for complications.[222] Risk factors for premature birth include pregnancy with twins, triplets, or other multiples; conceiving through in-vitro fertilization; smoking cigarettes or using illicit drugs; certain infections, especially those of the amniotic fluid and lower genital tract; certain chronic conditions, such as high blood pressure or diabetes; stressful life events; physical injury or trauma; and an interval of less than six months between pregnancies. While the preterm birth rate declined 1% nationwide in 2020, racial and ethnic differences in preterm birth rates remain. In 2020, the rate of preterm birth among Black women in the US was about 50% higher than the rate of preterm birth among White or Hispanic women.[223]

Short-term complications of premature birth may include problems with the blood, heart, brain, gastrointestinal system, and immune system. Additionally, there may be further complications with breathing, metabolism, and

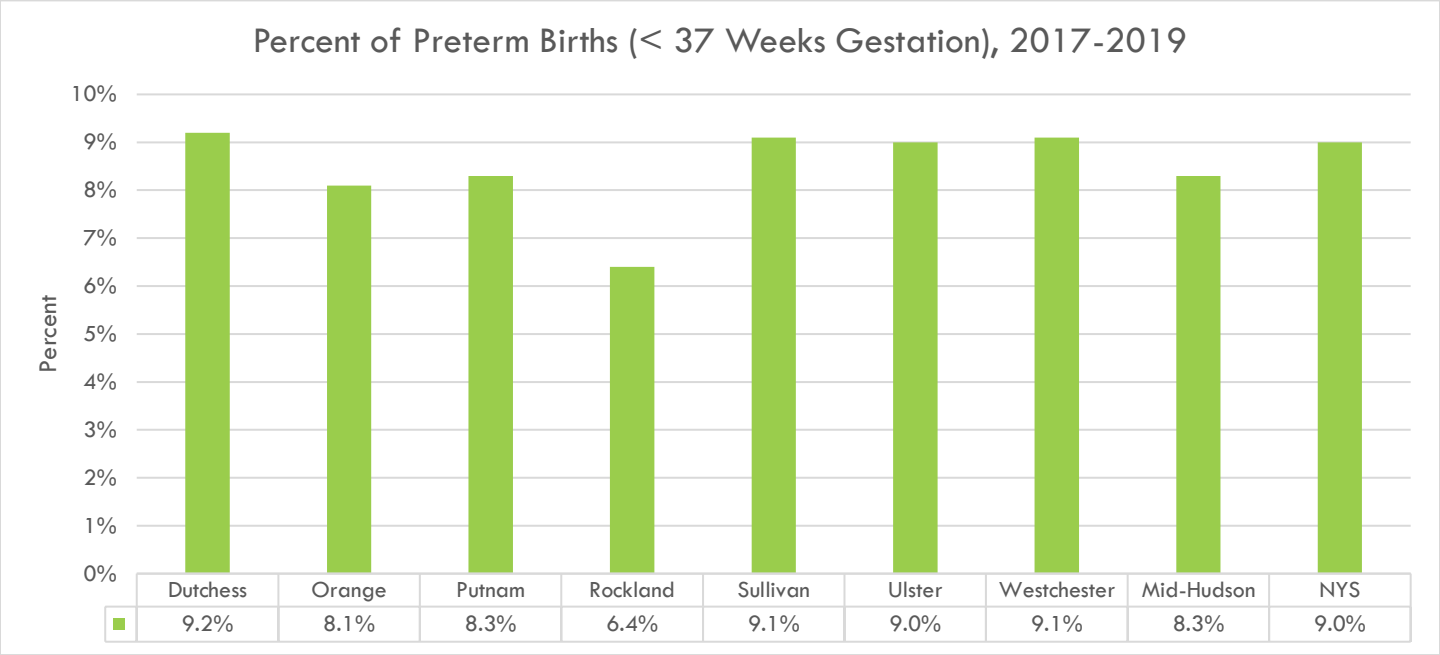
[222] Mayo Clinic, 2021, https://www.mayoclinic.org/diseases-conditions/premature-birth/symptoms-causes/syc-20376730, accessed May 2022

[223] Centers of Disease Control and Prevention, 2021, https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pretermbirth.htm, accessed June 2022

temperature control. Long-term complications of premature birth may include vision, hearing, dental, behavioral, and psychological problems. Additionally, complications may include cerebral palsy, impaired learning, and other chronic health issues.[224]

Healthy People 2020 set an objective to reduce the total number of preterm births to 9.4%. The M-H Region met this target with only 8.3% of births being preterm [see Figure 296]. Rockland County had the lowest rate of preterm births (6.4%), while Dutchess, Sullivan, and Westchester Counties had the highest rates (9.2%, 9.1%, and 9.1%, respectively), but all still fell under the target goal. The percentage of preterm births has generally remained stable over time; Sullivan County saw a slight decrease, while Ulster County saw a slight increase in the percentage of preterm births between 2011 and 2017 [see Figure 297].

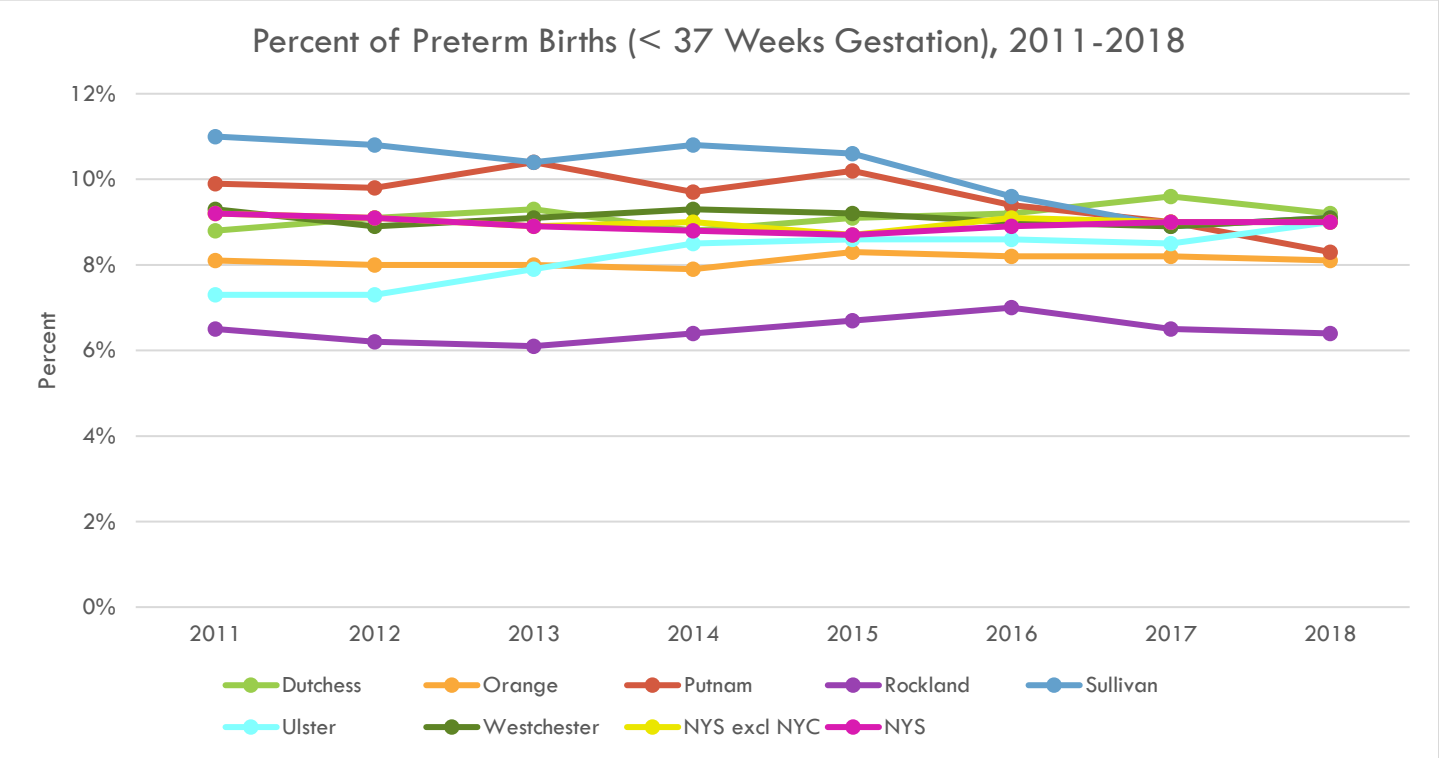
Figure 296



Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=lb43

[224] Mayo Clinic, 2021, https://www.mayoclinic.org/diseases-conditions/premature-birth/symptoms-causes/syc-20376730, accessed May 2022

Figure 297



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	8.8%	8.1%	9.9%	6.5%	11.0%	7.3%	9.3%	9.2%	9.2%
2012	9.1%	8.0%	9.8%	6.2%	10.8%	7.3%	8.9%	9.1%	9.1%
2013	9.3%	8.0%	10.4%	6.1%	10.4%	7.9%	9.1%	8.9%	8.9%
2014	8.8%	7.9%	9.7%	6.4%	10.8%	8.5%	9.3%	9.0%	8.8%
2015	9.1%	8.3%	10.2%	6.7%	10.6%	8.6%	9.2%	8.7%	8.7%
2016	9.2%	8.2%	9.4%	7.0%	9.6%	8.6%	9.0%	9.1%	8.9%
2017	9.6%	8.2%	9.0%	6.5%	8.9%	8.5%	8.9%	9.0%	9.0%
2018	9.2%	8.1%	8.3%	6.4%	9.1%	9.0%	9.1%	9.0%	9.0%

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=lb43

LOW BIRTHWEIGHT BIRTHS

Low birthweight (LBW) describes babies born weighing less than 2.5 kilograms (5 pounds, 8 ounces). Over eight percent of all births in the US are LBW and this percentage is increasing.[225] This is thought to be a result of an increased number of babies born prematurely in multiples. The primary cause of LBW is preterm birth. Preterm birth means a baby has less time in a mother's uterus to grow and gain weight. Another cause of LBW is intrauterine growth restriction (IUGR). IUGR occurs when a baby does not grow adequately during pregnancy due to problems with the placenta, the mother's health, or the baby's condition. Babies with IUGR may be born at full term, but still have LBW.

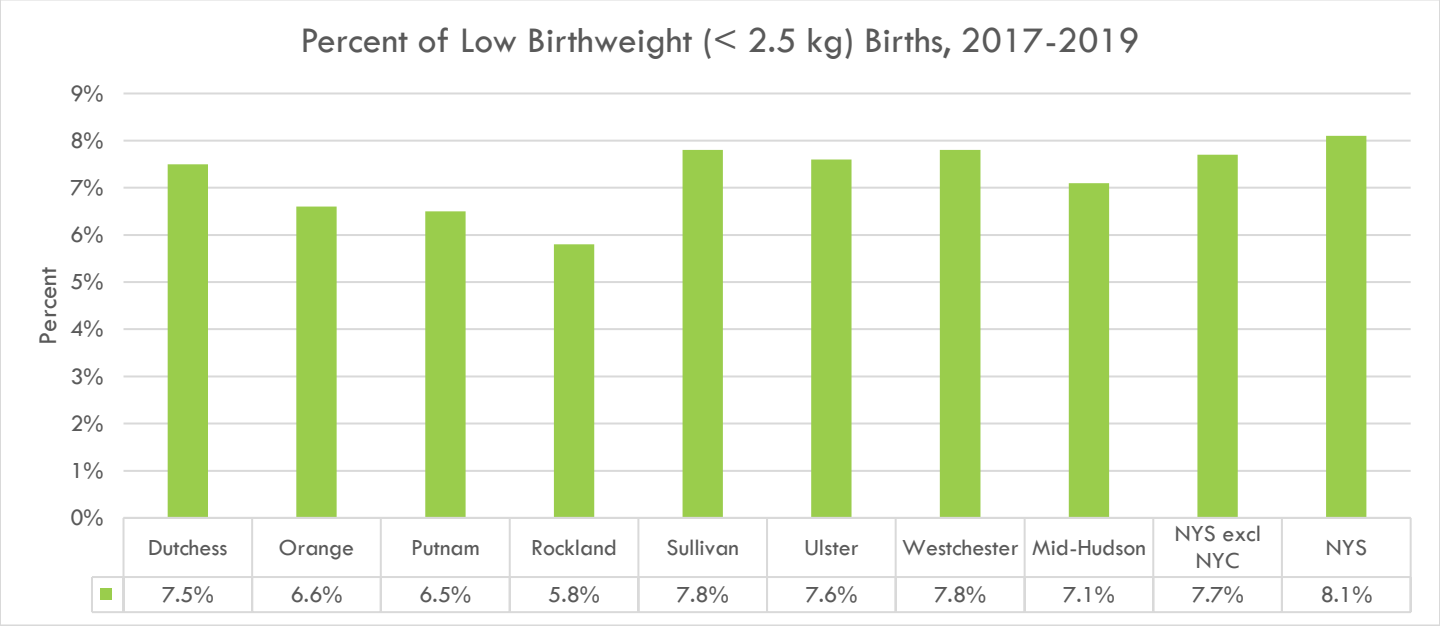
[225] Children's Hospital of Philadelphia, https://www.chop.edu/conditions-diseases/low-birthweight, accessed May 2022

There are different risk factors that can contribute to a baby being born with LBW. Non-Hispanic Black babies are two times more likely to have a LBW than non-Hispanic White babies. Babies born to teen mothers have a higher risk of having LBW as well. Babies born in multiples are at an increased risk because they are often preterm. The health of the mother may also contribute to risk of LBW due to the mother's exposure to alcohol, cigarettes, and illicit drugs. Babies born to mothers of low socioeconomic status are also at a higher risk of being born with a LBW due to poor nutrition, inadequate prenatal care, and pregnancy complications.[226]

Babies with LBW have a higher risk of complications. They may have a harder time eating, gaining weight, controlling their body temperature, and fighting infections. Because many babies with LBW are also premature, it can be difficult to tell which problems are due to the premature birth and which problems are due to LBW.[227] Generally, the lower the birthweight, the greater the risk for complications.

Healthy People 2020 set a target of no more than 7.8% of births resulting in LBW. NYS and the M-H Region both fell below this mark (6.3% and 7.1%, respectively). All counties in the M-H Region met the Healthy People 2020 goal, with Sullivan County having the highest percentage at 7.8% and still meeting the Healthy People 2020 target [see Figure 298]. Over time, there has not been a significant change in the percentage of LBW births from 2011 to 2018 [see Figure 299].

Figure 298

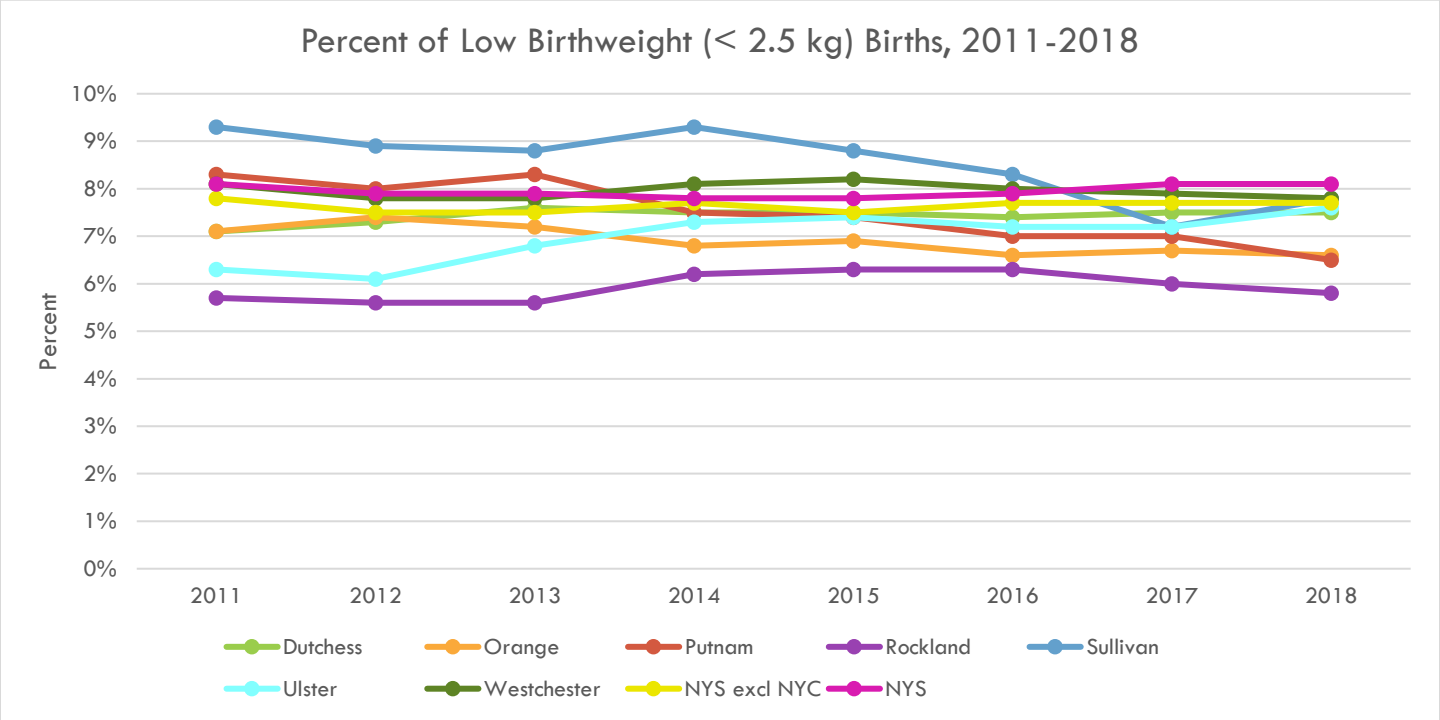


Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=lb36

[226] Children's Hospital of Philadelphia, https://www.chop.edu/conditions-diseases/low-birthweight, accessed May 2022

[227] Children's Hospital of Philadelphia, https://www.chop.edu/conditions-diseases/low-birthweight, accessed May 2022

Figure 299

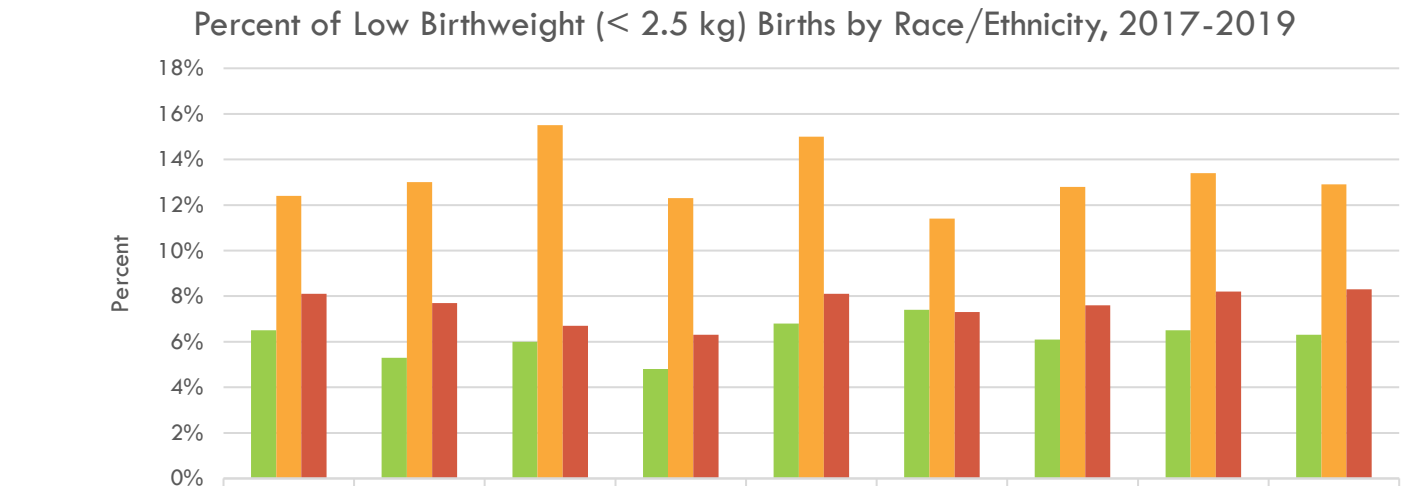


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	7.1%	7.1%	8.3%	5.7%	9.3%	6.3%	8.1%	7.8%	8.1%
2012	7.3%	7.4%	8.0%	5.6%	8.9%	6.1%	7.8%	7.5%	7.9%
2013	7.6%	7.2%	8.3%	5.6%	8.8%	6.8%	7.8%	7.5%	7.9%
2014	7.5%	6.8%	7.5%	6.2%	9.3%	7.3%	8.1%	7.7%	7.8%
2015	7.5%	6.9%	7.4%	6.3%	8.8%	7.4%	8.2%	7.5%	7.8%
2016	7.4%	6.6%	7.0%	6.3%	8.3%	7.2%	8.0%	7.7%	7.9%
2017	7.5%	6.7%	7.0%	6.0%	7.2%	7.2%	7.9%	7.7%	8.1%
2018	7.5%	6.6%	6.5%	5.8%	7.8%	7.6%	7.8%	7.7%	8.1%

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=lb36

There are also disparities in race/ethnicity regarding low birthweight births. In the M-H Region, non-Hispanic Black women consistently had higher percentages of pregnancies resulting in LBW births, followed by Hispanic women [see Figure 300].

Figure 300



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
Non-Hispanic White	6.5%	5.3%	6.0%	4.8%	6.8%	7.4%	6.1%	6.5%	6.3%
Non-Hispanic Black	12.4%	13.0%	15.5%	12.3%	15.0%	11.4%	12.8%	13.4%	12.9%
Hispanic	8.1%	7.7%	6.7%	6.3%	8.1%	7.3%	7.6%	8.2%	8.3%

Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

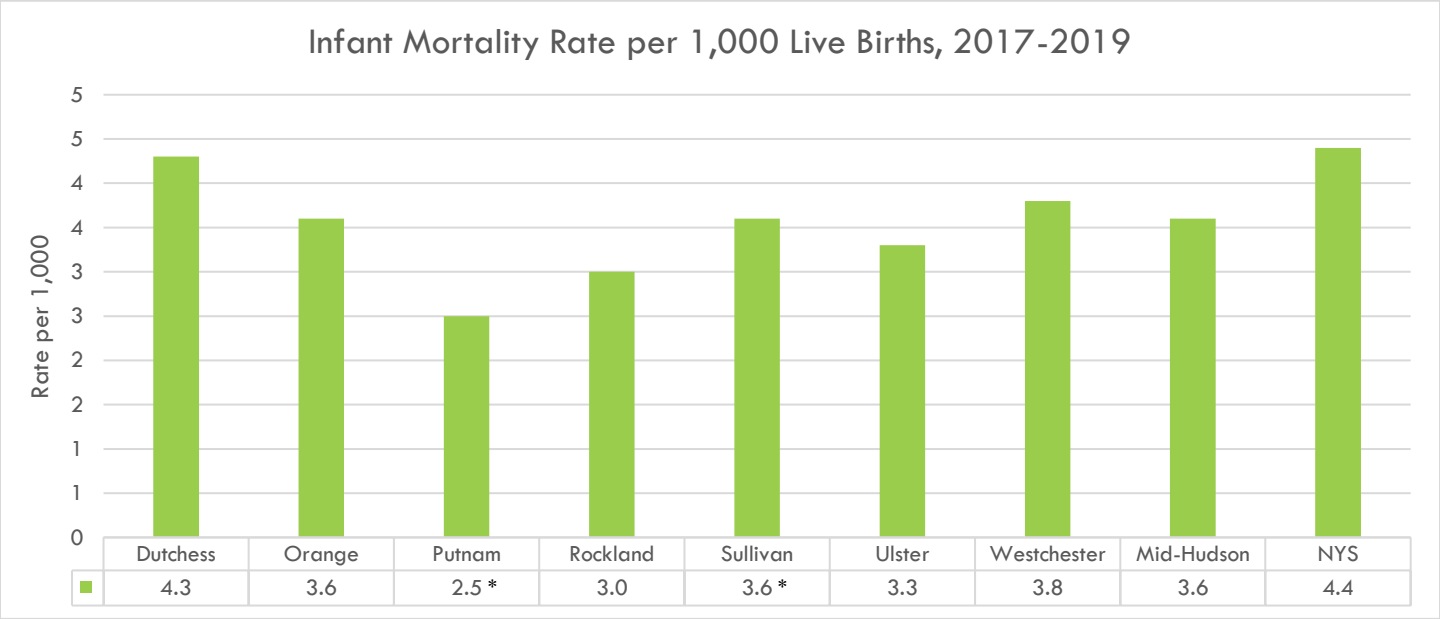
INFANT MORTALITY

Infant mortality is the death of an infant before their first birthday. It is an important indicator of both maternal and infant health, as well as the overall health of a society.[228] The five leading causes of infant mortality in the US in 2018 were birth defects, preterm birth and low birthweight, injuries, sudden infant death syndrome, and maternal pregnancy complications.

One of the objectives of Healthy People 2020 was to reduce the rate of all infant deaths to no more than 6 infant deaths per 1,000 live births.[229] The risk of infant mortality can be reduced by increasing access to quality preconception, prenatal, and interconception care. Infant health is influenced by socioeconomic and behavioral variables such as education, family income, and breastfeeding, but it is also associated with the physical and mental health of an infant's parents and caregivers.

NYS has reached the goal set by Healthy People 2020 with 4.4 infant deaths per 1,000 live births. The M-H Region had a lower rate of 3.6 infant deaths per 1,000 live births. Dutchess County had the highest infant mortality rate (4.3 deaths per 1,000 live births). Putnam County had the lowest infant mortality rate in the M-H Region (2.5 deaths per 1,000 live births) [see Figure 301].

Figure 301



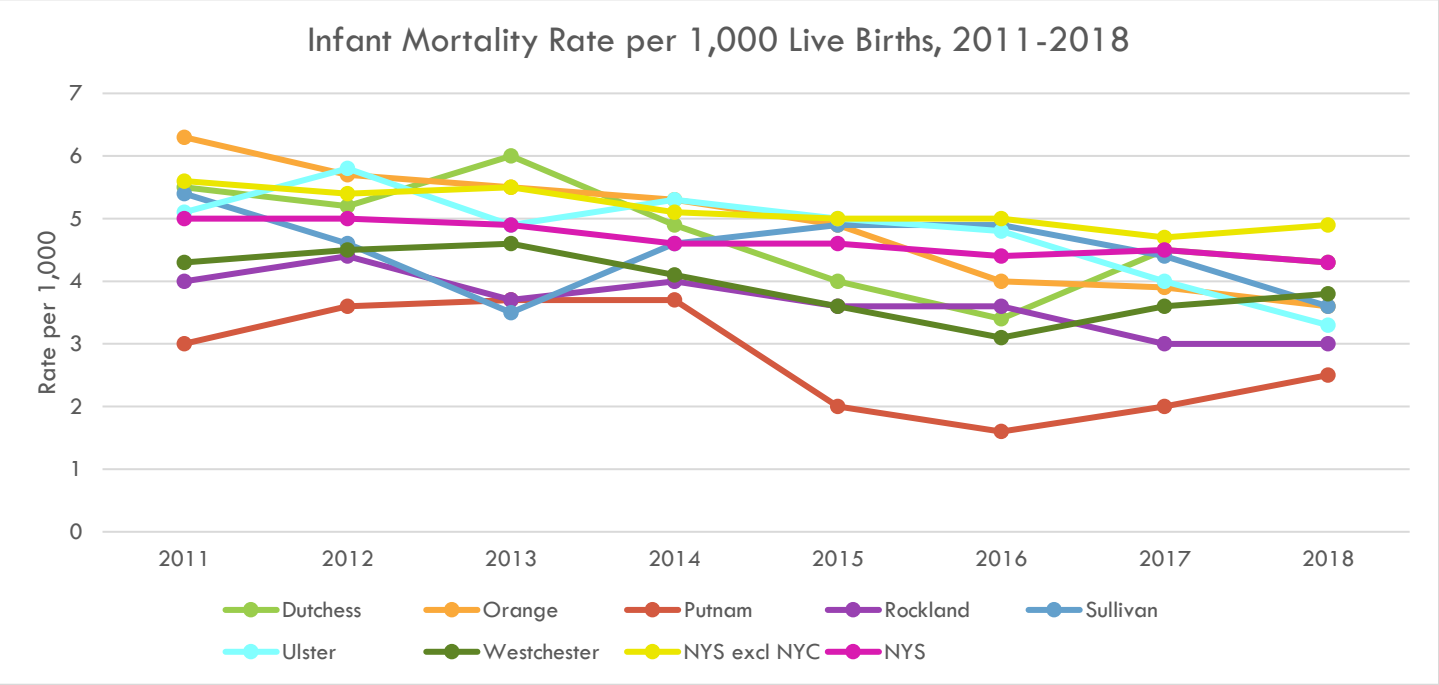
: Fewer than ten events in the numerator, therefore the rate is unstable.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=lb27

[228] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm, accessed May 2022

[229] Healthy People 2020, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives, accessed May 2022

Sullivan County's infant mortality rate spiked in 2016 but has decreased to rates similar to the rest of the counties in the M-H Region [see Figure 302]. Racial and ethnic disparities in mortality and morbidity occur in both mothers and infants; specifically, maternal morbidity and infant mortality is highest for non-Hispanic Black individuals.

Figure 302



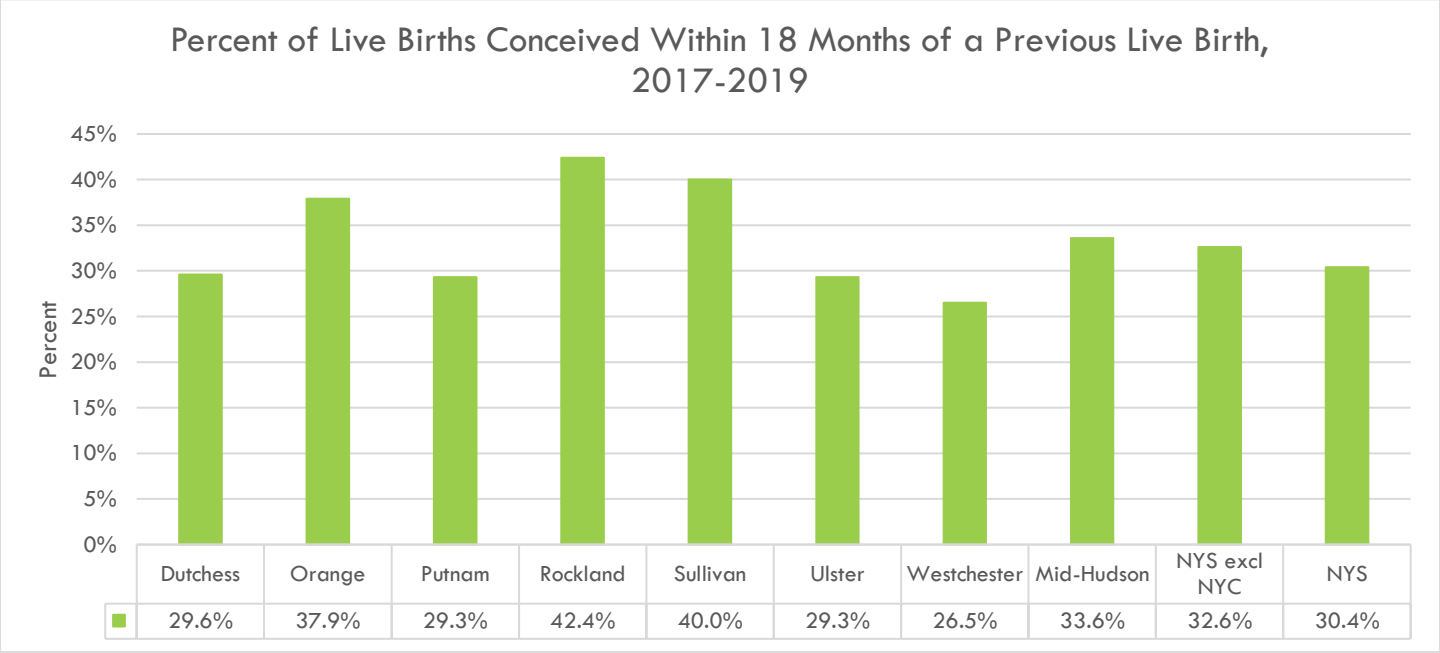
	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	5.5	6.3	3.0*	4.0	5.4	5.1	4.3	5.6	5.0
2012	5.2	5.7	3.6*	4.4	4.6	5.8	4.5	5.4	5.0
2013	6.0	5.5	3.7*	3.7	3.5*	4.9	4.6	5.5	4.9
2014	4.9	5.3	3.7*	4.0	4.6	5.3	4.1	5.1	4.6
2015	4.0	4.9	2.0*	3.6	4.9	5.0	3.6	5.0	4.6
2016	3.4	4.0	1.6*	3.6	4.9	4.8	3.1	5.0	4.4
2017	4.5	3.9	2.0*	3.0	4.4	4.0	3.6	4.7	4.5
2018	4.3	3.6	2.5*	3.0	3.6*	3.3	3.8	4.9	4.3

**: Fewer than 10 events in the numerator, therefore the rate/percentage is unstable.*
Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=lb27

LIVE BIRTHS CONCEIVED WITHIN 18 MONTHS OF A PREVIOUS LIVE BIRTH

Adequate timing and spacing between pregnancies help women and families make more informed decisions about delaying, spacing, or limiting their pregnancies to achieve the healthiest outcomes for the whole family. Birth spacing refers to the time from one child's birth until the next pregnancy. Pregnancies that start less than 18 months after birth are associated with delayed prenatal care and adverse birth outcomes, including preterm birth, neonatal morbidity, and low birthweight.[230] Healthy People 2020 uses 18 months as the ideal spacing between pregnancies.[231] Healthy People 2020 set an objective to reduce the number pregnancies conceived within 18 months of a previous birth to 29.8%. The M-H Region and NYS were both just higher than the target with a 33.6% and 30.4% rate, respectively. Rockland County had the highest rate of births conceived within 18 months of a previous pregnancy at 42.4%, closely followed by Sullivan and Orange Counties (40.0% and 37.9%, respectively). Westchester had the lowest percentage (26.5%) while Dutchess (29.6%), Putnam (29.3%), and Ulster (29.3%) all were just under the target rate [see Figure 303]. The rates of pregnancy within 18 months of a previous birth have remained steady across the M-H Region and NYS [see Figure 304].

Figure 303

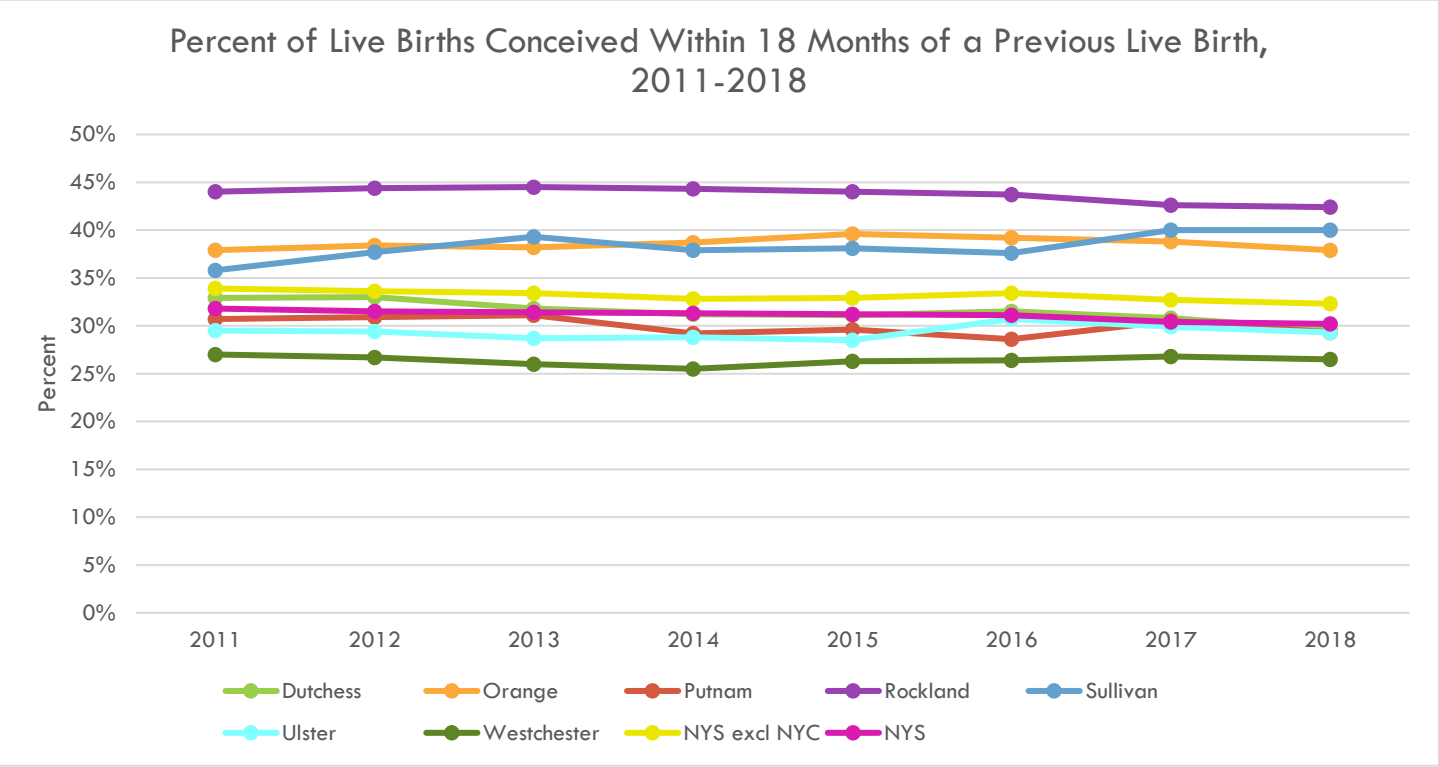


Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Fb1

[230] March of Dimes, https://www.marchofdimes.org/MOD-Birth-Spacing-Factsheet-November-2015.pdf, accessed June 2022

[231] Healthy People 2020, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://www.healthypeople.gov/2020/topics-objectives/topic/family-planning/objectives, accessed June 2022

Figure 304



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	32.9%	37.9%	30.7%	44.0%	35.8%	29.5%	27.0%	33.9%	31.8%
2012	33.0%	38.4%	30.9%	44.4%	37.7%	29.4%	26.7%	33.6%	31.5%
2013	31.8%	38.2%	31.1%	44.5%	39.3%	28.7%	26.0%	33.4%	31.4%
2014	31.2%	38.7%	29.2%	44.3%	37.9%	28.8%	25.5%	32.8%	31.3%
2015	31.1%	39.6%	29.6%	44.0%	38.1%	28.5%	26.3%	32.9%	31.2%
2016	31.5%	39.2%	28.6%	43.7%	37.6%	30.7%	26.4%	33.4%	31.1%
2017	30.8%	38.8%	30.5%	42.6%	40.0%	29.9%	26.8%	32.7%	30.4%
2018	29.6%	37.9%	29.3%	42.4%	40.0%	29.3%	26.5%	32.3%	30.2%

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Fb1

WELL-CHILD VISITS

Childhood is a time of rapid growth and change. During this time, well-child visits to the pediatrician are important for tracking a child's growth and development. These visits typically begin a few days after birth and continue until age 18. In order to find or prevent problems, well-child visits should include a physical exam, which assesses a child's growth and development. During these visits, guardians should receive information regarding sleep, safety, childhood diseases, and what to expect as the child grows. The medical provider will also pay special attention to how a child is growing compared to typical developmental milestones. This is done by measuring a child's height, weight, and head circumference.[232]

[232] Medline Plus, https://medlineplus.gov/ency/article/001928.htm, accessed June 2022

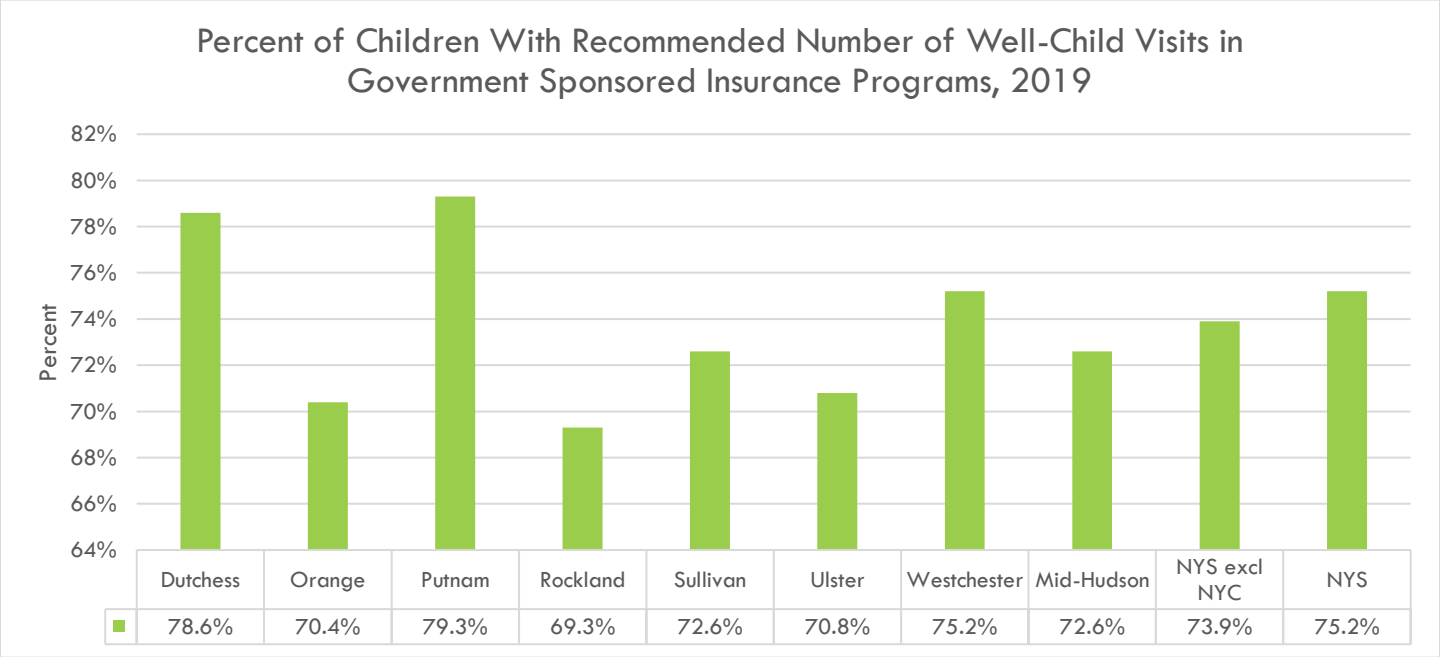
Another benefit of a well-child visit is the opportunity to talk about prevention. For many children, the most common cause of harm is preventable injury or illness. A well-child visit is an opportunity to review critical strategies to protect a child from injury, such as reviewing car seat use and safe firearm storage. The well-child visit is an opportunity to ensure a child is protected from infectious disease by reviewing and updating immunizations. If there is a family history of a particular illness, parents can discuss strategies to prevent that illness for their child. Healthy behaviors are important to instill at a young age and the well-child visit is a time to review these important behaviors such as sleep, nutrition, and physical activity.[233]

Well-child visits are also a good time to discuss family relationship issues, school, illness prevention, health and safety issues, and access to community services. During teenage years, these visits give adolescents an opportunity to take steps towards independence and responsibility over their own health behaviors. Adolescent visits provide an opportunity for teenagers to address important questions, including substance use, sexual behavior, and mental health concerns.[234] Other aspects of a well-child visit may include checking blood pressure, vision and hearing tests, blood work, and screening tests for anemia, lead exposure, or tuberculosis.

In 2019, 75.2% of children in government sponsored insurance programs had the recommended number of well-child visits in NYS. This was slightly higher than the M-H Region, where 72.6% of children received the recommended number of well-child visits. Putnam had the highest percentage of children who received the recommended number of well-child visits (79.3%), followed closely by Dutchess County at 78.6%. Rockland had the lowest percentage of children receiving the recommended number of well-child visits at 69.3%, followed by Orange (70.4%) and Ulster (70.8%) [see Figure 305].

From 2010 to 2019, there has been no considerable change in the numbers of children receiving the recommended number of well-child visits in the M-H Region or NYS [see Figure 306].

Figure 305

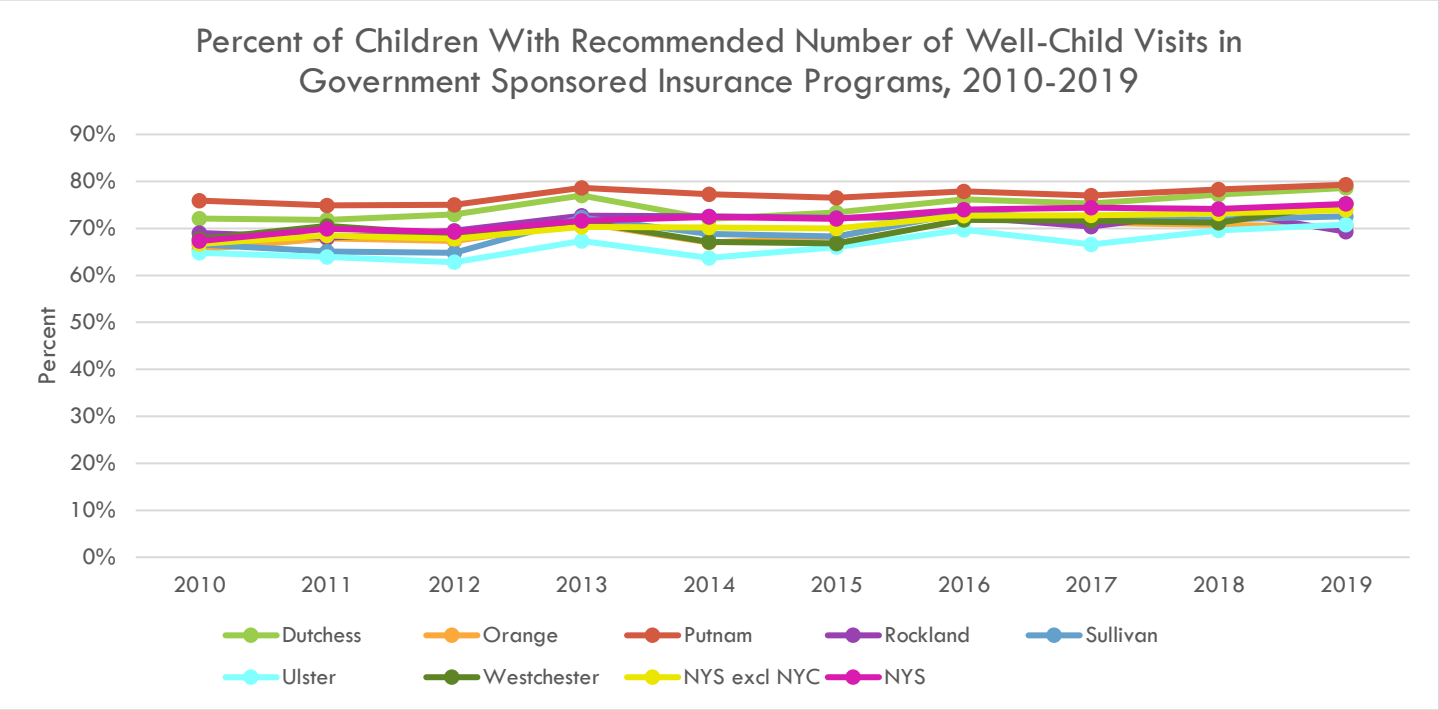


Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Cg112

[233] Journal of the American Medical Association, 2018, https://jamanetwork.com/journals/jamapediatrics/fullarticle/2661144, accessed June 2022

[234] Journal of the American Medical Association, 2018, https://jamanetwork.com/journals/jamapediatrics/fullarticle/2661144, accessed June 2022

Figure 306



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYS	NYS
2010	72.1%	65.5%	75.9%	69.0%	66.6%	64.8%	67.7%	66.7%	67.3%
2011	71.8%	67.9%	74.9%	68.0%	65.1%	63.9%	70.5%	68.5%	69.9%
2012	73.0%	67.3%	75.0%	69.5%	64.8%	62.8%	68.7%	67.8%	69.2%
2013	77.0%	71.2%	78.6%	72.7%	72.3%	67.3%	71.5%	70.3%	71.6%
2014	72.0%	67.0%	77.3%	72.6%	68.8%	63.7%	67.1%	70.2%	72.4%
2015	73.4%	68.2%	76.5%	72.2%	68.3%	66.0%	66.8%	70.0%	72.0%
2016	76.2%	73.6%	77.9%	72.5%	73.3%	69.7%	71.8%	72.7%	74.0%
2017	75.3%	71.2%	77.0%	70.4%	71.9%	66.6%	71.6%	72.8%	74.4%
2018	77.2%	70.7%	78.3%	73.8%	71.9%	69.6%	71.2%	73.2%	74.1%
2019	78.6%	70.4%	79.3%	69.3%	72.6%	70.8%	75.2%	73.9%	75.2%

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Cg112

ORAL HEALTH

Good oral health is an important part of attaining overall health. It enhances a person's ability to speak, smile, chew, taste, and make facial expressions. Oral diseases include mouth issues, such as caries (also known as cavities or tooth decay), gum disease, and oral cancers. Poor oral health has been linked to chronic diseases such as diabetes and heart disease. It has also been linked to lifestyle behaviors, including tobacco use and eating and drinking substances that have high sugar content. In the US, more than 90% of adults have had at least one cavity in their lifetime.[235] According to the CDC, the US spends more than $124 billion per year on dental care.

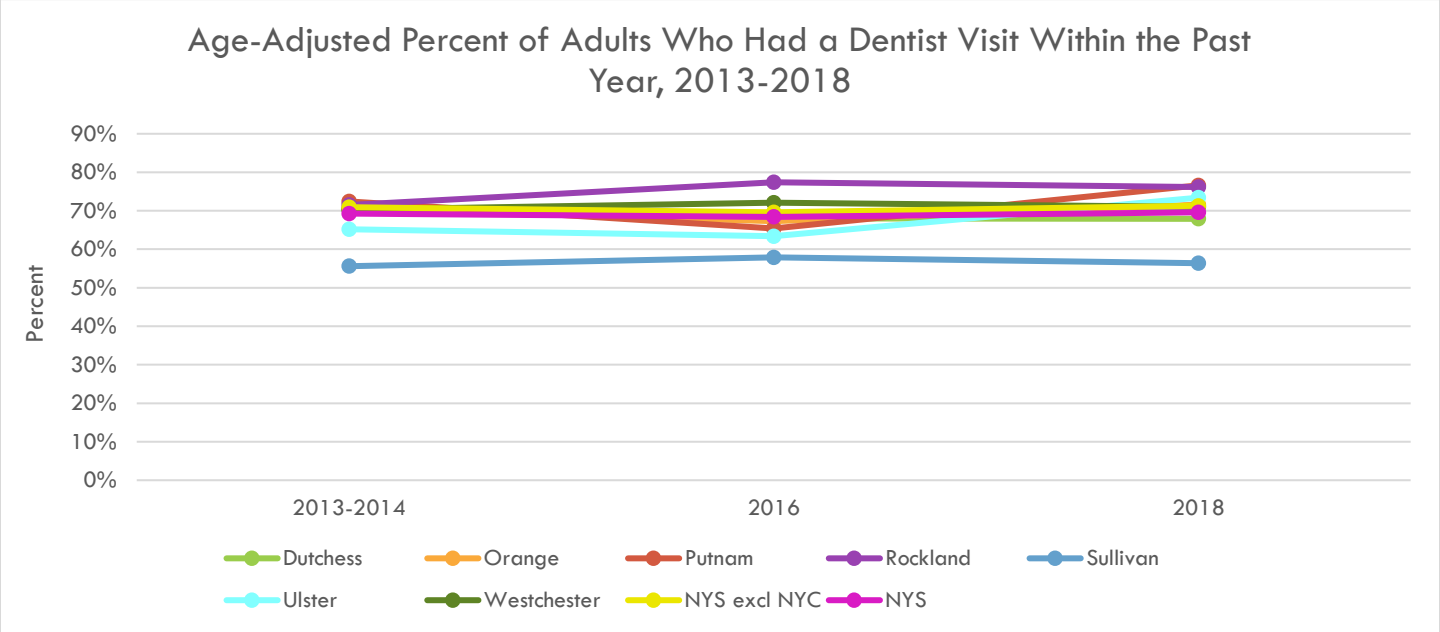
[235] Centers of Disease Control and Prevention, 2021, https://www.cdc.gov/oralhealth/basics/adult-oral-health/adult_older.htm, accessed June 2022

On average, more than $45 billion in productivity and more than 34 million school hours are lost because of dental emergencies requiring unplanned care.

The most common barriers to achieving good oral health include financial barriers, geographic location, lack of dental insurance, poor oral health literacy, and language, education, or cultural barriers.[236]

To combat poor oral health, people are encouraged to have a dental visit at least once a year for routine examination and cleaning. In 2018, 71.3% of adults in NYS excluding NYC had a dental visit within the past year. This is slightly higher than the NYS percentage of 69.6%. In the M-H Region, Putnam (76.6%) and Rockland (76.2%) had the highest rates while Sullivan had the lowest at 56.4%. Dutchess County (67.9%) was the only other county besides Sullivan to fall below the NYS percentage. Since 2013, the percentage of adults who had a dental visit within the past year has generally remained stable [see Figure 307].

Figure 307



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	70.4%	70.5%	72.4%	71.5%	55.6%	65.2%	70.3%	70.9%	69.3%
2016	68.0%	67.3%	65.4%	77.4%	57.9%	63.4%	72.1%	69.6%	68.4%
2018	67.9%	71.6%	76.6%	76.2%	56.4%	73.4%	71.0%	71.3%	69.6%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

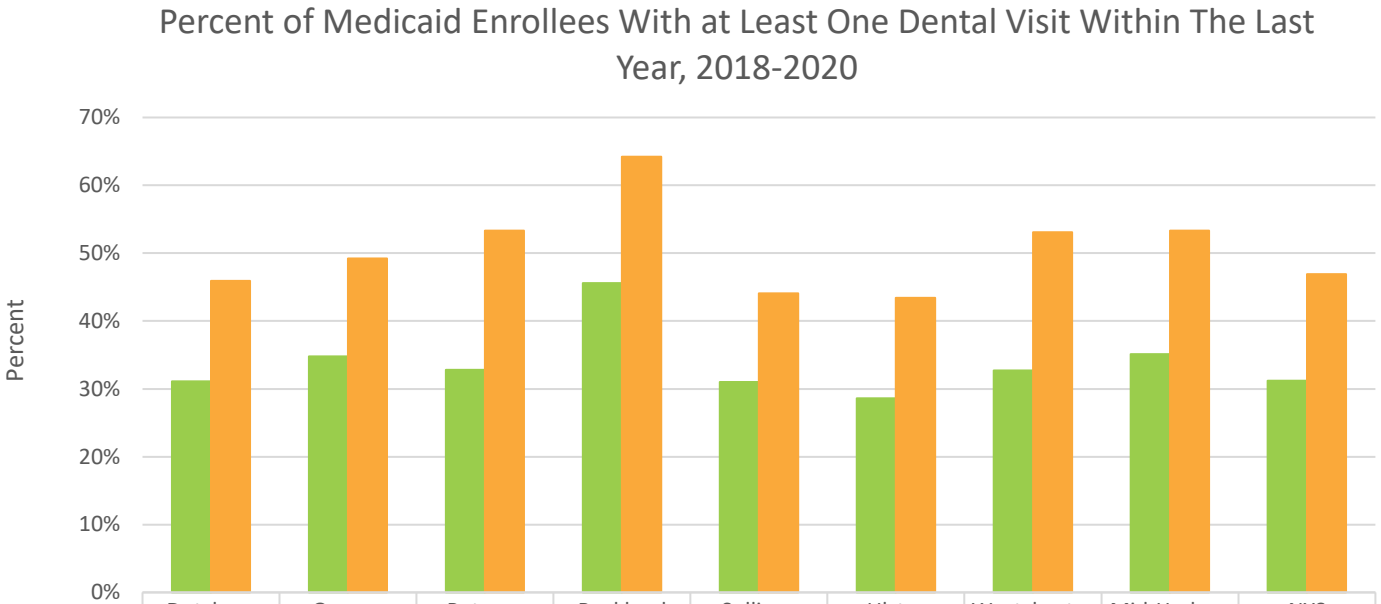
Dental care is harder to access for those who are low-income and cannot afford comprehensive dental coverage. Between 2019 and 2020, the percentage of adults who had a dental visit within the past 12 months decreased in all family income levels, but rates were lowest in households below the Federal Poverty Level with only 45.7% of adults in 2020 reporting a dental visit within the past 12 months.[237] This includes people enrolled in Medicaid insurance, where general health care coverage is limited, compared to those with private or other forms of insurance.

[236] American Student Dental Association, https://www.asdanet.org/index/get-involved/advocate/issues-and-legislative-priorities/Barriers-to-Care, accessed June 2022

[237] Centers for Disease Control and Prevention, US Department of Health and Human Services, 2022, https://www.cdc.gov/nchs/data/databriefs/db435.pdf, accessed June 2022

Compared to the overall population of Medicaid enrollees, those aged 2 to 20 years were more likely to visit their dentist within the last year. The M-H Region had a higher percentage of all Medicaid enrollees who have had a dentist visit within the last year compared to NYS (35.1% and 26.3%, respectively). Of the seven counties in the M-H Region, Rockland had the highest percentage of all enrollees (45.6%) and those aged 2 to 20 years old (64.2%) who had a dental visit within the past year. Five out of seven counties exceeded the NYS rate for all enrollees as well as enrollees aged 2 to 20 years having a dental visit within the past year [see Figure 308]. Percentages across the M-H Region remained steady until 2019, where each county saw a slight decrease. The 2019 data, a three-year average including data from 2020, could indicate a decrease in dental visits due to COVID-19 related concerns preventing people from seeking medical and dental treatment[238] [see Figure 309].

Figure 308

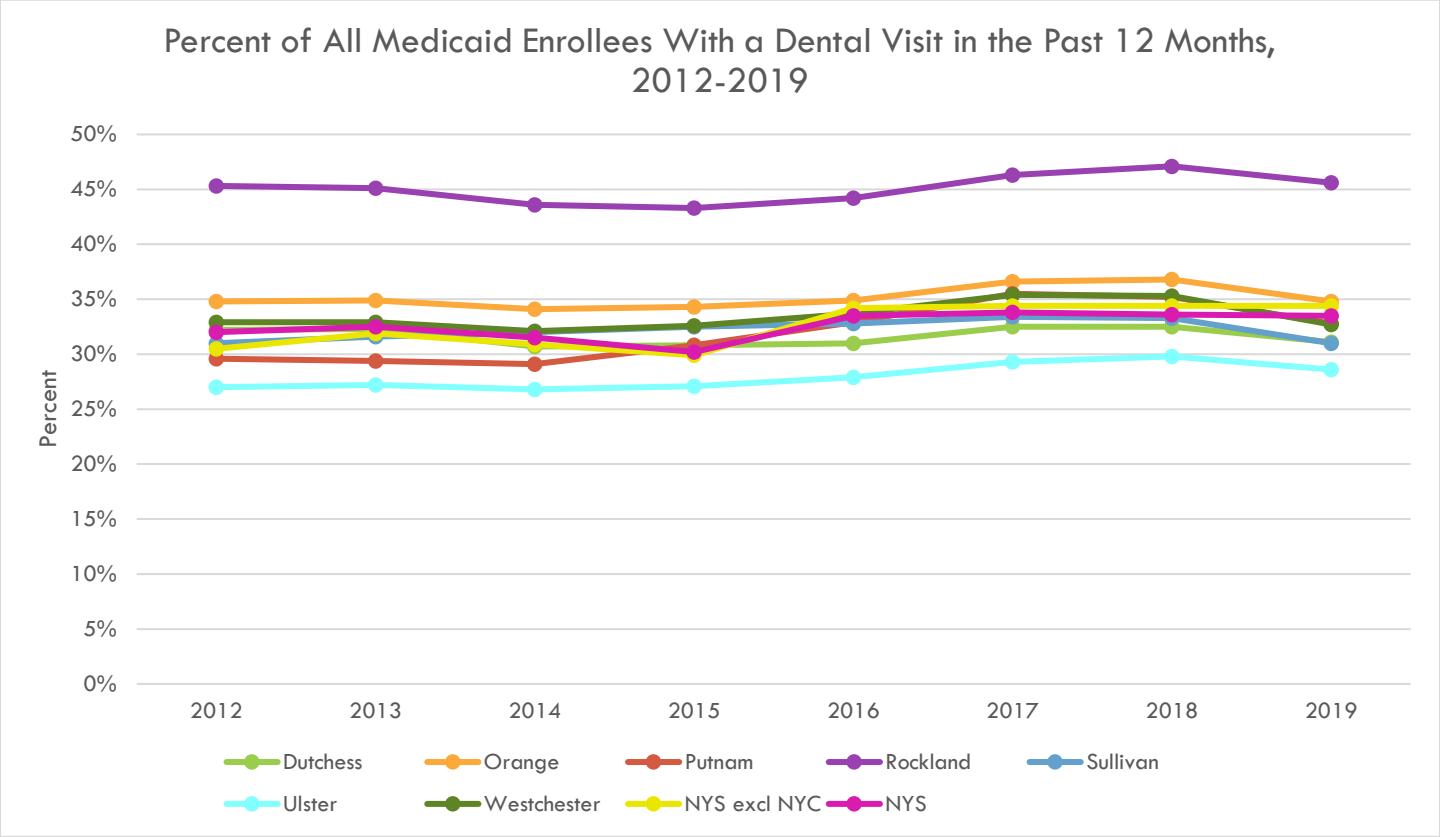


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
All Enrollees	31.1%	34.8%	32.8%	45.6%	31.0%	28.6%	32.7%	35.1%	31.2%
Enrollees Aged 2-20	45.9%	49.2%	53.3%	64.2%	44.1%	43.4%	53.1%	53.3%	46.9%

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Lg91
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Lg93

[238] Centers for Disease Control and Prevention, US Department of Health and Human Services, 2022, https://www.cdc.gov/nchs/data/databriefs/db435.pdf, accessed June 2022

Figure 309

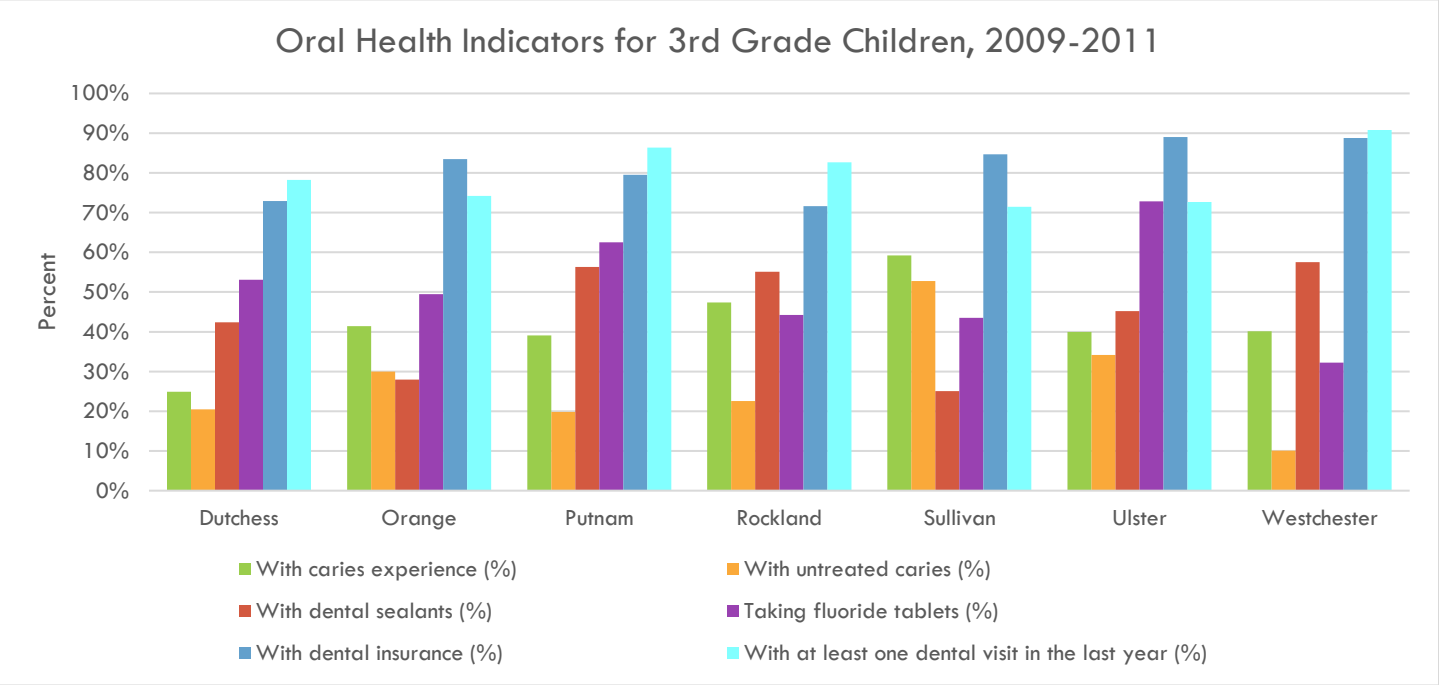


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2012	32.2%	34.8%	29.6%	45.3%	31.0%	27.0%	32.9%	30.5%	32.0%
2013	32.3%	34.9%	29.4%	45.1%	31.6%	27.2%	32.9%	31.9%	32.5%
2014	30.7%	34.1%	29.1%	43.6%	32.0%	26.8%	32.1%	30.9%	31.5%
2015	30.8%	34.3%	30.8%	43.3%	32.5%	27.1%	32.6%	29.9%	30.2%
2016	31.0%	34.9%	32.9%	44.2%	32.8%	27.9%	33.7%	34.2%	33.5%
2017	32.5%	36.6%	35.5%	46.3%	33.4%	29.3%	35.4%	34.4%	33.8%
2018	32.5%	36.8%	35.2%	47.1%	33.3%	29.8%	35.3%	34.4%	33.6%
2019	31.1%	34.8%	32.8%	45.6%	31.0%	28.6%	32.7%	34.4%	33.5%

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC are used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Lg91

To prevent long-term dental damage, it is essential to instill good hygiene habits during childhood. Compared to children who have good oral health, those with poor oral health are more likely to miss school and have lower grades in their classes.[239] Figure 310 shows a number of health indicators that have been used to assess the oral health of 3rd grade children from 2009 to 2011. More recent data is not available to assess the oral health of children in the M-H Region.

Figure 310



	With caries experience	With untreated caries	With dental sealants	Taking fluoride tablets	With dental insurance	With at least one dental visit in the last year
Dutchess	24.9%	20.5%	42.4%	53.1%	72.9%	78.2%
Orange	41.4%	30.0%	28.0%	49.5%	83.5%	74.2%
Putnam	39.1%	19.8%	56.3%	62.5%	79.5%	86.4%
Rockland	47.4%	22.6%	55.1%	44.2%	71.6%	82.7%
Sullivan	59.2%	52.8%	25.1%	43.5%	84.7%	71.5%
Ulster	40.0%	34.2%	45.2%	72.8%	89.0%	72.7%
Westchester	40.1%	10.1%	57.5%	32.2%	88.8%	90.8%

Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Lg84
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Lg85
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Lg86
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Lg89
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Lg87
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Lg88

[239] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/oralhealth/basics/childrens-oral-health/index.html, accessed June 2022

Community water fluoridation and school-based sealant programs are two leading evidence-based interventions to prevent tooth decay. Dental sealants, a thin plastic covering placed on the chewing surfaces of teeth, can help prevent tooth decay, especially in younger children. Research has shown that dental sealants can prevent up to 80% of tooth decay in the treated teeth.[240] Many children and adolescents do not get dental sealants, and there are disparities by race/ethnicity and income. Nationwide, only 37% of children and adolescents aged 3 to 19 years had received dental sealants on one or more of their primary and permanent molars between 2013 to 2016. Healthy People 2030 aims to increase this percentage to 42.5%.[241] Providing sealants through school-based programs is an effective way to increase their use.[242] Community water fluoridation is the most effective way to deliver the benefits of fluoride to a community. Studies show that it prevents tooth decay by 18% to 40%.[243] Information on fluoridation of the water supply in the M-H Region counties can be found in Figure 32.

BEHAVIORAL HEALTH

MENTAL HEALTH

Health is an all-encompassing term that not only involves the physical well-being of an individual, but also his or her mental wellness. The World Health Organization (WHO) defines health as a "state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity."[244] There are many factors that contribute to a person's mental health, including daily habits, traumatic life events, family history of mental illness, and substance use. Almost one in five young people in the US are affected by some type of mental, emotional, or behavioral disorder (MEB), such as depression or substance use.[245] Poor mental health can affect all aspects of an individual's life, including family, school, and work. It is a major economic burden for the US, costing $193.2 billion in lost earnings annually due to serious mental illness.[246] Mental health and physical health are closely connected and it is therefore important to address the issues surrounding mental health in the community.

When looking at Figure 311, the percentage of adults who reported poor mental health for 14 or more days in 2018 was highest in Dutchess, Ulster, and Sullivan Counties (11.7%, 11.6%, and 11.2%, respectively), while the lowest percentage was in Orange County (8.6%). The M-H Region as a whole is less than NYS (9.1% vs 11.2%, respectively). From 2016 to 2018, the percentage has decreased in most counties with the exception of Putnam and Rockland.

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[240] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/oralhealth/fast-facts/dental-sealants/index.html, accessed June 2022

[241] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/objectives-and-data/browse-objectives/oral-conditions/increase-proportion-children-and-adolescents-who-have-dental-sealants-1-or-more-molars-oh-10, accessed June 2022

[242] Healthy People 2020, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://www.healthypeople.gov/2020/topics-objectives/topic/oral-health/objectives, accessed June 2022

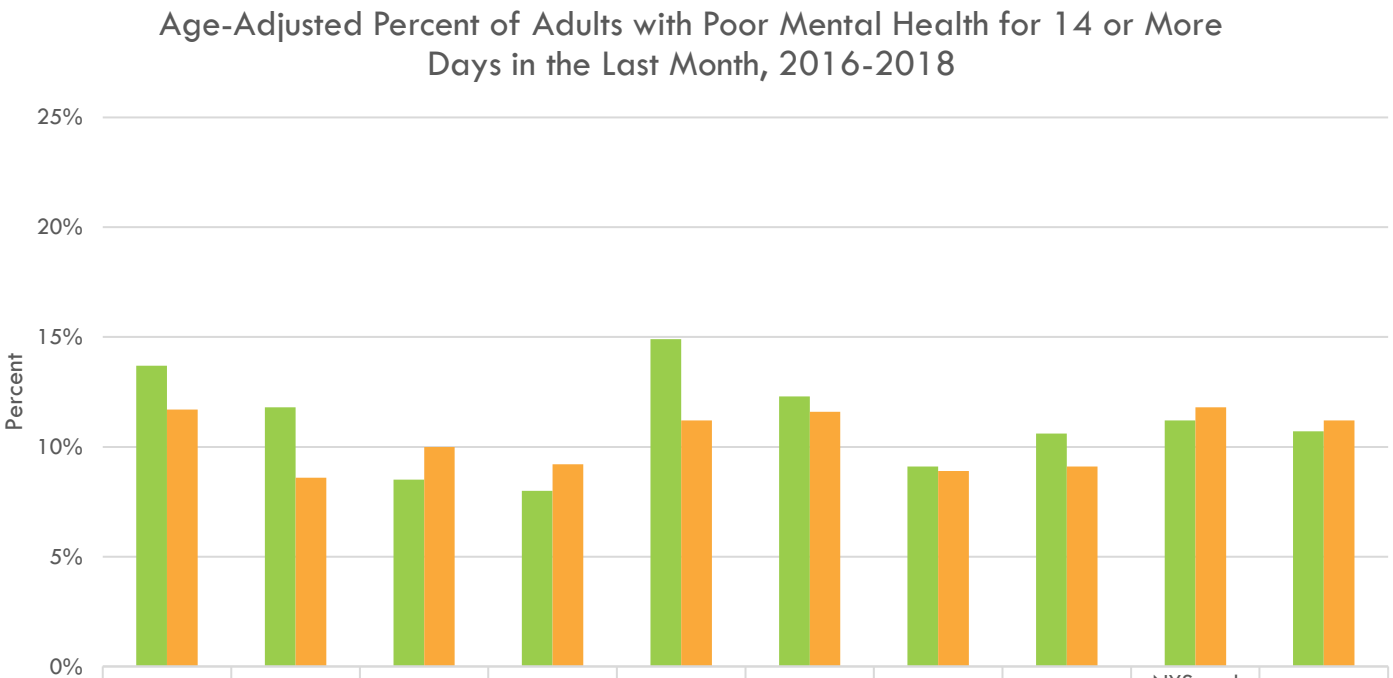
[243] Centers for Disease Control and Prevention, 2020, https://www.cdc.gov/fluoridation/index.html, accessed September 2022

[244] World Health Organization, https://www.who.int/about/governance/constitution, accessed June 2022

[245] New York State Department of Health, 2020, https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/wb.htm, accessed June 2022

[246] National Alliance on Mental Illness, 2022, https://www.nami.org/mhstats, accessed June 2022

Figure 311

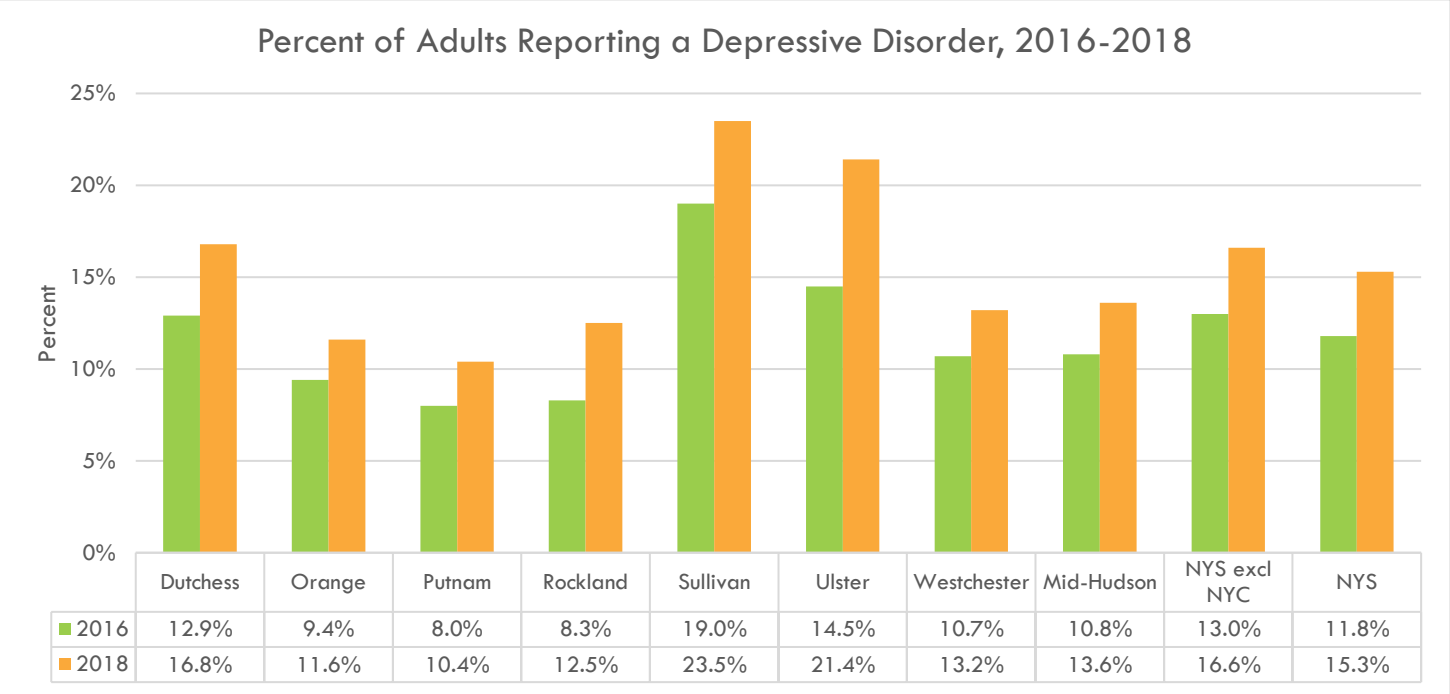


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
2016	13.7%	11.8%	8.5%	8.0%	14.9%	12.3%	9.1%	10.6%	11.2%	10.7%
2018	11.7%	8.6%	10.0%	9.2%	11.2%	11.6%	8.9%	9.1%	11.8%	11.2%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

One of the major disorders that can lead to poor mental health is depression. This is a mood disorder that causes a constant feeling of sadness or lack of interest in performing any life activities. When looking at the percentage of people reporting a depressive disorder in 2018, the highest percentage was seen in Sullivan County (23.5%) and the lowest in Putnam County (10.4%) [see Figure 312]. Note that substantially more people are reporting a depressive disorder in 2018 compared to 2016 for all counties, the M-H Region, and NYS.

Figure 312



Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

SUBSTANCE USE

Substance use refers to the recurrent use of substances, such as nicotine, alcohol, and/or opioids. Drug addiction, also called substance use disorder, can affect a person's brain and behavior and interfere with meeting responsibilities at school, work, or at home. It increases the risk of social, physical, and mental health problems. These include teenage pregnancy, HIV/AIDS, STIs, domestic violence, crime, homicide, and suicide.[247] According to the 2020 National Survey on Drug Use and Health (NSDUH), 40.3 million people aged 12 years or older (or 14.5% of this population) had a substance use disorder in the past year, including 28.3 million who had alcohol use disorder and 18.4 million who had an illicit drug use disorder.[248]

[247] Healthy People 2020, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse, accessed June 2022

[248] US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, 2021, https://www.samhsa.gov/data/sites/default/files/reports/rpt35325/NSDUHFFRPDFWHTMLFiles2020/2020NSDUHFFR1PDFW102121.pdf, accessed September 2022

TOBACCO & VAPING

Tobacco use leads to diseases that cause harm to almost every organ in the body. Smoking is the leading cause of preventable death in the US and smoking-related illness costs more than $300 billion each year in direct medical care and lost productivity.[249] Tobacco contains nicotine, which is a chemical substance that can lead to addiction. More than 16 million Americans are living with a disease that is caused by smoking, some of which include cancer (specifically lung cancer), heart disease, stroke, diabetes, and COPD.[250] Table 40 shows the increased risk that smoking can have on the incidence and mortality of certain diseases.

Table 40

Increased Risk of Disease Incidence From Smoking	
Disease	**Risk Increase**
Coronary Heart Disease Incidence	2-4 times
Stroke Incidence	2-4 times
Lung Cancer Incidence (Male)	25 times
Lung Cancer Incidence (Female)	25.7 times

Source: CDC, October 2021: https://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/effects_cig_smoking/index.htm, accessed April 2022

Tobacco use can also have disproportionate effects on diverse populations. For example, the Medicaid population has a higher prevalence of smoking and has a harder time quitting. African Americans are more likely to die from smoking-related disease. People with mental health conditions are four times more likely to die from smoking. Finally, people experiencing disability have a higher prevalence of smoking. Figure 313 shows the percentage of New York State Smokers Quitline users from the Metro Region, which includes the seven M-H Region counties, who fell into the diverse categories.

[249] Centers of Disease Control and Prevention, 2022, https://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/cost-and-expenditures.html, accessed June 2022

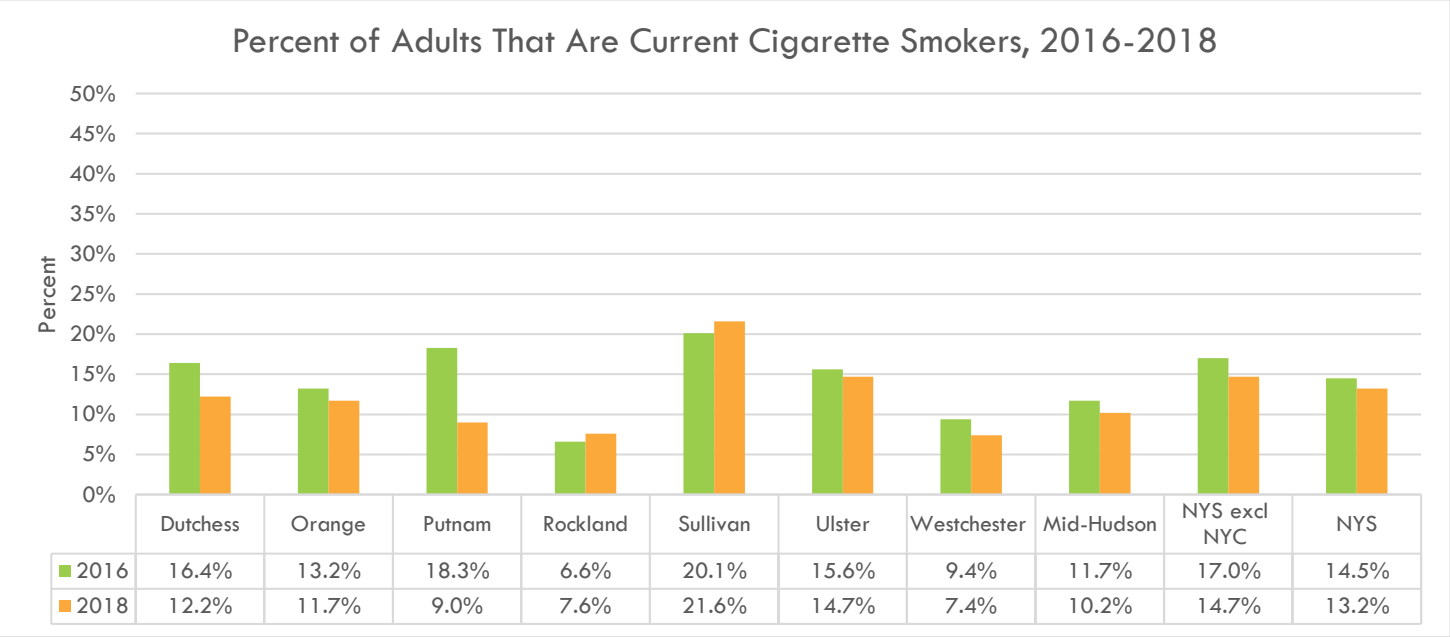
[250] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/diseases-and-death.html, accessed September 2022

Figure 313

Source: NYS Smokers' Quitline, 2021: https://www.nysmokefree.com/Downloads/Reports/Sustainability/2021_SustainabilityReport_RegionalHighlights.pdf, accessed June 2022

When comparing the percentage of adults who smoked cigarettes from 2016 to 2018, the percentage of those who smoked continued to decrease in almost every county in the M-H Region (with the exception of Rockland and Sullivan Counties), NYS, and NYS excluding NYC. In 2018, Sullivan County had the highest percentage of adults smoking cigarettes and Westchester County had the lowest percentage (21.0% and 7.0%, respectively). The Healthy People 2020 goal was to reduce cigarette smoking among adults to 12.0%. Most counties have met this target, with the exception of Sullivan and Ulster Counties. The latest Healthy People 2030 goal is 6.1%.[251]

Figure 314



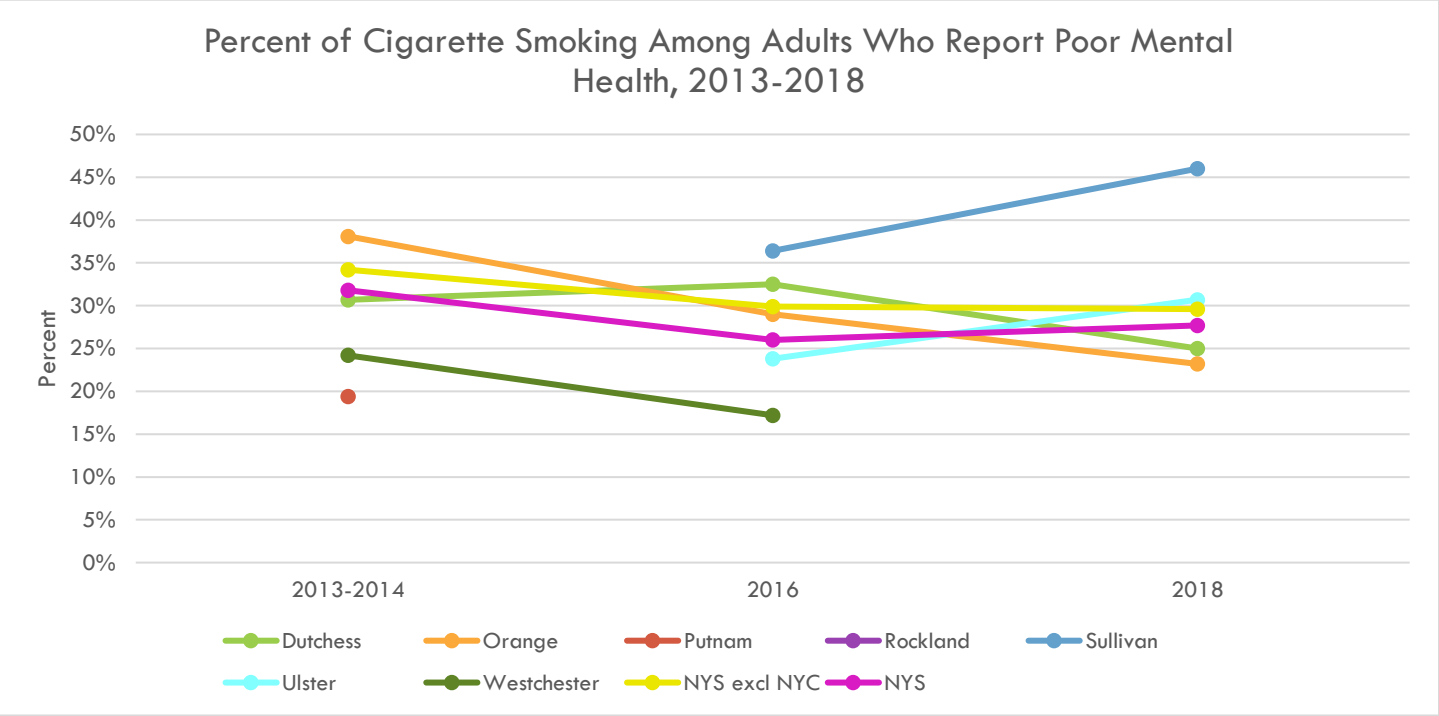
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
2016	16.4%	13.2%	18.3%	6.6%	20.1%	15.6%	9.4%	11.7%	17.0%	14.5%
2018	12.2%	11.7%	9.0%	7.6%	21.6%	14.7%	7.4%	10.2%	14.7%	13.2%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

In 2018, the rates of cigarette smoking were higher among adults who reported poor mental health than those who reported cigarette smoking in general. In Ulster County, there was a higher percentage of cigarette smoking among adults who report poor mental health compared to the population reporting cigarette smoking in general (34.6% vs 13.4%, respectively) [see Figure 314, Figure 315]. Similar trends were seen across all counties in the M-H Region and NYS.

[251] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/objectives-and-data/browse-objectives/tobacco-use/reduce-current-cigarette-smoking-adults-tu-02, accessed June 2022

Figure 315



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2013-2014	30.7%*	38.1%*	19.4%*	s	s	s	24.2%*	34.2%	31.8%
2016	32.5%*	29.0%*	s	s	36.4%*	23.8%*	17.2%*	29.9%	26.0%
2018	25.0%*	23.2%*	s	s	46.0%*	30.7%*	s	29.6%	27.7%

s: Rates suppressed due to small sample size.
**: Unreliable crude rate due to large standard error.*
Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

Although tobacco use seems to be decreasing over time, the use of electronic nicotine delivery systems (ENDS), or vaping, has become widely popular over the past few years. Electronic nicotine delivery systems (electronic cigarettes or e-cigarettes, vaping pens, hookah pens, etc.) were originally created to provide alternative products for those who were looking to quit smoking cigarettes. It has become a new trend among young adults. According to the NYSDOH, the use of e-cigarettes among high school youth increased from 10.5% to 27.4% from 2014 to 2018, which is almost a 160% increase over the past four years.[252] However, the trend in any tobacco product use among high school students, including ENDS, has decreased since 2018 from 30.6% to 25.6% in 2020 and has reached the lowest youth smoking rate on record.[253]

For more information, please visit CDC's Electronic Cigarette page (https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm). For more information on how to quit smoking, call 1-866-NY-QUITS or visit https://nysmokefree.com/

[252] New York State Department of Health, 2019, https://www.health.ny.gov/prevention/tobacco_control/reports/statshots/volume12/n1_electronic_sig_use_increase.pdf, accessed September 2022

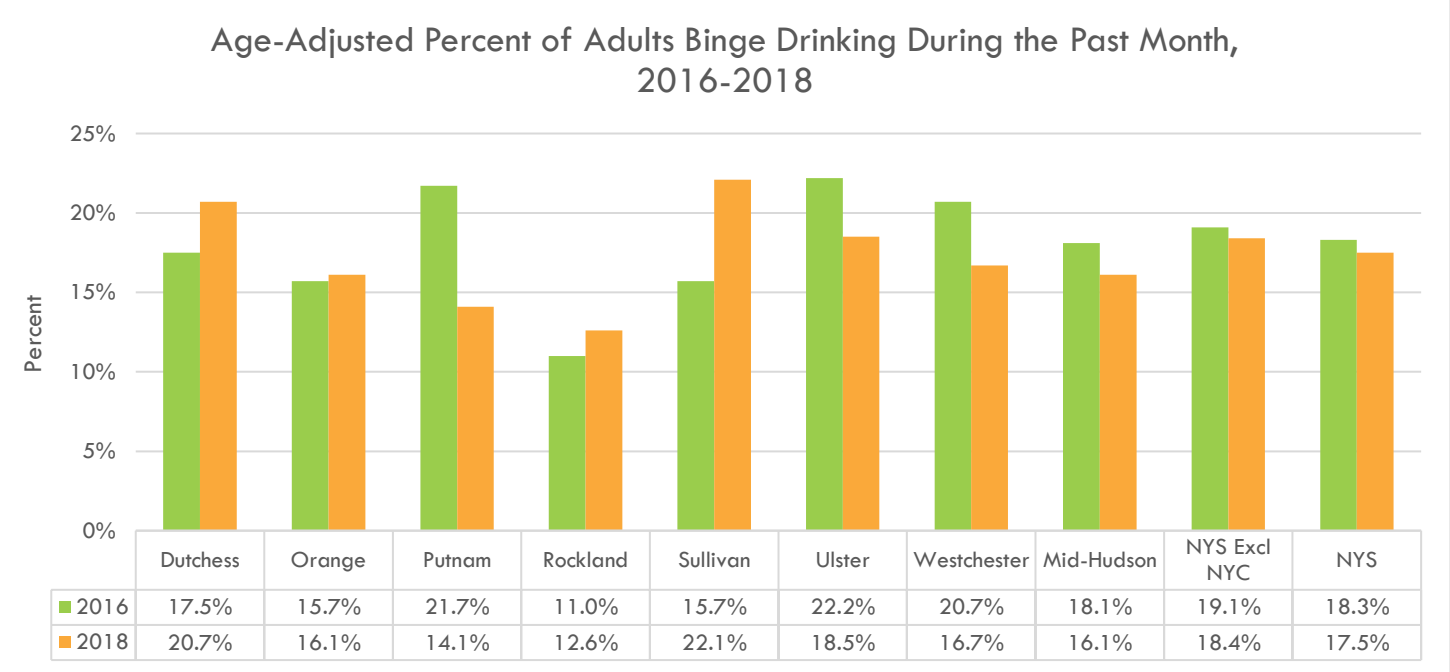
[253] New York State Department of Health, 2021, https://www.health.ny.gov/prevention/tobacco_control/reports/statshots/volume14/n3_milestones_in_tobacco_control.pdf, accessed June 2022

ALCOHOL

Excessive alcohol use has led to more than 140,000 deaths and 3.6 million years of potential life lost each year in the US from 2015 to 2019.[254] Binge drinking, which is when women have four or more drinks or men have five or more drinks on one occasion, is the most common pattern of excessive alcohol use.[255] Binge drinking is more common among younger adults between the ages of 18 and 34, people with an income greater than $75,000, and people with higher educational levels. However, binge drinkers with lower incomes and educational levels have more occasions of binge drinking per year.[256]

Binge drinking has increased in about half of the counties in the M-H Region from 2016 to 2018 (Dutchess, Orange, Rockland, and Sullivan) and decreased in Putnam, Ulster, and Westchester, as well as NYS and NYS excluding NYC. Sullivan County had the highest percentage of adults binge drinking in 2018 at 22.1% and Rockland County had the lowest percentage at 12.6%.

Figure 316



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS Excl NYC	NYS
2016	17.5%	15.7%	21.7%	11.0%	15.7%	22.2%	20.7%	18.1%	19.1%	18.3%
2018	20.7%	16.1%	14.1%	12.6%	22.1%	18.5%	16.7%	16.1%	18.4%	17.5%

Source: NYSDOH Behavioral Risk Factor Surveillance System, 2018
https://health.data.ny.gov/Health/Behavioral-Risk-Factor-Surveillance-System-BRFSS-H/jsy7-eb4n/data

Binge drinking can lead to many different health and social problems, including unintentional motor vehicle accidents. In 2016, 28% of traffic related deaths in the US were due to alcohol-impaired driving.[257] For regional data regarding alcohol-related motor vehicle injuries and deaths, refer to the section Motor Vehicle Accidents on page 365.

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[254] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/alcohol/features/excessive-alcohol-deaths.html, accessed June 2022

[255] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/alcohol/fact-sheets/prevention.htm, accessed June 2022

[256] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/alcohol/features/binge-drinking.html#:~:text=Binge%20drinkers%20with%20lower%20household%20incomes%20%28less%20than,than%20those%20with%20higher%20incomes%20and%20educational%20levels, accessed September 2022

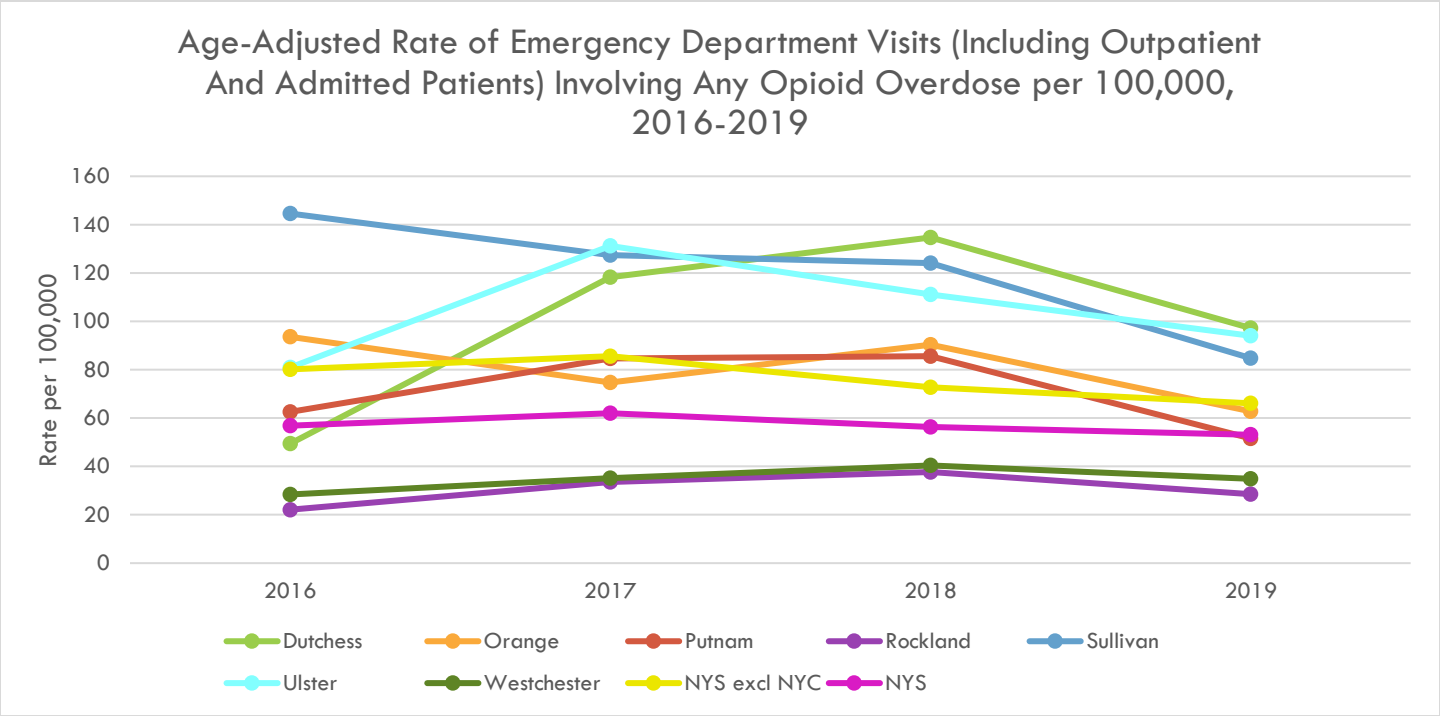
[257] NHTSA'S National Center for Statistics and Analysis, 2017, https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812450, accessed September 2022

OPIOID USE

Opioids are a class of drugs that include illicit drugs such as heroin, synthetic opioids such as fentanyl, and prescription pain relievers, such as oxycodone, hydrocodone, and morphine. According to the CDC, in 2019 over 70% of drug overdoses involved an opioid and from 2018 to 2019 opioid-involved death rates increased by over 6%.[258] The financial costs of management, treatment, and lost productivity due to misuse of illicit drugs, prescription drugs, and alcohol was estimated at $442 billion in 2012.[259]

From 2016 to 2019, the ED visit rates for overdoses involving any opioid has decreased or remained relatively stable in all seven counties in the M-H Region, as well as NYS and NYS excluding NYC [see Figure 317].

Figure 317



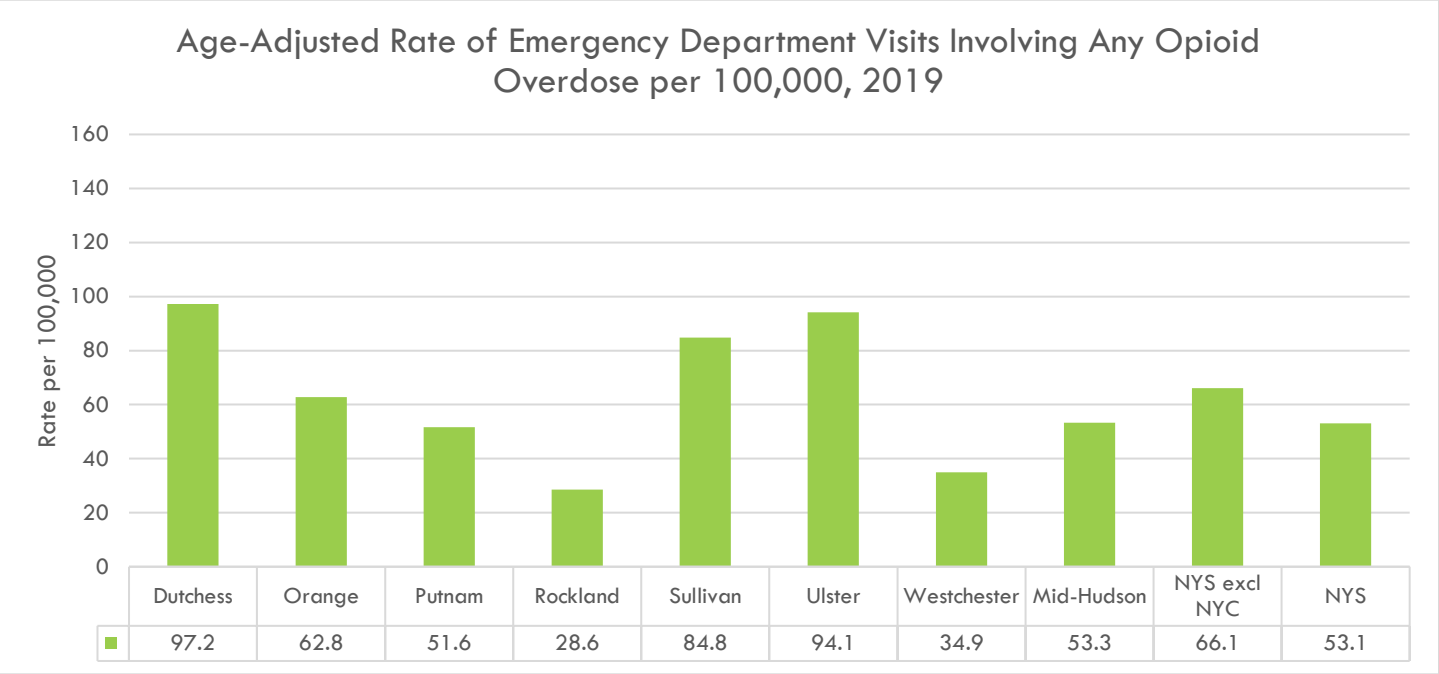
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2016	49.4	93.6	62.6	22.1	144.6	80.9	28.4	80.2	56.8
2017	118.2	74.7	84.7	33.5	127.4	131.2	35.1	85.6	62.0
2018	134.7	90.3	53.8	37.7	124.1	111.1	40.4	72.7	56.3
2019	97.2	62.8	51.6	28.6	84.8	94.1	34.9	66.1	53.1

Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op21

[258] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/drugoverdose/epidemic/index.html, accessed June 2022

[259] New York State Department of Health, 2020, https://www.health.ny.gov/prevention/prevention_agenda/2019-2024/wb.htm, accessed June 2022

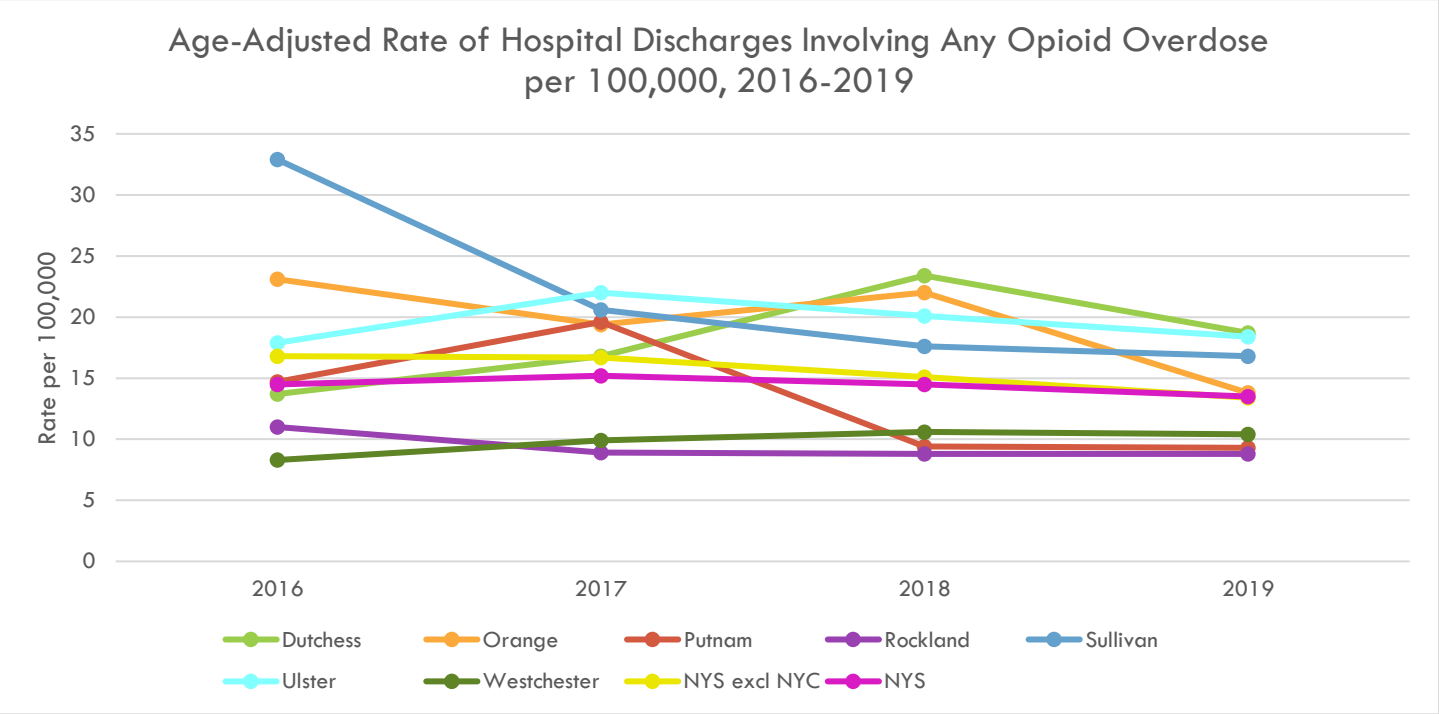
Figure 318



Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op21

Hospital discharges involving any opioid overdose have generally remained flat over time, with the exception of Sullivan County, which has seen a steady decrease since 2016 [see Figure 319].

Figure 319

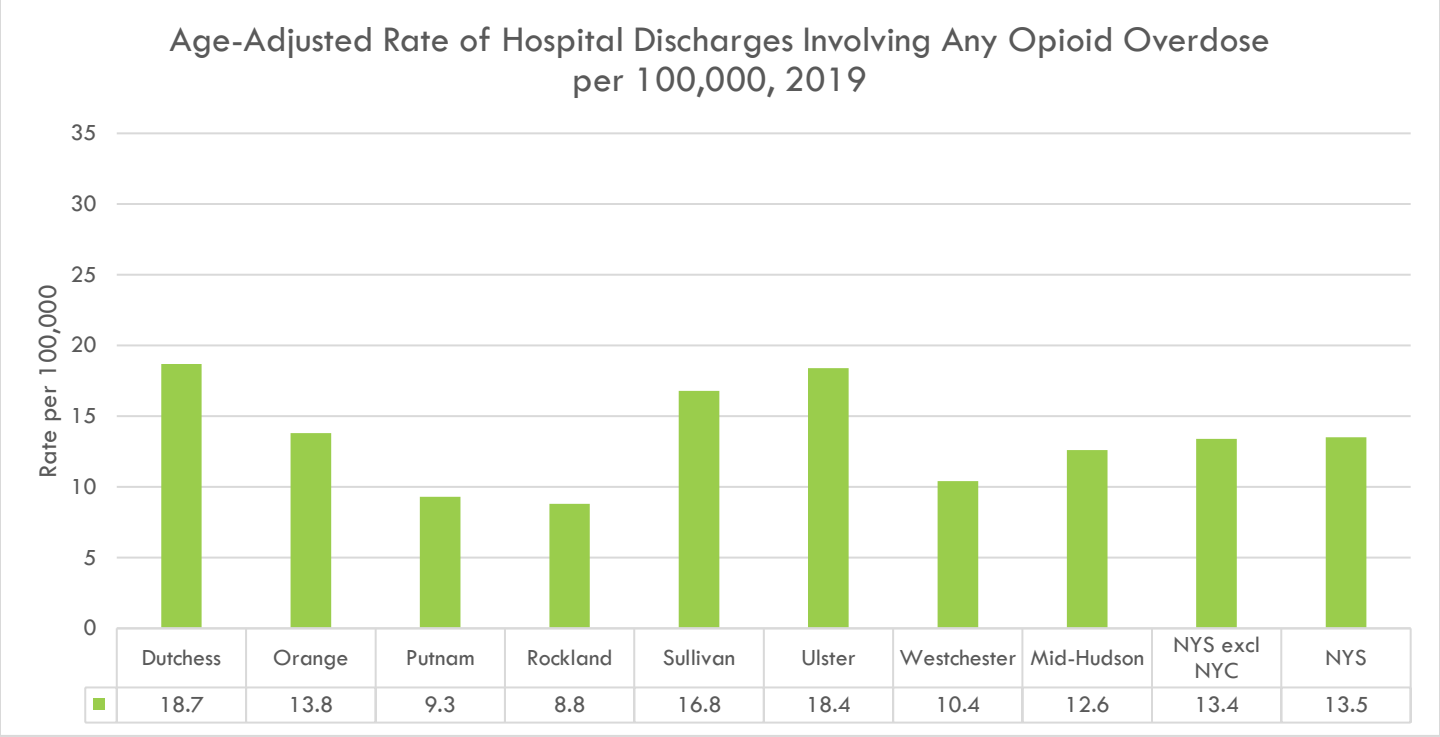


	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2016	13.7	23.1	14.7	11.0	32.9	17.9	8.3	16.8	14.5
2017	16.8	19.4	19.6	8.9	20.6	22.0	9.9	16.7	15.2
2018	23.4	22.0	9.4	8.8	17.6	20.1	10.6	15.1	14.5
2019	18.7	13.8	9.3	8.8	16.8	18.4	10.4	13.4	13.5

Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op29

When looking at recent data from 2019, Dutchess and Ulster Counties had the highest rate of hospital discharges involving any opioid overdose and Rockland County had the lowest rate (18.7, 18.4, and 8.8 per 100,000 population, respectively) [see Figure 320]. The M-H Region had a slightly lower rate than NYS and NYS excluding NYC (12.6 vs 13.5 and 13.4 per 100,000 population, respectively).

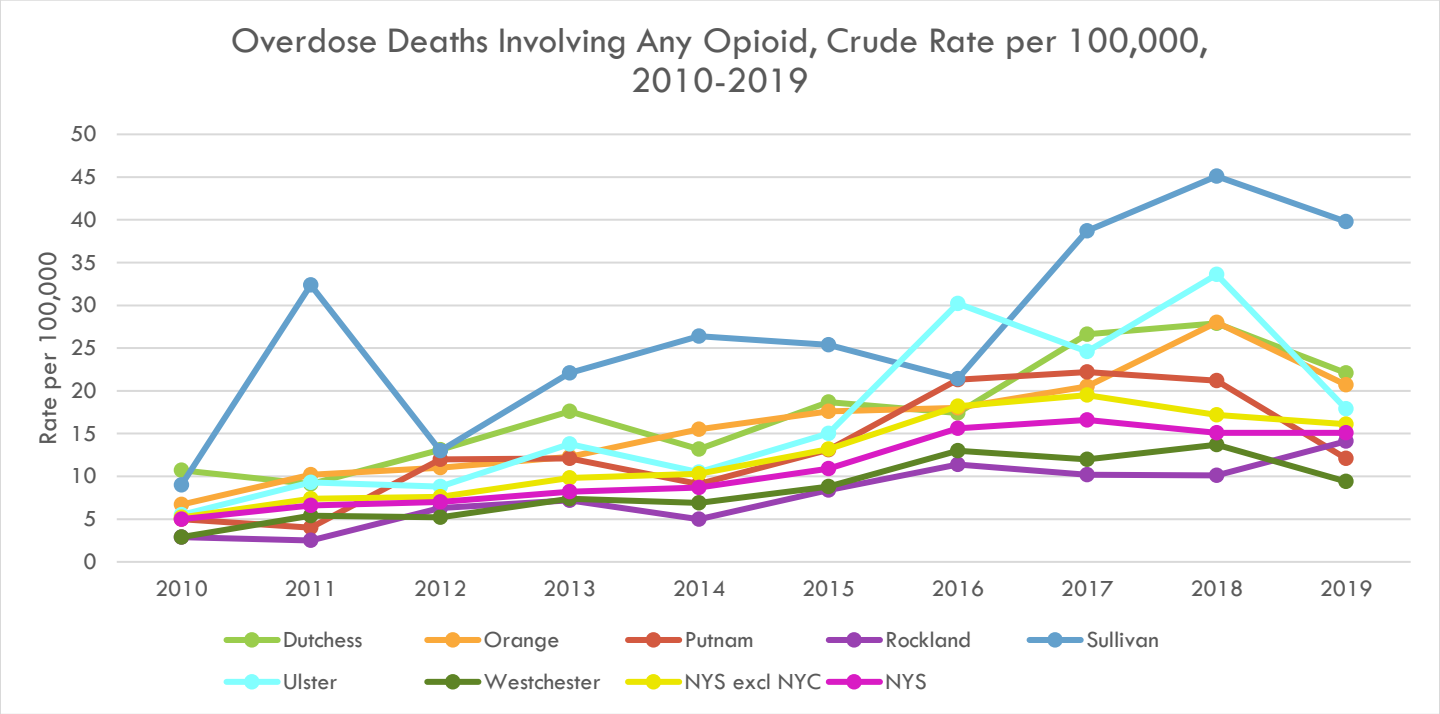
Figure 320



Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/opioid_dashboard/op_dashboard&p=it&ind_id=op29

When looking at the rate of overdose deaths involving any opioid from 2010 to 2019, it has steadily increased across each county in the M-H Region, as well as NYS and NYS excluding NYC. In 2019, the highest rate was seen in Sullivan County and the lowest rate was seen in Westchester County (39.8 and 9.4 per 100,000 population, respectively) [see Figure 321].

Figure 321



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2010	10.7	6.7	5.0*	2.9*	9.0*	5.5	2.9	5.2	5.0
2011	9.1	10.2	4.0*	2.5*	32.4	9.3	5.4	7.4	6.6
2012	13.1	11.0	12.0	6.3	13.0	8.8	5.2	7.6	7.0
2013	17.6	12.3	12.1	7.2	22.1	13.8	7.4	9.8	8.2
2014	13.2	15.5	9.1*	5.0	26.4	10.5	6.9	10.3	8.7
2015	18.7	17.6	13.1	8.4	25.4	15.0	8.8	13.2	10.9
2016	17.4	18.0	21.3	11.4	21.4	30.2	13.0	18.2	15.6
2017	26.6	20.5	22.2	10.2	38.7	24.6	12.0	19.5	16.6
2018	27.9	28.0	21.2	10.1	45.1	33.6	13.7	17.2	15.1
2019	22.1	20.7	12.1	14.1	39.8	17.9	9.4	16.1	15.1

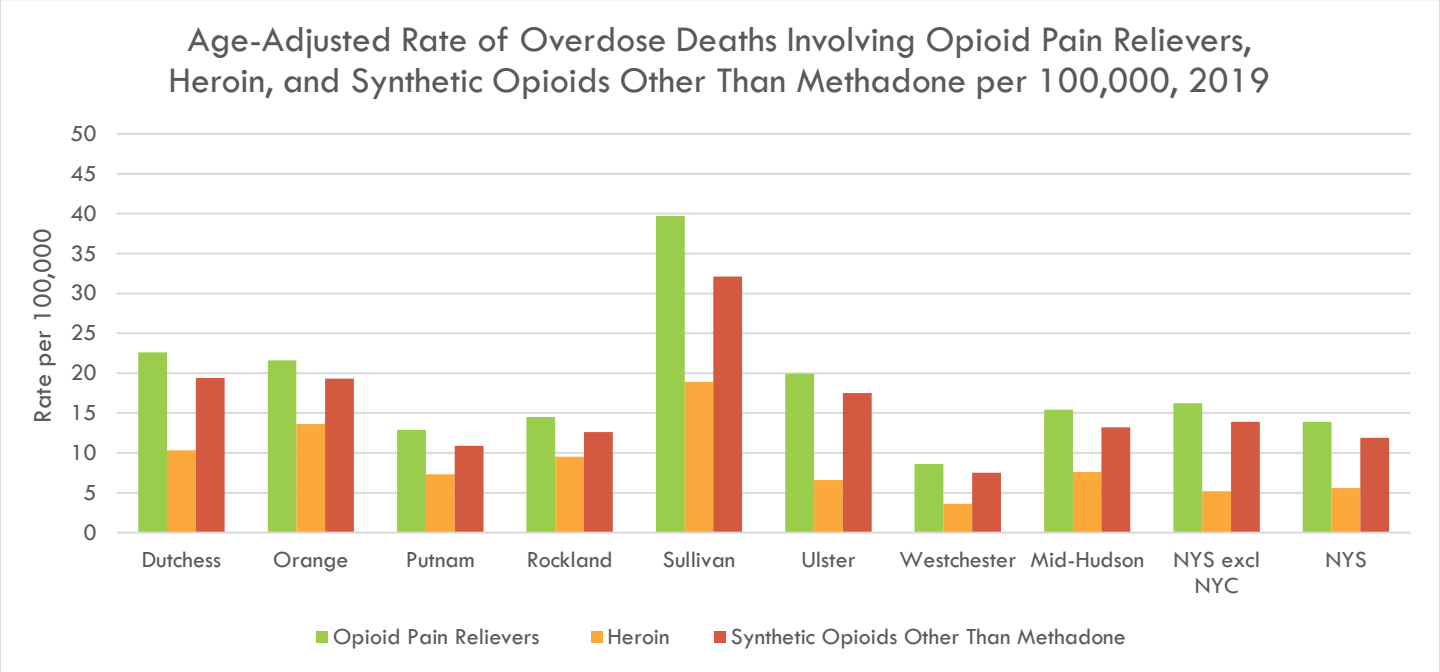
**: Fewer than 10 events in the numerator, therefore the rate is unstable.*

Source: NYSDOH Opioid Data Dashboard, 2021

https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op8

Figure 322 shows the rate of overdose deaths in 2019 stratified by the type of opioid used. The highest rate of overdose deaths in all counties was caused by opioid pain relievers.

Figure 322

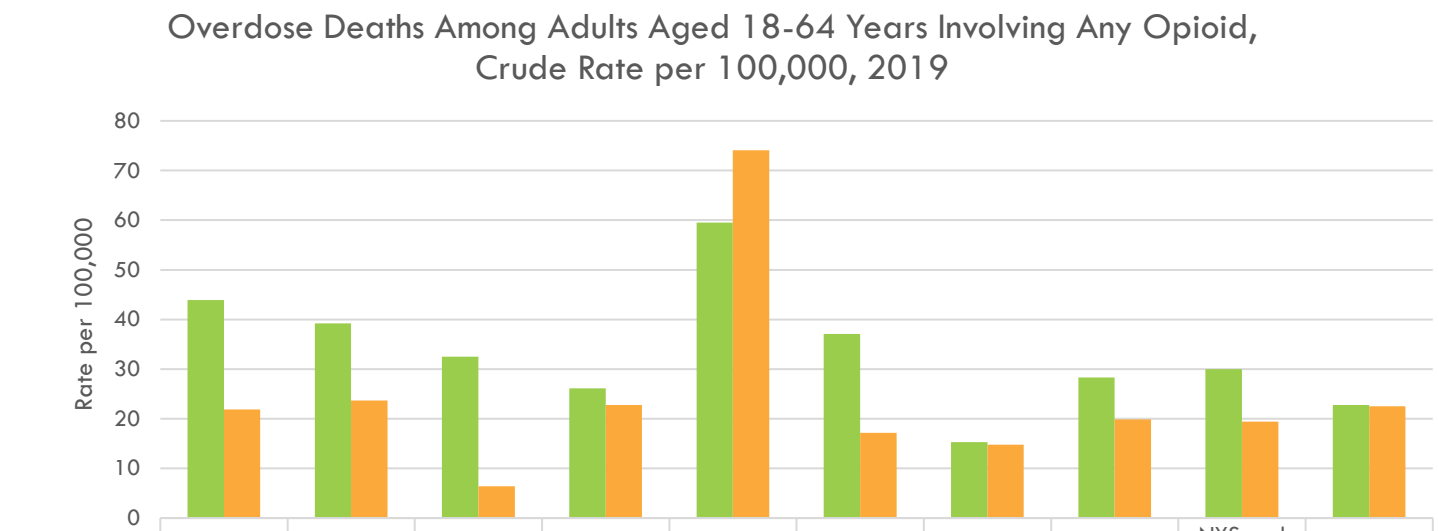


	Opioid Pain Relievers	Heroin	Synthetic Opioids Other Than Methadone
Dutchess	22.6	10.3	19.4
Orange	21.6	13.6	19.3
Putnam	12.9	7.3*	10.9*
Rockland	14.5	9.5	12.6
Sullivan	39.7	18.9	32.1
Ulster	19.9	6.6	17.5
Westchester	8.6	3.6	7.5
Mid-Hudson	15.4	7.6	13.2
NYS excl NYC	16.2	5.2	13.9
NYS	13.9	5.6	11.9

*: *Fewer than 10 events in the numerator, therefore the rate is unstable.*
Note: Opioid pain relievers include illicitly produced opioids such as fentanyl.
Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op13
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op11
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op17

When overdose deaths are stratified by age, the rate of overdose death was higher among adults aged 18 to 44 years compared to those aged 45 to 64 years across all three types of overdose deaths (any opioid, heroin, and opioid pain relievers) [see Figure 323, Figure 324, Figure 325], with the exception of Sullivan County, which had higher rates in adults aged 45 to 64 years for any opioid and opioid pain relievers. Sullivan County had the highest rates of overdose death among adults aged 18 to 44 years caused by all three types (59.5, 34.0, and 59.5 per 100,000 population, respectively) as well as adults aged 45 to 64 years (74.1, 23.2, and 69.5 per 100,000 population, respectively).

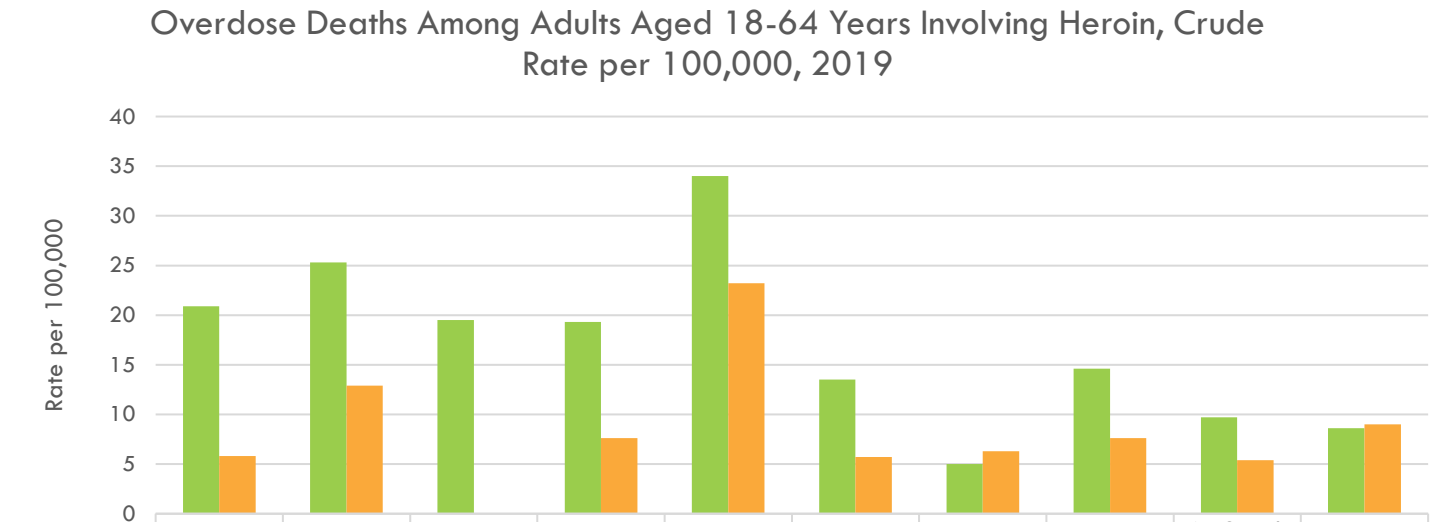
Figure 323



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
18-44 years	43.9	39.2	32.5	26.1	59.5	37.1	15.3	28.3	30.0	22.8
45-64 years	21.9	23.7	6.4 *	22.8	74.1	17.2 *	14.8	19.9	19.4	22.5

*: *Fewer than 10 events in the numerator, therefore the rate is unstable.*
Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/opioid_dashboard/op_dashboard&p=it&ind_id=op8.1
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/opioid_dashboard/op_dashboard&p=it&ind_id=op8.2

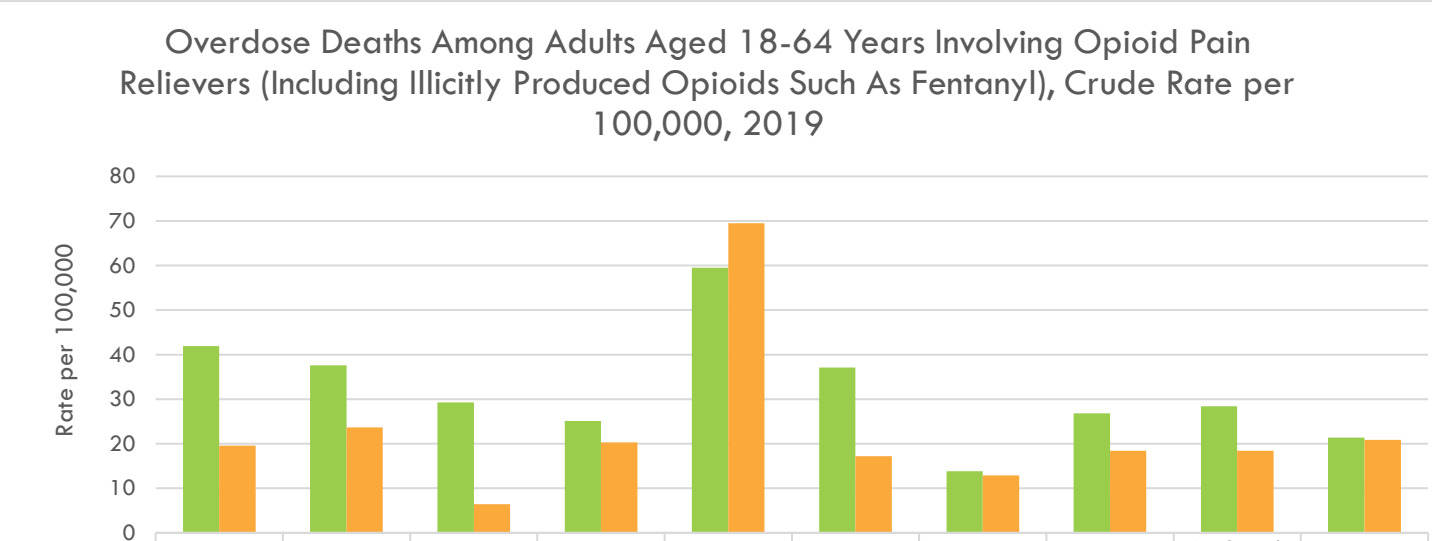
Figure 324



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
18-44 years	20.9	25.3	19.5	19.3	34.0	13.5 *	5.0	14.6	9.7	8.6
45-64 years	5.8	12.9	0.0	7.6	23.2	5.7	6.3	7.6	5.4	9.0

*: *Fewer than 10 events in the numerator, therefore the rate is unstable.*
Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/opioid_dashboard/op_dashboard&p=it&ind_id=op10.1
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/opioid_dashboard/op_dashboard&p=it&ind_id=op10.2

Figure 325



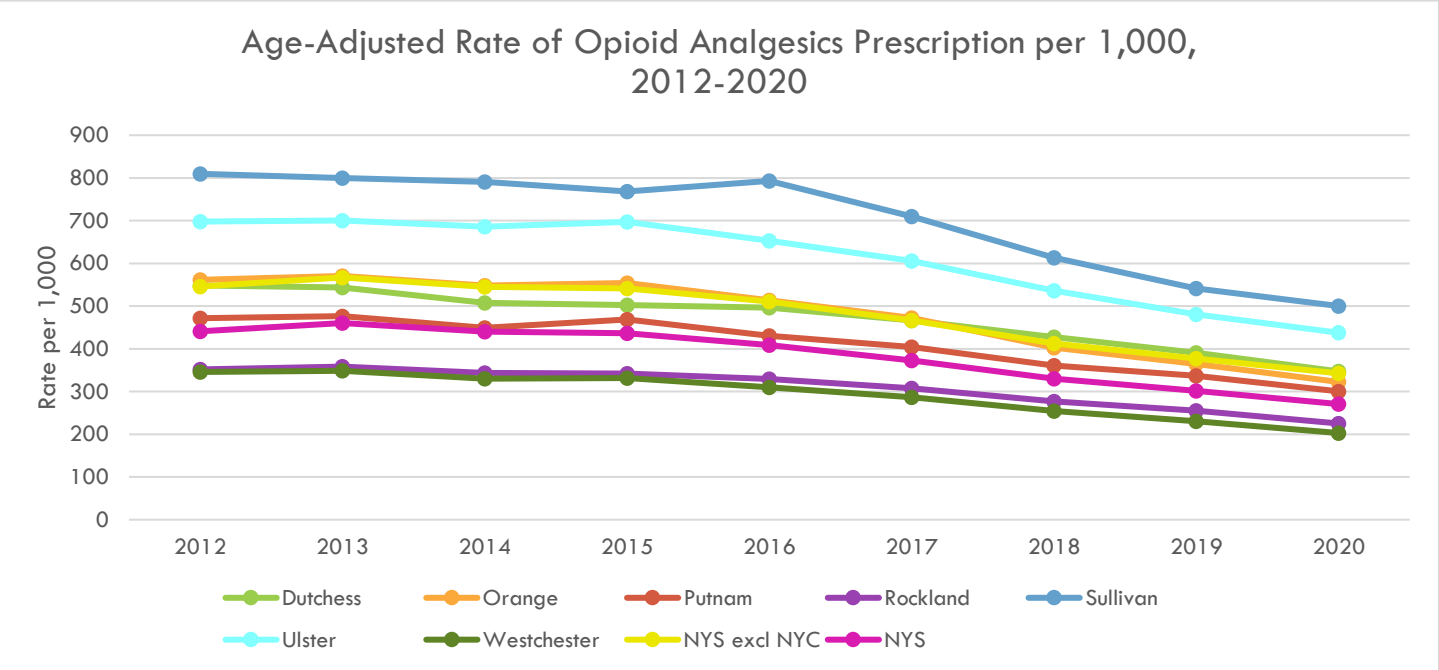
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
18-44 years	41.9	37.6	29.3	25.1	59.5	37.1	13.8	26.8	28.4	21.4
45-64 years	19.6	23.7	6.4	20.3	69.5	17.2	12.9	18.4	18.4	20.9

*: *Fewer than 10 events in the numerator, therefore the rate is unstable.*
Note: Opioid pain relievers include illicitly produced opioids such as fentanyl.
Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op12.1
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op12.2

The misuse of opioid drugs continues to rise in NYS and the government is working to combat this epidemic. Some methods for doing this include improving opioid prescribing practices; increasing education, training, and distribution of Naloxone (an overdose reversal drug); and increasing access to medication-assisted treatment.[260]

From 2012 to 2020, prescription rates for opioid analgesics (pain relievers) have decreased across each county in the M-H Region, as well as NYS and NYS excluding NYC. In 2020, Sullivan County had the highest opioid analgesic prescription rate and Westchester County had the lowest rate (500.2 and 202.9 per 1,000 population, respectively) [see Figure 326].

Figure 326



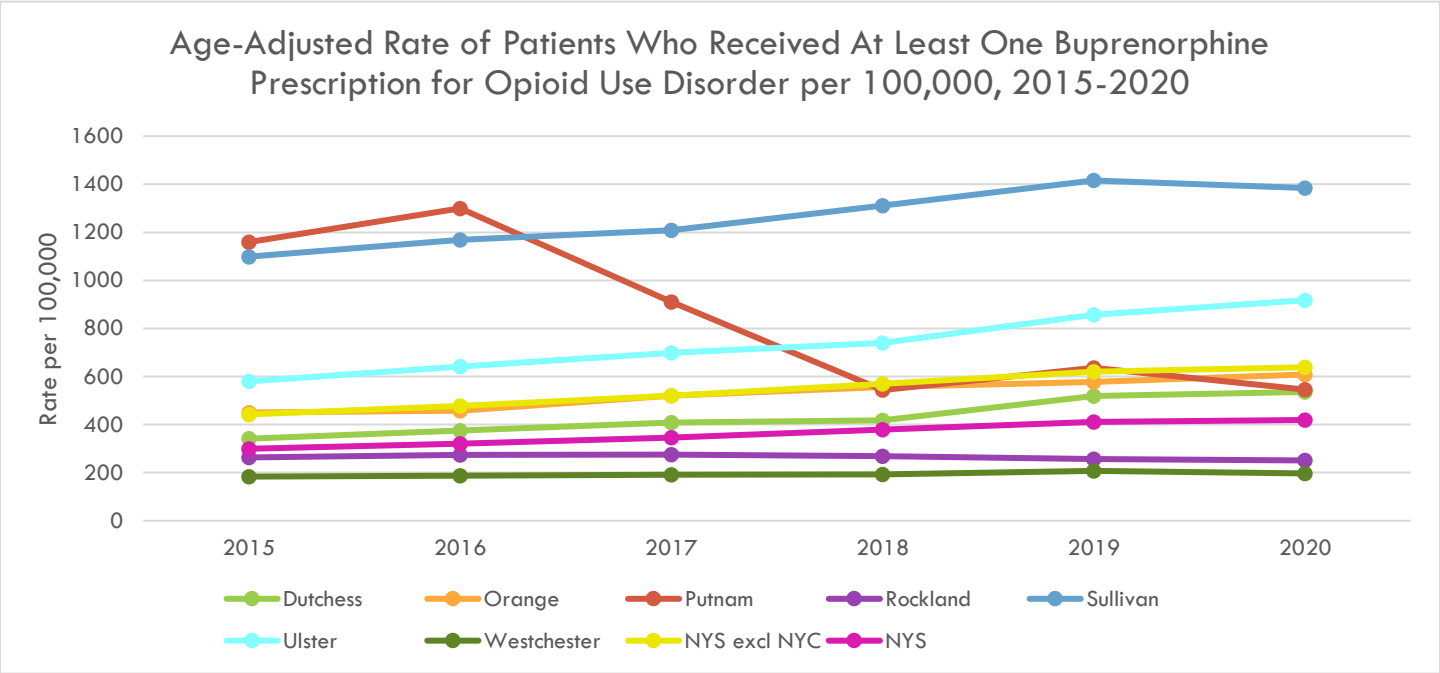
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2012	548.3	561.8	471.9	352.1	809.7	697.6	346.0	545.7	440.7
2013	543.4	570.6	476.5	358.3	799.6	700.4	348.5	567.1	460.3
2014	508.0	548.0	449.4	343.4	790.7	685.6	330.1	544.8	440.5
2015	502.1	554.1	468.6	342.3	768.5	697.4	331.8	541.6	436.6
2016	496.5	513.8	430.3	329.7	793.0	652.8	309.9	510.5	408.8
2017	466.6	472.2	404.3	307.4	710.2	605.6	287.0	466.4	373.1
2018	427.7	402.7	360.9	276.8	613.4	536.0	254.6	412.3	330.4
2019	391.0	364.7	336.8	255.4	541.5	480.5	230.1	377.3	301.9
2020	347.2	322.5	300.5	225.2	500.2	437.7	202.9	342.6	270.7

Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op62

[260] NIH, National Institute on Drug Abuse, 2018, https://www.drugabuse.gov/publications/research-reports/relationship-between-prescription-drug-abuse-heroin-use/introduction, accessed June 2022

Buprenorphine is an opioid used to treat opioid addiction. It is a medication that can be prescribed in physician offices, thereby increasing access to treatment. It produces effects such as euphoria and respiratory depression but these effects are much weaker than other opioids such as heroin.[261] From 2015 to 2020, the rate of patients who received at least one buprenorphine prescription for opioid use disorder has generally increased across each county and NYS, with the exception of Putnam County, which decreased sharply from 2016 to 2018 [see Figure 327]. In 2020, Sullivan County had highest buprenorphine prescription rate and Westchester County had the lowest rate (1384.4 and 196.8 per 100,000 population, respectively).

Figure 327



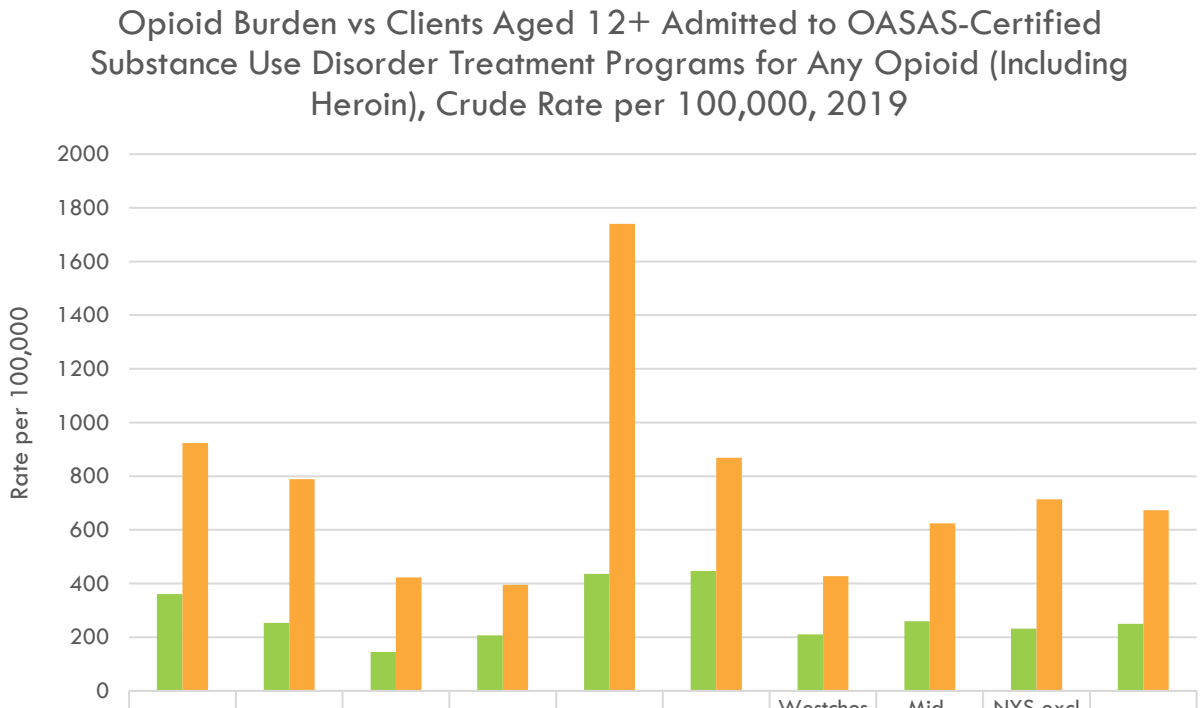
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2015	341.4	450.3	1159.3	263.7	1098.9	579.8	183.4	442.1	299.3
2016	374.5	458.1	1299.8	274.5	1168.2	641.9	187.3	477.6	320.3
2017	409.0	520.5	910.2	275.0	1208.3	698.2	191.5	520.6	346.2
2018	417.1	555.9	543.7	268.1	1311.0	739.6	193.0	569.6	378.6
2019	518.7	578.1	636.4	256.7	1415.9	857.7	207.3	620.1	411.4
2020	535.8	608.6	545.6	250.7	1384.4	917.7	196.8	638.7	419.1

Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op71

[261] Substance Abuse and Mental Health Services Administration, US Department of Health and Human Services, 2022, https://www.samhsa.gov/medication-assisted-treatment/treatment/buprenorphine, accessed June 2022

NYS has identified the opioid burden at the state and county level. Opioid burden includes outpatient ED visits and hospital discharges for non-fatal opioid overdose, abuse, dependence, and unspecified use, and opioid overdose deaths. Of the seven counties in the M-H Region, the opioid burden was highest in Ulster County and lowest in Putnam County (447.0 and 145.6 per 100,000 population, respectively). However, there were many people enrolled in chemical dependence treatment programs offered by the Office of Alcoholism and Substance Abuse Services (OASAS). Sullivan County had the highest rate of people enrolled in OASAS programs (1740.5 per 100,000 population) [see Figure 328].

Figure 328



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS excl NYC	NYS
Opioid Burden	361.5	253.4	145.6	207.0	436.4	447.0	210.9	259.0	231.6	249.8
Clients in OASAS Programs	924.0	788.7	422.8	394.9	1740.5	868.5	427.4	623.9	713.8	673.6

Source: NYSDOH Opioid Data Dashboard, 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/opioid_dashboard/op_dashboard&p=it&ind_id=op56
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fopioid_dashboard%2Fop_dashboard&p=it&ind_id=op39

COVID-19 PANDEMIC IMPACTS ON OPIOID RELATED OVERDOSES AND FATALITIES

Although reliable data on opioid related overdoses and fatalities in the M-H Region is only available through 2019, provisional data from the CDC indicates that over 81,000 drug overdose deaths occurred in the US in the 12 months ending in May 2020. This was the highest number of overdose deaths ever recorded in a 12-month period. While overdose deaths were already increasing in the months preceding the COVID-19 pandemic, the latest numbers suggest an acceleration of overdose deaths during the pandemic. During the COVID-19 pandemic, researchers observed the exacerbation of substance use and drug overdoses in the US.[262] Mental distress has also increased across many populations, "including individuals with no history of mental illness, younger adults, racial and ethnic minorities, essential workers, and unpaid adult caregivers."[263] Stress, trauma, mental distress, and mental illness are recognized to make people more vulnerable to using and abusing substances.[263]

One notable example occurred in Ulster County, where opioid related overdoses increased by 42.9% from 2019 (pre-pandemic) to 2021 (the height of the COVID-19 pandemic). During the same time, opioid related fatalities increased by 115.2% (Source: Ulster County Medical Examiner's Office).

[262] National Institute on Drug Abuse, National Institutes of Health, 2022, https://nida.nih.gov/research-topics/comorbidity/covid-19-substance-use, accessed October 2022

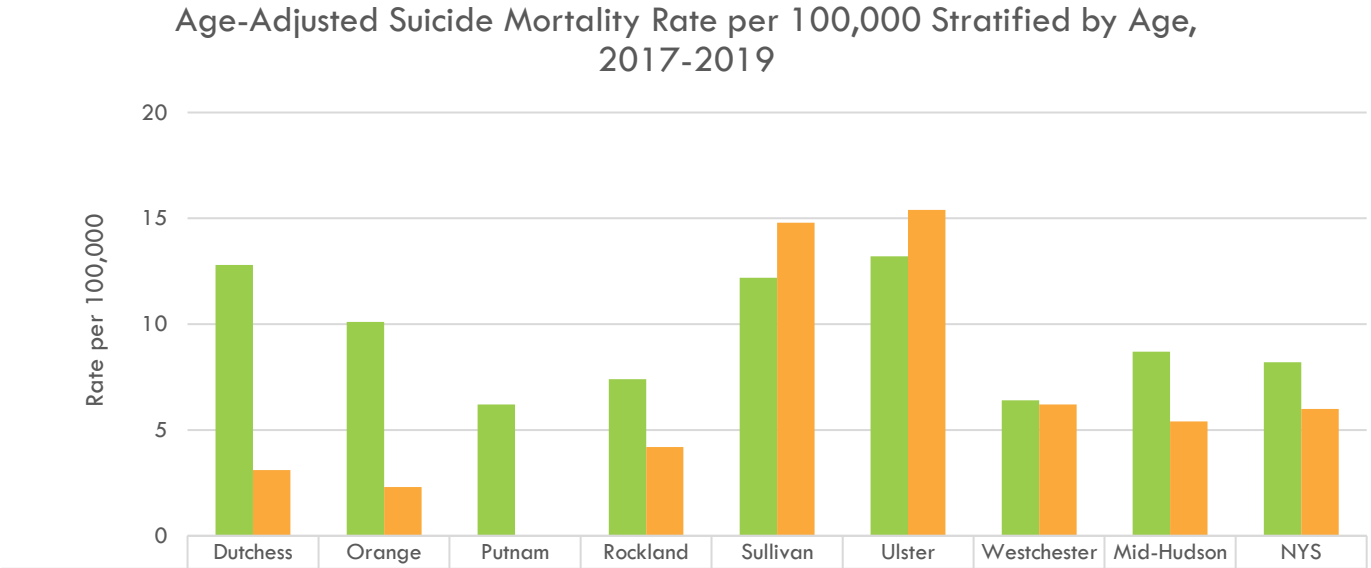
[263] National Institute on Drug Abuse, National Institutes of Health, 2022, https://nida.nih.gov/research-topics/comorbidity/covid-19-substance-use, accessed October 2022

SUICIDE

Suicide is a serious public health problem that can have lasting harmful effects on individuals, families, and communities. It is associated with several risk factors, including those who have experienced bullying, sexual violence, and child abuse. In 2020, 12.2 million American adults considered attempting suicide and nearly 46,000 died by suicide.[264] Protective factors, such as connectedness with family and friends, as well as access to health care services, can help prevent suicide.

Healthy People 2030 set the goal to reduce suicide rates to 12.8 suicides per 100,000 population. Most counties met this target, with the exception of Ulster County (13.2 per 100,000 population) [see Figure 329]. Suicide among young adults is also a public health concern, especially in Sullivan and Ulster Counties, where suicide mortality rates among teenagers aged 15-19 years was 14.8 and 15.4 per 100,000 population, respectively, though these rates are unstable.

Figure 329



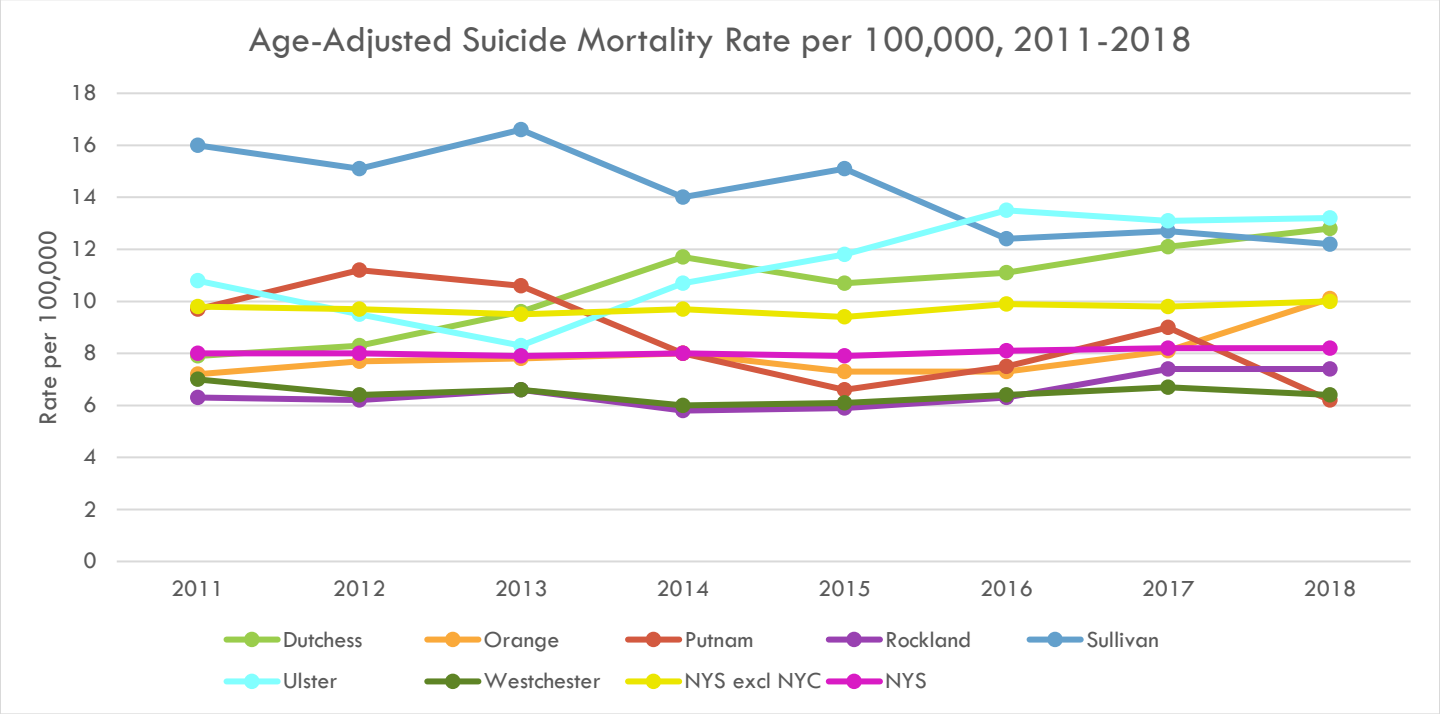
	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	Mid-Hudson	NYS
Total Population	12.8	10.1	6.2	7.4	12.2	13.2	6.4	8.7	8.2
15-19 Years	3.1*	2.3*	0.0*	4.2*	14.8*	15.4*	6.2	5.4	6.0

*: *Fewer than 10 events in the numerator, therefore the rate is unstable.*
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hd24a
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hd25

[264] Centers of Disease Control and Prevention, 2022, https://www.cdc.gov/violenceprevention/suicide/fastfact.html, accessed July 2022

In general, suicide mortality rates have increased across each county and NYS from 2011 to 2018, with the exception of Sullivan County which has seen a general decrease, with fluctuations within each county during different time periods [see Figure 330].

Figure 330



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	7.9	7.2	9.7	6.3	16.0	10.8	7.0	9.8	8.0
2012	8.3	7.7	11.2	6.2	15.1	9.5	6.4	9.7	8.0
2013	9.6	7.8	10.6	6.6	16.6	8.3	6.6	9.5	7.9
2014	11.7	8.0	8.0	5.8	14.0	10.7	6.0	9.7	8.0
2015	10.7	7.3	6.6	5.9	15.1	11.8	6.1	9.4	7.9
2016	11.1	7.3	7.5	6.3	12.4	13.5	6.4	9.9	8.1
2017	12.1	8.1	9.0	7.4	12.7	13.1	6.7	9.8	8.2
2018	12.8	10.1	6.2	7.4	12.2	13.2	6.4	10.0	8.2

Note: Three-year averages for counties and single-year estimates for NYS and NYS excluding NYC were used.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Hd24a

CHILD HEALTH

Preventive health care is important across all age groups. However, it is especially important for children and adolescents to help them avoid preventable diseases and maintain good health throughout the course of their lives. According to the US Census Bureau, 5.8% of the population in the M-H Region is under five years old; Rockland County has the highest percentage of children in this cohort (8.1%) and Ulster County has the lowest (4.4%) [see Table 22].

Children are at risk for developing certain diseases, some of which include ambulatory care sensitive (ACS) conditions. These are conditions where the use of the ED is thought to be avoidable by focusing on interventions in primary care.[265] Some ACS conditions include asthma, otitis media, gastroenteritis, and pneumonia.

ASTHMA

Asthma is caused by airway restriction in the lungs, resulting in difficulty breathing, wheezing, chest tightness, and coughing. It is a condition commonly found among children, but it can be managed and treated with medical care [see page 185].

OTITIS MEDIA

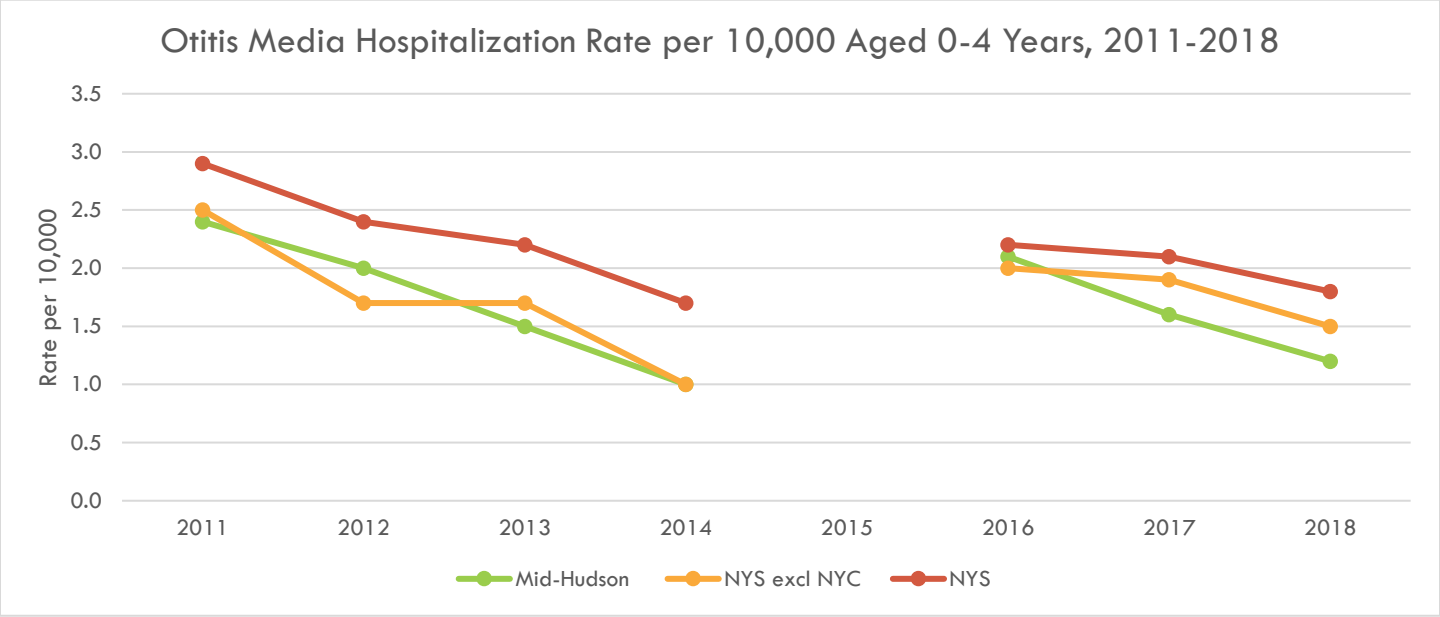
Otitis media is an infection that occurs in the middle ear and is most diagnosed in children. Even though antibiotics are typically used to clear the infection, some children are prone to having chronic ear infections. This can lead to other consequences, such as antibiotic resistance, surgery, and hearing loss. Common symptoms of otitis media include ear pain, tugging or pulling at the ear, crying more than usual, trouble hearing, fever, and drainage from the ear.[266]

From 2011 to 2018, the hospitalization rates for otitis media for children aged 0 to 4 years for most of the M-H Region counties were unstable or did not meet reporting criteria. However, when comparing the M-H Region to NYS and NYS excluding NYC, hospitalization rates steadily decreased [see Figure 331].

[265] The Journal of Pediatrics, NIH, National Library of Medicine, 2018, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5826824/, accessed August 2022

[266] Mayo Clinic, 2021, https://www.mayoclinic.org/diseases-conditions/ear-infections/symptoms-causes/syc-20351616, accessed August 2022

Figure 331



	Mid-Hudson	NYS excl NYC	NYS
2011	2.4	2.5	2.9
2012	2.0	1.7	2.4
2013	1.5	1.7	2.2
2014	1.0	1.0	1.7
2015			
2016	2.1	2.0	2.2
2017	1.6	1.9	2.1
2018	1.2	1.5	1.8

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015, from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.

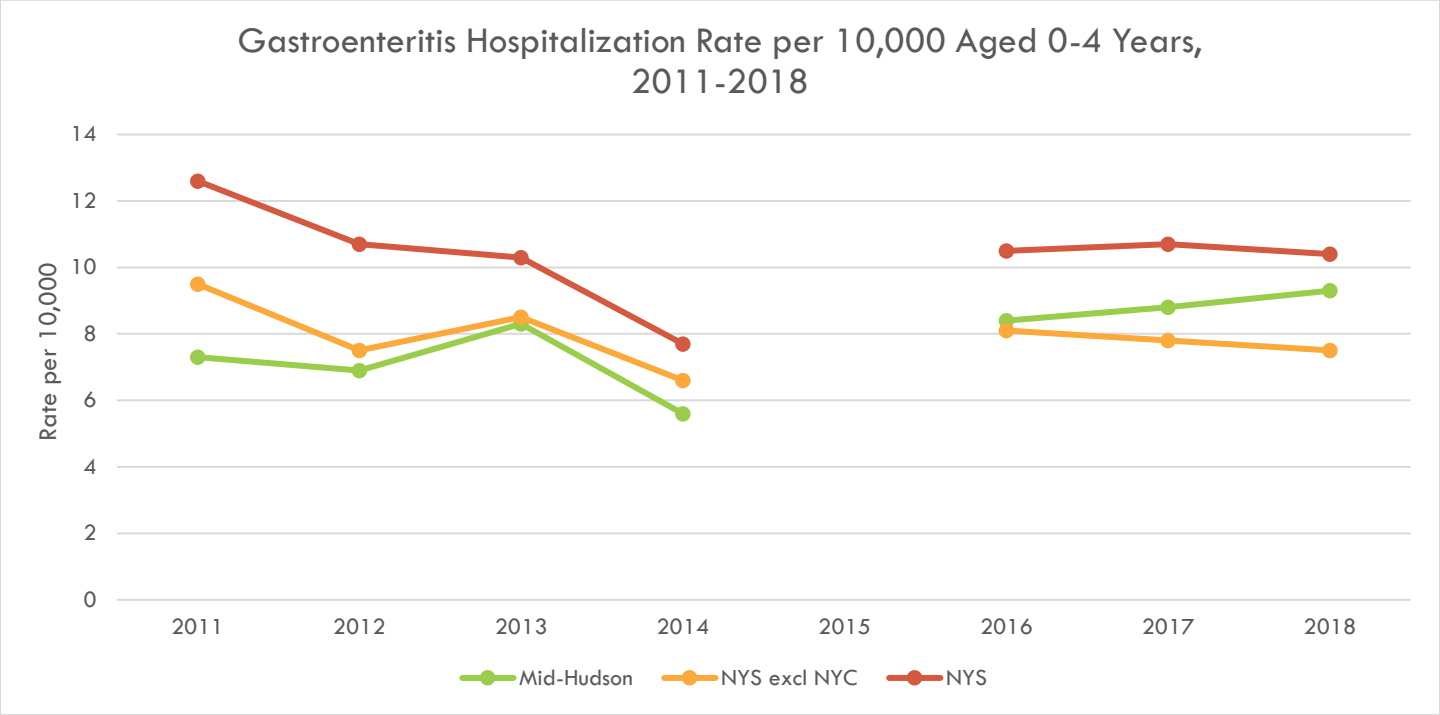
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Ch8

GASTROENTERITIS

Gastroenteritis is an intestinal infection that can affect children starting at a young age. It is typically a viral infection that causes fever, watery diarrhea, nausea, vomiting, and abdominal pain.[267] Viral infections are generally spread through contact with someone infected with the disease or by ingesting substances contaminated with the infection. Children are especially at risk at day care centers or at schools, as they can encounter other infected classmates.

From 2011 to 2018, the hospitalization rates of gastroenteritis for children 0 to 4 years of age for most of the M-H Region counties are unstable or did not meet reporting criteria. When comparing the M-H Region to NYS overall and NYS excluding NYC, the rates are not significantly different and have stayed relatively stable since 2016 [see Figure 332].

Figure 332



	Mid-Hudson	NYS excl NYC	NYS
2011	7.3	9.5	12.6
2012	6.9	7.5	10.7
2013	8.3	8.5	10.3
2014	5.6	6.6	7.7
2015			
2016	8.4	8.1	10.5
2017	8.8	7.8	10.7
2018	9.3	7.5	10.4

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015, from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Ch7

[267] Mayo Clinic, 2022, https://www.mayoclinic.org/diseases-conditions/viral-gastroenteritis/symptoms-causes/syc-20378847, accessed August 2022

PNEUMONIA

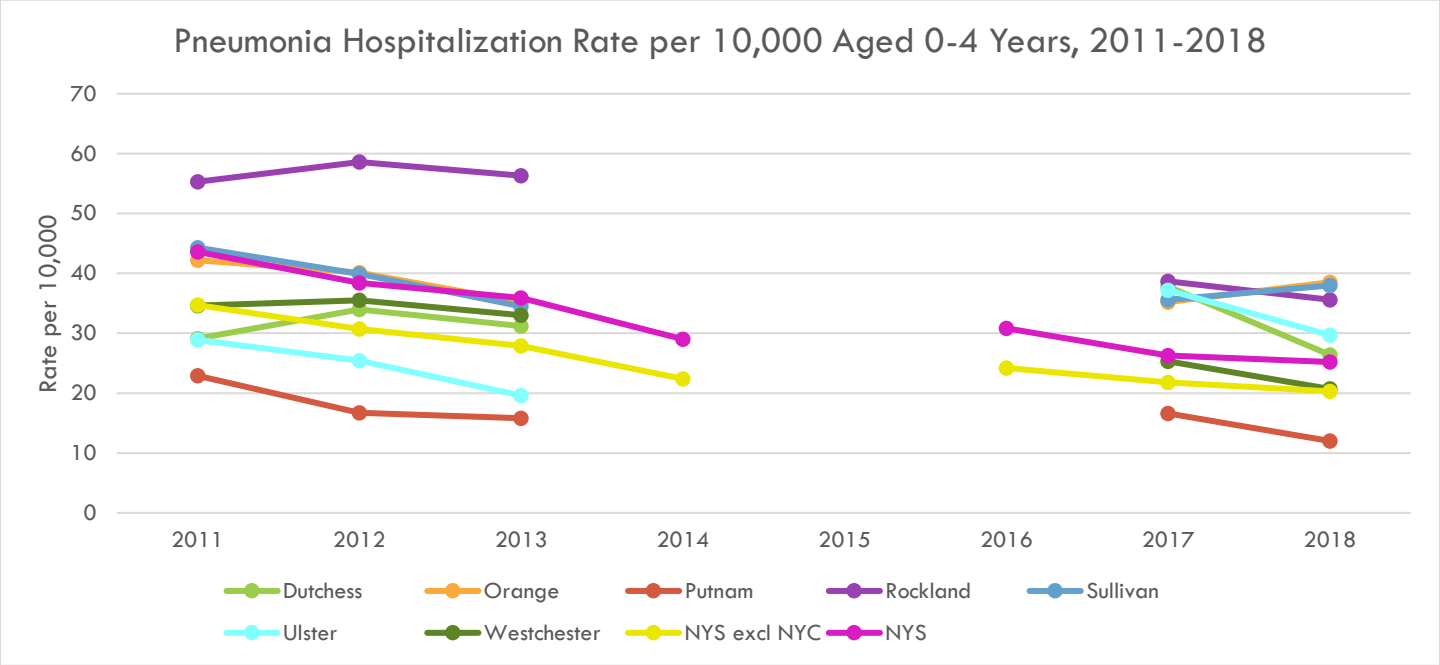
Pneumonia is an infection that causes inflammation in the air sacs in one or both lungs. Pneumonia can be caused by bacteria, viruses, or fungi. It can lead to serious consequences in young children, as well as people over the age of 65. Symptoms of pneumonia include fever, cough, chest pain, and shortness of breath. Hospitalization, tobacco use, or having a weakened immune system can put people at a greater risk of developing pneumonia.[268]

When looking at pneumonia hospitalization rates from 2017 to 2019 among children 0 to 4 years of age, the M-H Region had a higher rate compared to NYS and NYS excluding NYC (28.3 vs 25.2 and 20.3 per 10,000 population, respectively). Sullivan and Orange Counties led in hospitalization rates within the M-H Region (38.0 and 38.5 per 10,000 population, respectively), and Putnam had the lowest rate (12.0 per 10,000 population) in the region. Rates have generally decreased since 2011 for all seven counties, as well as NYS excluding NYC and NYS [see Figure 333].

It is important that children be vaccinated to prevent pneumococcal infection. For more information about vaccination rates, please see page 256.

[268] Mayo Clinic, 2020, https://www.mayoclinic.org/diseases-conditions/pneumonia/symptoms-causes/syc-20354204, accessed August 2022

Figure 333



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	29.1	42.2	22.9	55.3	44.3	28.9	34.6	34.7	43.6
2012	34.0	40.1	16.7	58.6	39.9	25.4	35.5	30.7	38.4
2013	31.2	35.2	15.8	56.3	34.5	19.6	33.0	27.9	35.9
2014								22.4	29.0
2015									
2016								24.2	30.8
2017	37.8	35.2	16.6	38.7	35.6	37.2	25.3	21.8	26.3
2018	26.4	38.5	12.0	35.6	38.0	29.7	20.7	20.3	25.2

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015, from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=it&ind_id=Ch9

ENVIRONMENTAL INDICATORS

SAFETY

INJURY

Unintentional injury was the third leading cause of death in NYS in 2019, accounting for 7,308 deaths across the state. For New Yorkers aged 1 to 44, it was the number one cause of death.[269] Beyond death, consequences from injuries include financial burden, disability, poor mental health, and lost productivity.[270] Injuries may be intentional (i.e., assault, suicide) or unintentional (i.e., falls, motor vehicle accidents). Well-established patterns and risk factors make injuries predictable and preventable. [271]

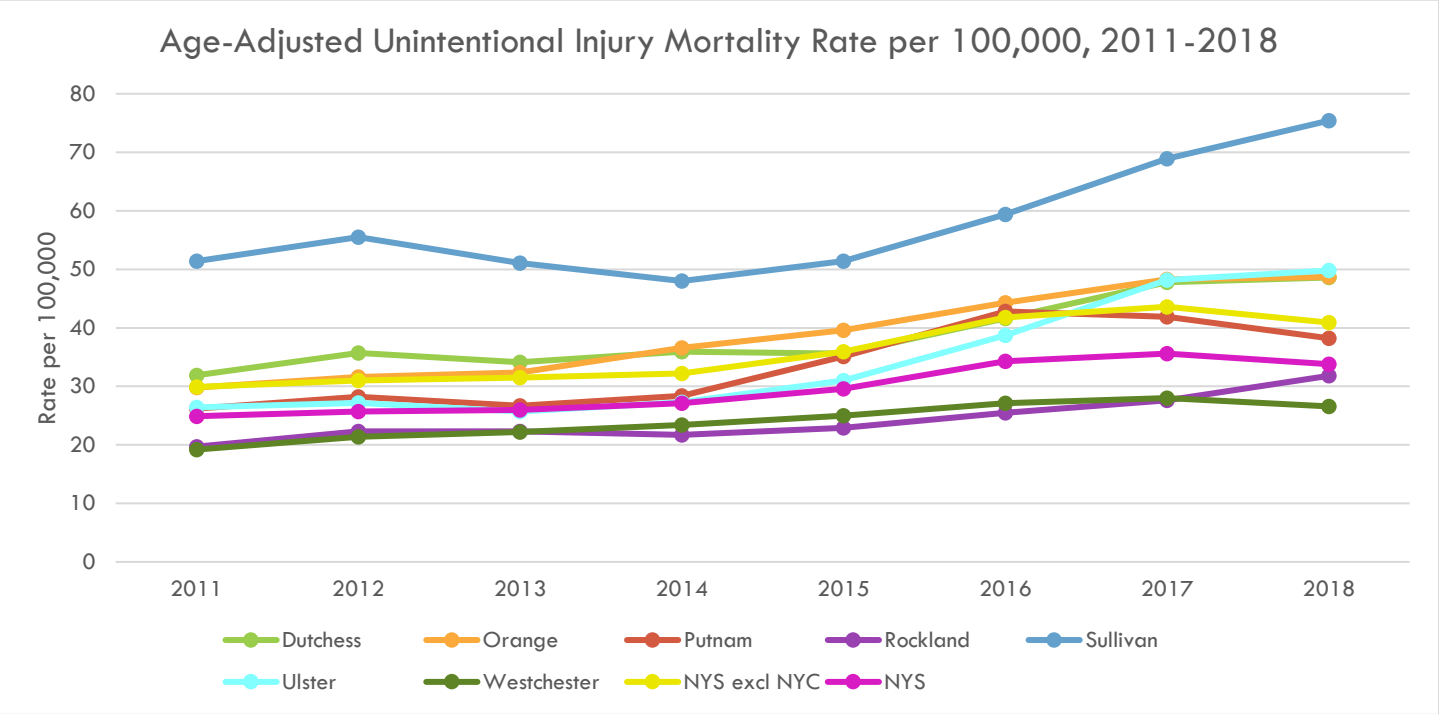
In the M-H Region in 2018, Sullivan County had the highest unintentional injury mortality rate (75.4 per 100,000 population), while Westchester County had the lowest (26.6 per 100,000 population). From 2011 to 2018, all seven counties, as well as NYS excluding NYC and NYS, have had slight increases in the unintentional injury mortality rate [see Figure 334].

[269] New York State Department of Health, 2022, https://apps.health.ny.gov/public/tabvis/PHIG_Public/lcd/reports/#county, accessed May 2022

[270] Healthy People 2020, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://www.healthypeople.gov/2020/topics-objectives/topic/injury-and-violence-prevention, accessed May 2022

[271] New York State Department of Health, 2022, https://www.health.ny.gov/prevention/injury_prevention/, accessed May 2022

Figure 334



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	31.9	29.8	26.2	19.7	51.4	26.4	19.2	29.9	24.9
2012	35.7	31.6	28.2	22.3	55.5	27.2	21.4	31.0	25.7
2013	34.1	32.4	26.7	22.3	51.1	25.7	22.2	31.5	26.0
2014	35.9	36.6	28.4	21.7	48.0	27.3	23.4	32.2	27.1
2015	35.6	39.6	35.1	22.9	51.4	31.0	25.0	35.9	29.6
2016	41.6	44.3	42.8	25.5	59.4	38.7	27.1	41.8	34.3
2017	47.8	48.3	41.9	27.6	68.9	48.2	28.0	43.6	35.6
2018	48.6	48.7	38.2	31.8	75.4	49.8	26.6	40.9	33.8

Note: Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicators Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hd27

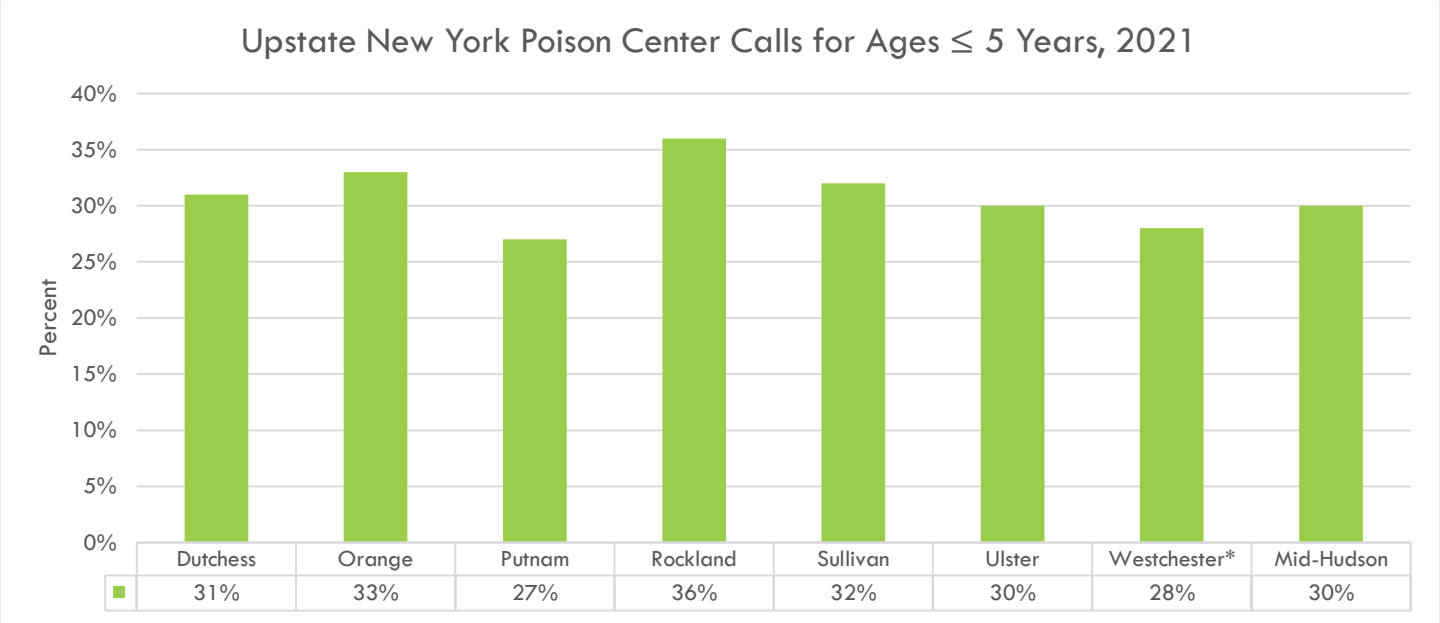
POISONINGS

In 2020, 98.3% of fatal unintentional poisonings in the US occurred in individuals older than 19 years of age,[272] and 95% were attributable to drug, predominantly opioid, overdoses.[273] In contrast, 42% of non-fatal poison exposures in 2020 occurred in children under 5 years old and were largely attributable to the ingestion of personal care and household cleaning products.[274]

The American Association of Poison Control Centers represents and manages data from the 55 US Poison Control Centers (PCC) which provide real-time poison exposure education and prevention services via telephone. The Upstate New York Poison Control Center covers 54 counties in NYS excluding NYC, and the NYC Poison Center services NYC, Long Island, and Westchester County. To get in touch with the poison control center in your area, dial 1-800-222-1222.[275]

In 2021, these centers handled a total of 130,670 calls statewide and 12,115 calls from M-H Region counties. Reflective of national data, a high rate of calls pertained to children aged 5 years and under, a population not responsible for managing their own environment. Poison Centers play a critical role in preventing unnecessary health care costs by delineating exposures that can be managed at home. Rockland County had the highest proportion of calls about poison exposures for children aged 5 and under (36%) and Putnam County had the lowest (27%). Across the region, more than 80% of these calls were managed at home.

Figure 335



: Data for Westchester provided by NYC Poison Center.
Source: By request- Upstate NY Poison Center 2021; Data for Westchester provided by NYC Poison Center
National Poison Data System, https://www.poison.org/poison-statistics-national

[272] NSC Injury Facts, https://injuryfacts.nsc.org/home-and-community/safety-topics/poisoning/, accessed May 2022

[273] NSC Injury Facts, https://injuryfacts.nsc.org/home-and-community/safety-topics/poisoning/data-details/, accessed May 2022

[274] NSC Injury Facts, https://injuryfacts.nsc.org/home-and-community/safety-topics/poisoning/, accessed May 2022

[275] American Association of Poison Control Centers, https://aapcc.org/, accessed June 2022

MOTOR VEHICLE ACCIDENTS

Motor vehicle accidents are one of the leading causes of injury and death for all age groups. According to the CDC, in 2020 there were over 2.1 million emergency department visits for injuries from motor vehicle accidents and more than 40,000 deaths due to motor vehicle accidents in the US, equivalent to more than 110 people killed in crashes every day.[276] Major risk factors for motor vehicle-related deaths include speeding, not wearing seat belts, and drunk driving.[277] There are proven strategies targeting risk factors that can be implemented to help prevent motor vehicle-related injuries and fatalities.

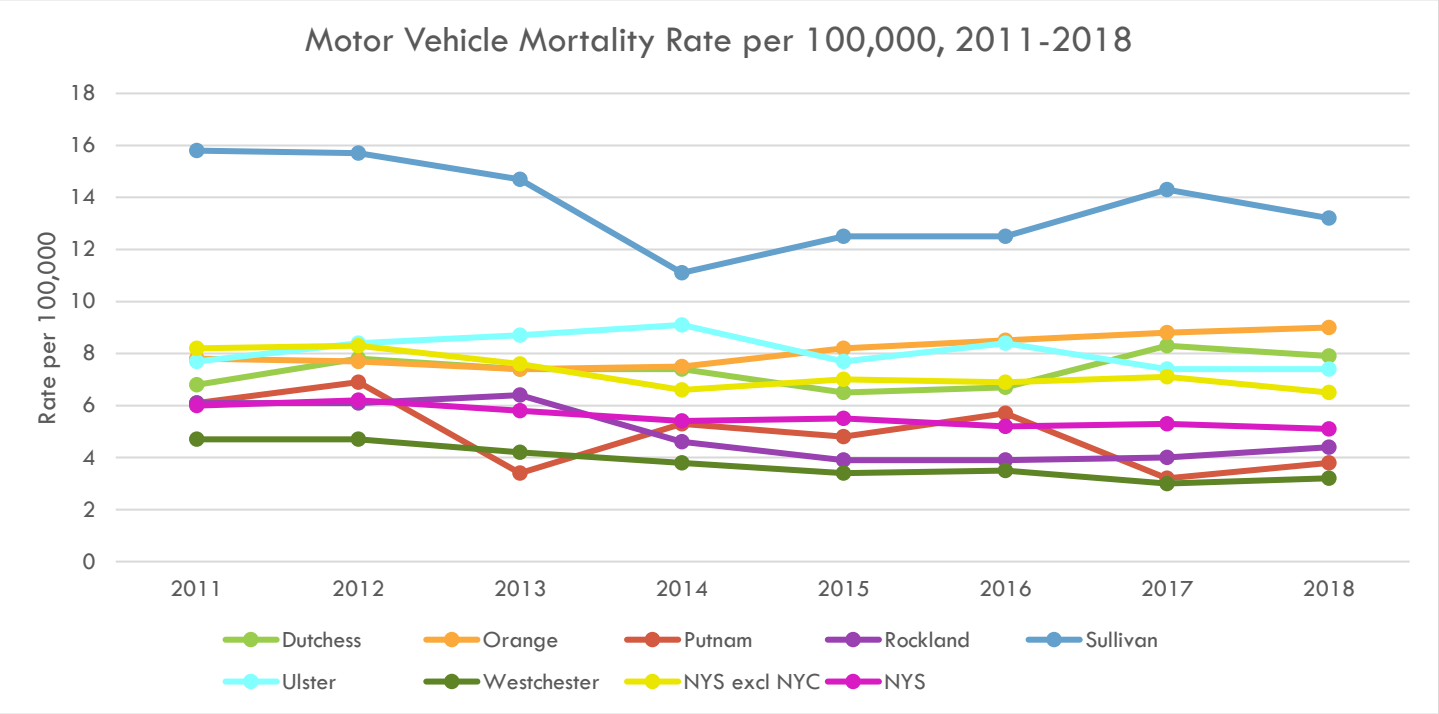
In 2018, Sullivan County had the highest motor vehicle-related mortality rate in the M-H Region at 13.2 per 100,000 population and was the only county above the Healthy People 2030 target of 10.1 per 100,000.[278] Westchester (3.2 per 100,000) and Putnam County (3.8 per 100,000) had the lowest motor vehicle mortality rates. From 2011 to 2018, motor vehicle mortality rates have stayed relatively stable, with some fluctuations [see Figure 336].

[276] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/transportationsafety/index.html, accessed May 2022

[277] IIHS HLDI, 2022, https://www.iihs.org/topics/fatality-statistics/detail/yearly-snapshot, accessed May 2022

[278] Healthy People 2030, Office of Disease Prevention and Health Promotion, US Department of Health and Human Services, https://health.gov/healthypeople/objectives-and-data/browse-objectives/injury-prevention/reduce-deaths-motor-vehicle-crashes-ivp-06, accessed June 2022

Figure 336

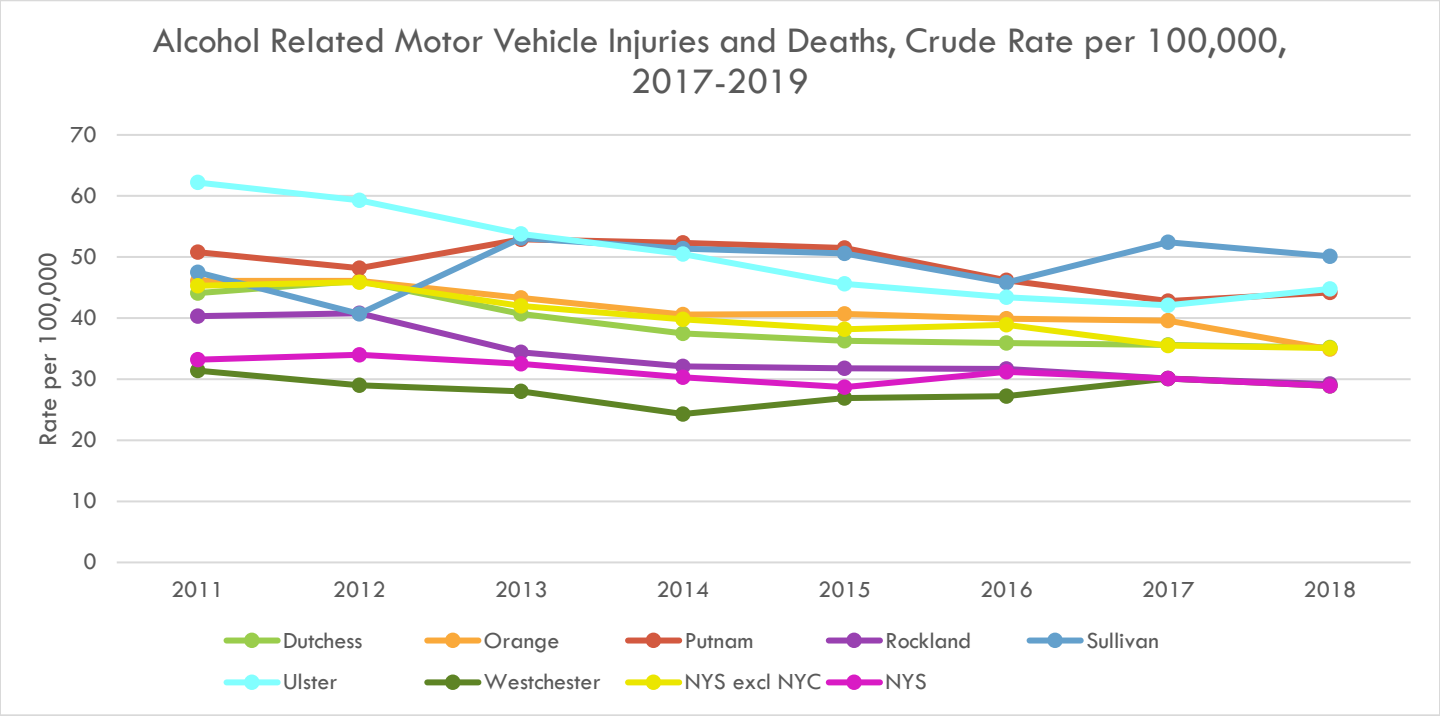


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	6.8	7.8	6.1	6.1	15.8	7.7	4.7	8.2	6.0
2012	7.8	7.7	6.9	6.1	15.7	8.4	4.7	8.3	6.2
2013	7.4	7.4	3.4	6.4	14.7	8.7	4.2	7.6	5.8
2014	7.4	7.5	5.3	4.6	11.1	9.1	3.8	6.6	5.4
2015	6.5	8.2	4.8	3.9	12.5	7.7	3.4	7.0	5.5
2016	6.7	8.5	5.7	3.9	12.5	8.4	3.5	6.9	5.2
2017	8.3	8.8	3.2	4.0	14.3	7.4	3.0	7.1	5.3
2018	7.9	9.0	3.8	4.4	13.2	7.4	3.2	6.5	5.1

Note: Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hd28a

According to the National Highway Traffic Safety Administration (NHTSA), there was a 14% increase in deaths related to alcohol-impaired motor vehicle driving in the US from 2019 to 2020. In 2020, there were 11,654 deaths, or about 32 deaths each day.[279] Among the M-H Region's seven counties, Sullivan (50.1 per 100,000), Ulster (44.8 per 100,000), and Putnam (44.2 per 100,000) had the highest incidence of injuries and fatalities due to alcohol related driving accidents in 2018, while Westchester had the lowest incidence rate at 28.9 per 100,000. From 2011 to 2018, most counties have had slight decreases each year in the rate of alcohol related injuries and fatalities [see Figure 337].

Figure 337



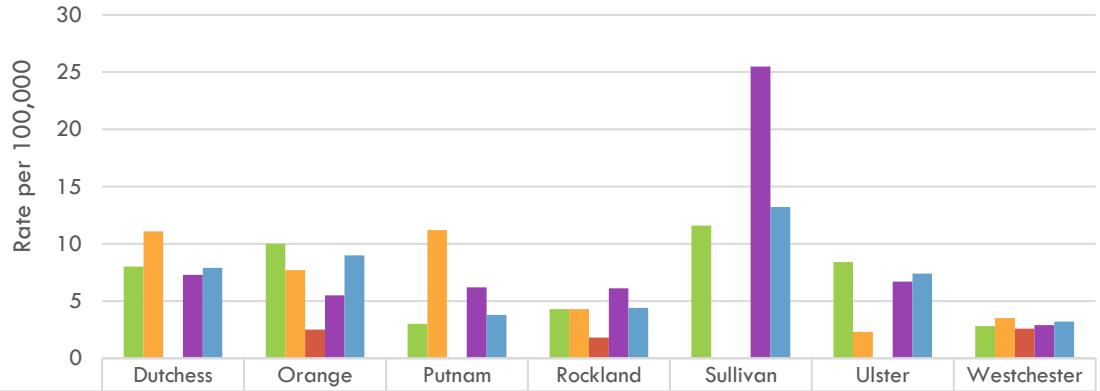
	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	44.1	46.1	50.8	40.3	47.5	62.2	31.4	45.3	33.2
2012	46.1	46.1	48.2	40.8	40.7	59.3	29.0	45.9	34.0
2013	40.7	43.3	52.9	34.4	53.1	53.8	28.0	42.0	32.5
2014	37.5	40.6	52.3	32.1	51.4	50.5	24.3	39.8	30.3
2015	36.3	40.7	51.5	31.8	50.6	45.6	26.9	38.2	28.7
2016	35.9	39.9	46.2	31.7	45.8	43.4	27.2	38.9	31.2
2017	35.6	39.6	42.8	30.1	52.4	42.1	30.1	35.5	30.1
2018	35.2	34.9	44.2	29.2	50.1	44.8	28.9	35.1	28.9

Note: Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hg107

[279] NHTSA, United States Department of Transportation, https://www.nhtsa.gov/risky-driving/drunk-driving#age-5056, accessed September 2022

Motor vehicle mortality rates are known to vary by age and gender. In the US in 2020, males had a higher motor vehicle mortality rate than females in all age groups. The highest motor vehicle mortality rate was seen in persons 20 to 24 years of age.[280] Determining motor vehicle-related fatalities by race and ethnicity allows counties to target prevention messaging further if disparities are detected. According to Figure 338, Hispanics in Sullivan County had the highest motor vehicle mortality rate in the M-H Region, with 25.5 per 100,000 population. Westchester County had the lowest total rate and there were no significant differences among the various race/ethnicity groups.

Figure 338



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester
Non-Hispanic White	8.0	10.0	3.0 *	4.3	11.6	8.4	2.8
Non-Hispanic Black	11.1	7.7	11.2 *	4.3 *	0.0 *	2.3 *	3.5
Non-Hispanic Asian/Pacific Islander	0.0 *	2.5 *	0.0 *	1.8 *	0.0 *	0.0 *	2.6 *
Hispanic	7.3 *	5.5	6.2 *	6.1 *	25.5	6.7 *	2.9
Total	7.9	9.0	3.8	4.4	13.2	7.4	3.2

*: *Fewer than ten events in the numerator; therefore, the percentage is unstable*
Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

FALLS

Falls account for a significant risk of injury for all age groups. Adults aged 65 years and older are at the greatest risk for falls, with more than one out of four adults in this age group experiencing a fall each year. Risk factors for falls include lower body weakness, certain medications, poor vision, vitamin D deficiency, foot pain or poor footwear, and environmental hazards such as broken steps, throw rugs, and clutter. Consequences of falls include:

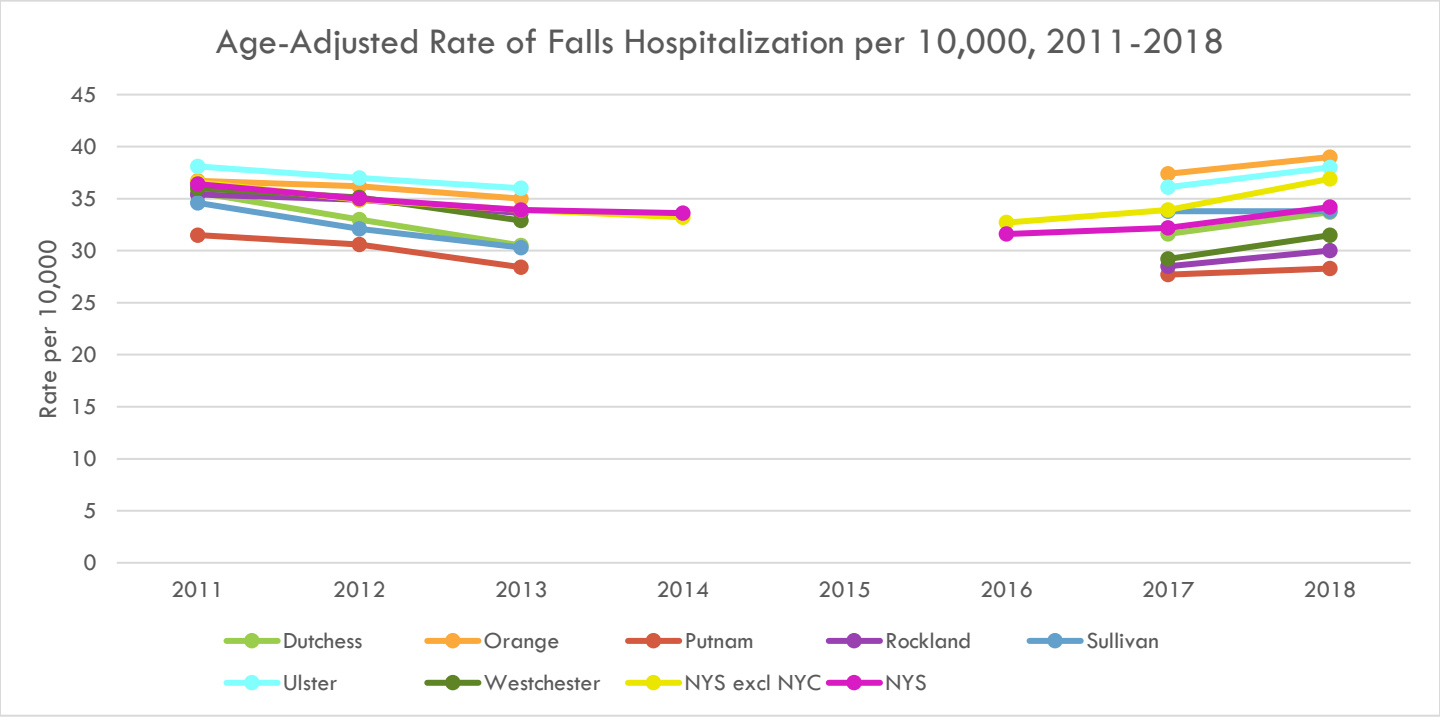
- Cause 95% of hip fractures
- Most common cause of traumatic brain injury
- Lead to decreased activity due to fear of falling, which may exacerbate weakness and subsequent risk of falling again

[280] IIHS HLDI, 2022, https://www.iihs.org/topics/fatality-statistics/detail/yearly-snapshot, accessed May 2022

- In general, falls are costly. In 2015, medical costs for falls totaled more than $50 billion, of which 75% is paid for by Medicare and Medicaid.[281]

In the M-H Region in 2018, Orange and Ulster Counties had the highest rate of hospitalizations due to falls (39.0 and 38.0 per 10,000, respectively). They exceeded the NYS rate of 34.2 per 10,000, while Putnam and Rockland had the lowest rate of falls at 28.3 and 30.0 per 10,000, respectively. Since 2011, the rate of hospitalizations due to falls has decreased slightly for most counties [see Figure 339].

Figure 339



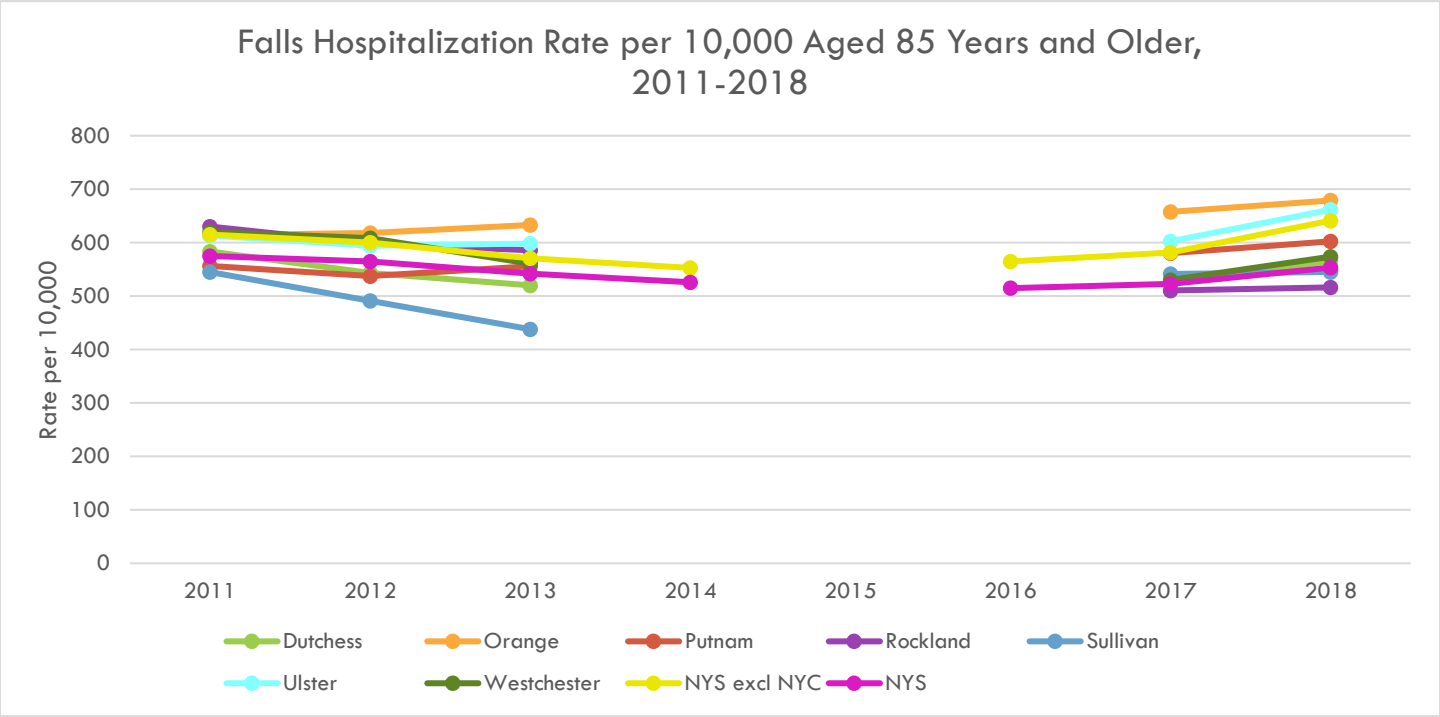
	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	35.6	36.7	31.5	35.4	34.6	38.1	36.0	36.6	36.4
2012	33.0	36.2	30.6	34.9	32.1	37.0	35.1	34.9	35.0
2013	30.5	35.0	28.4	33.6	30.3	36.0	32.9	33.9	33.9
2014								33.2	33.6
2015									
2016								32.7	31.6
2017	31.6	37.4	27.7	28.5	33.8	36.1	29.2	33.9	32.2
2018	33.7	39.0	28.3	30.0	33.8	38.0	31.5	36.9	34.2

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015, from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hh24a

[281] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/falls/facts.html, accessed June 2022

When examined by age category, the highest rates of hospitalizations for falls are seen in the individuals aged 85 years and older. In the M-H Region in 2018, the highest rates of hospitalization due to falls in those aged 85 years or older were seen in Orange and Ulster Counties (678.9 and 661.7 per 10,000, respectively). The lowest rate was seen in Rockland County (516.5 per 10,000). The rate has remained relatively stable from 2011 to 2018 [see Figure 340].

Figure 340

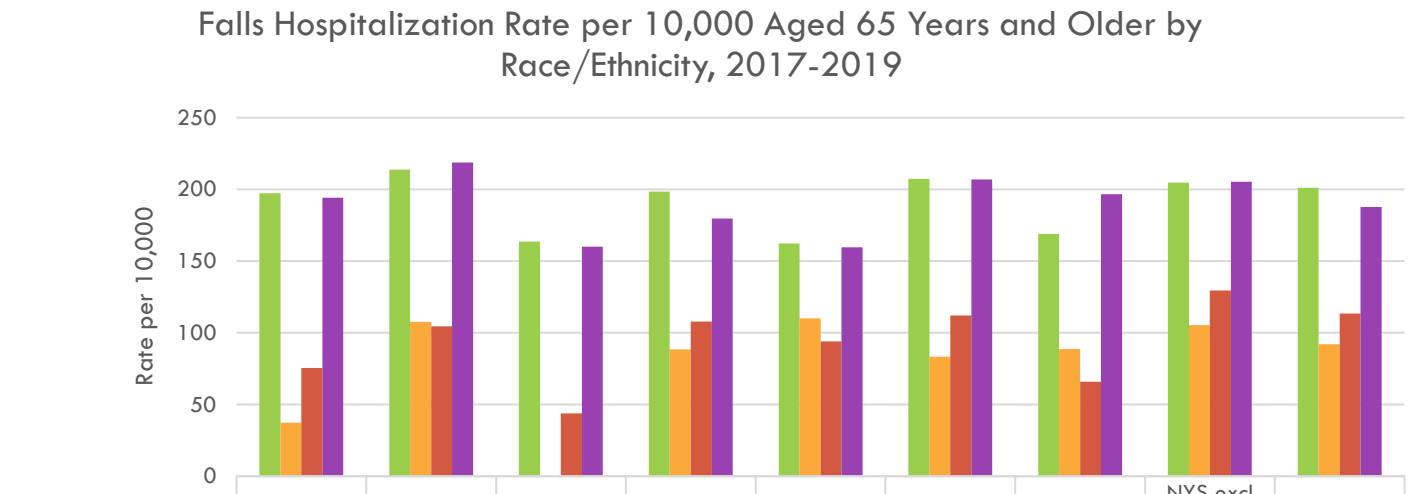


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	583.4	614.0	556.3	630.1	544.7	613.2	620.0	614.8	575.0
2012	543.2	618.0	537.5	598.1	491.4	594.2	608.5	600.0	564.6
2013	520.1	633.3	555.9	586.0	438.0	598.0	560.7	571.0	541.7
2014								552.7	525.6
2015									
2016								564.6	514.8
2017	527.3	657.3	580.4	510.5	541.3	602.5	530.1	581.5	522.7
2018	565.4	678.9	602.4	516.5	545.2	661.7	573.6	641.1	553.5

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015, from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicators Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hh31

When examining hospitalizations due to falls in persons aged 65 years and older from 2017 to 2019, the highest rates were again seen in Orange and Ulster Counties (218.8 and 206.9 per 10,000, respectively). The lowest rates were seen in Sullivan (159.7 per 10,000) and Putnam (160.1 per 10,000). When further broken down by race/ethnicity, the non-Hispanic White population had the highest rates of fall-related hospitalizations in all counties. The Hispanic population had the second-highest rate of fall-related hospitalizations per 10,000 in Rockland, Ulster, and Dutchess Counties. The non-Hispanic Black population had higher rates of fall-related hospitalizations in Orange, Sullivan, and Ulster Counties. Rates for non-Hispanic Blacks in Putnam County were suppressed due to low numbers [see Figure 341].

Figure 341



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS +
Non-Hispanic White	197.3	213.7	163.7	198.4	162.3	207.4	168.9	204.7	201.0
Non-Hispanic Black	37.3	107.6	s	88.5	110.0	83.3	88.6	105.3	92.0
Hispanic	75.4	104.5	43.8	107.8	94.0	112.1	66.0	129.6	113.4
Total	194.2	218.8	160.1	179.7	159.7	206.9	196.6	205.3	187.8

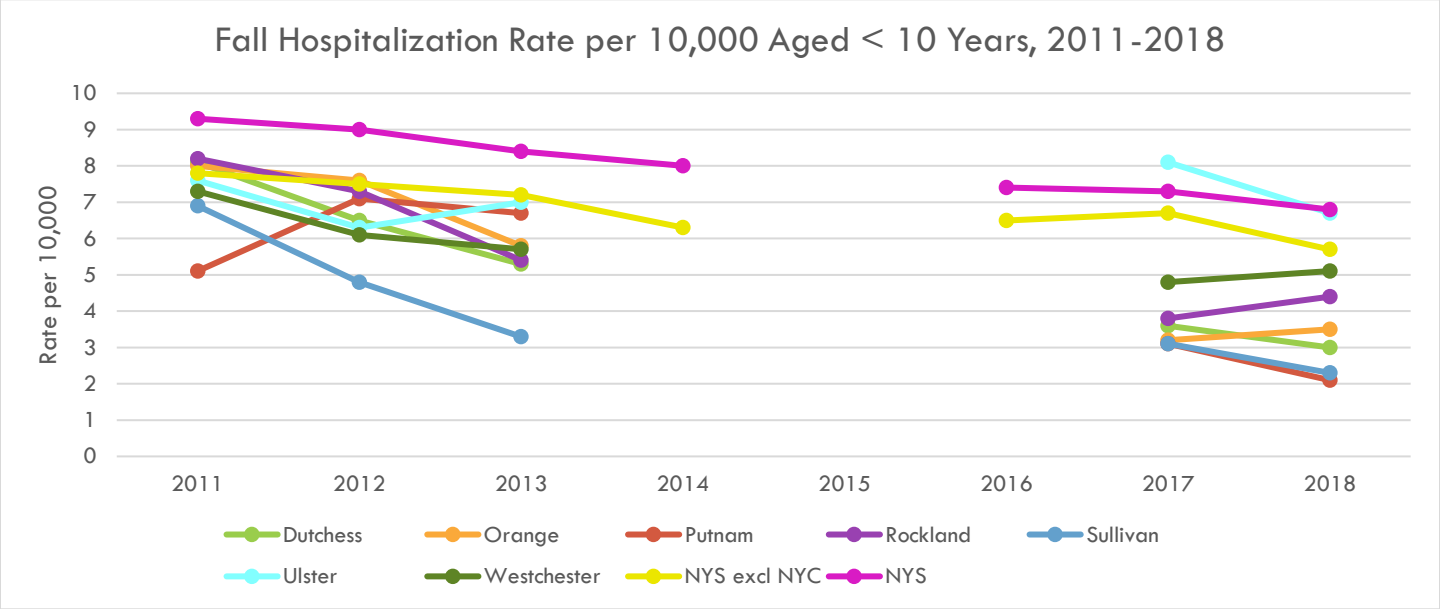
s: Data are suppressed. The data do not meet the criteria for confidentiality.
+: The 2019 ED data in NYC may be incomplete and subject to change. Thus, the state rates may be underestimated and subject to change.
Source: NYSDOH County Health Indicators by Race/Ethnicity (CHIRE), 2022
https://www.health.ny.gov/statistics/community/minority/county/county_list.htm

YOUNG CHILDREN

According to the CDC, falls are a leading cause of unintentional injury in children.[282] In NYS, the rates of hospitalization due to falls are higher in children under 10 years of age than in children aged 10 to 14 years of age and adolescents and young adults aged 15 to 24 years.

In the M-H Region in 2018, all seven counties had lower rates of fall-related hospitalization in children under 10 years of age than that for NYS. Among the counties, Ulster County had the highest rate at 6.7 per 10,000. Putnam County had the lowest rate (2.1 per 10,000); however, the rate is unstable with fewer than 10 events in the numerator. From 2011 to 2018, the rates have generally decreased [see Figure 342].

Figure 342



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	8.1	8.0	5.1	8.2	6.9	7.6	7.3	7.8	9.3
2012	6.5	7.6	7.1	7.3	4.8	6.3	6.1	7.5	9.0
2013	5.3	5.8	6.7	5.4	3.3*	7.0	5.7	7.2	8.4
2014								6.3	8.0
2015									
2016								6.5	7.4
2017	3.6	3.2	3.1*	3.8	3.1*	8.1	4.8	6.7	7.3
2018	3.0	3.5	2.1*	4.4	2.3*	6.7	5.1	5.7	6.8

*: *Fewer than 10 events in the numerator, therefore the rate/percentage is unstable*
Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015, from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hh25

[282] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/injury/features/child-injury/, accessed June 2022

WORKPLACE INJURIES/ACCIDENTS

According to the CDC, workplace-related injuries are most commonly caused by overexertion, contact with objects and equipment, slips, trips, and falls.[283] In 2019, the national rate of work-related injuries treated in emergency rooms was 156 per 10,000 full-time workers, with men accounting for approximately 64% of cases and workers less than 25 years of age having higher rates than other age groups.[283] When comparing injuries across industries in 2019, agriculture, forestry, fishing, and hunting had the highest workplace injury fatality rate (23.1 per 100,000 workers), while transportation and warehousing had the highest nonfatal injury and illness rate (201.6 per 10,000 workers).[284] Workplace injuries result in direct costs (i.e., medical expenses) and wage and productivity loss due to missed days of work.[285]

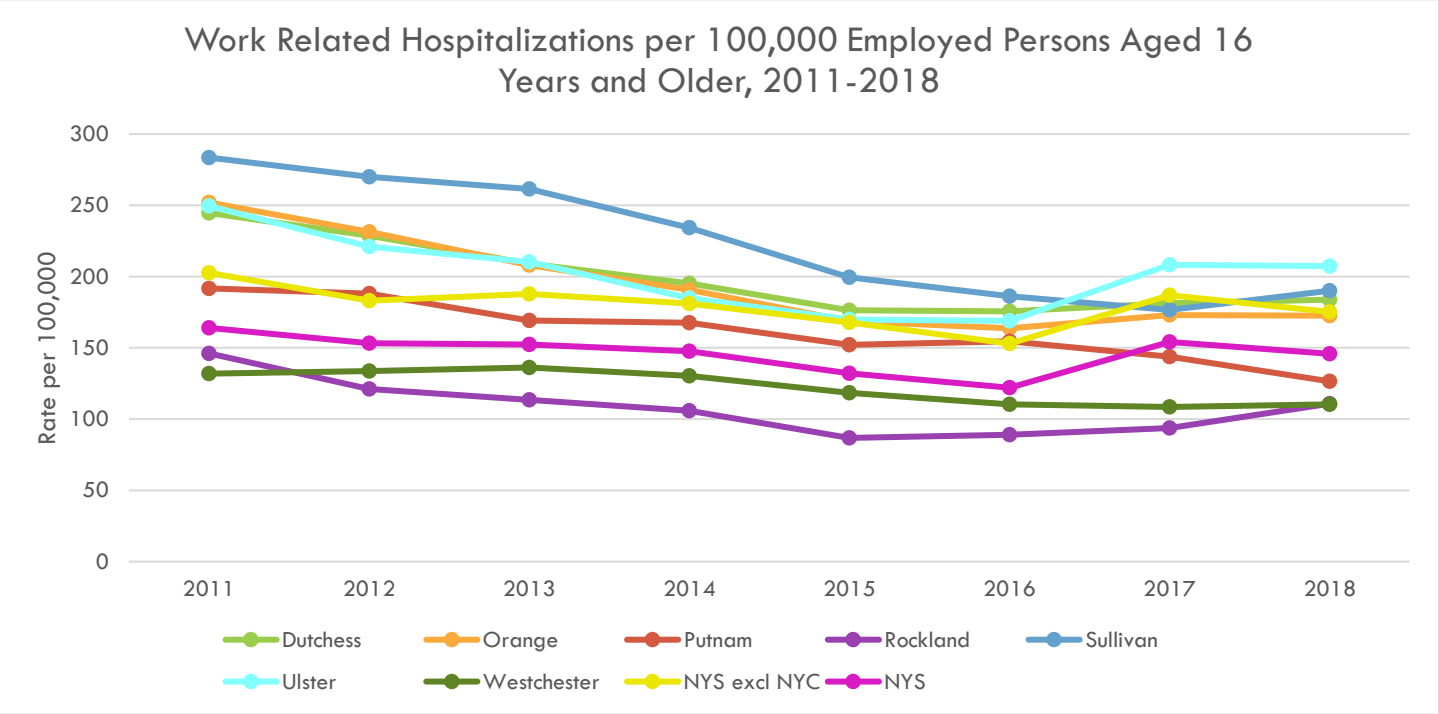
In 2018, Ulster County had the highest rate of work-related hospitalizations at 207.4 per 100,000 employed persons. The lowest rate was seen in Rockland County (110.7 per 100,000). The rates in Dutchess, Orange, Sullivan, and Ulster Counties exceeded the NYS rate (183.8, 172.6, 190.0, and 204.7 vs 145.9 per 100,000, respectively). From 2011 to 2018, the rates have generally decreased in all seven counties, as well as NYS excluding NYC and NYS [see Figure 343].

[283] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/niosh/injury/fastfacts.html, accessed September 2022

[284] NSC Injury Facts, https://injuryfacts.nsc.org/work/industry-incidence-rates/most-dangerous-industries/, accessed June 2022

[285] NSC Injury Facts, https://injuryfacts.nsc.org/work/costs/work-injury-costs/, accessed June 2022

Figure 343

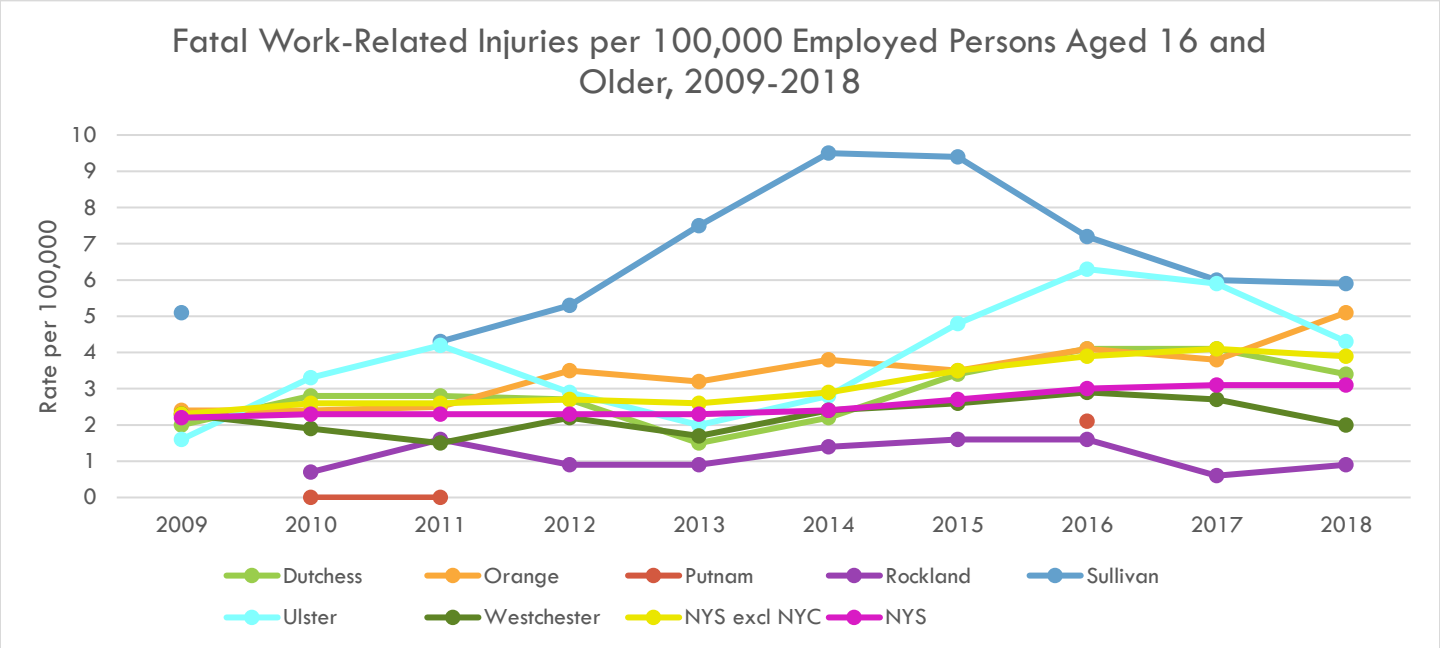


	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	244.6	252.0	191.7	146.1	283.5	249.5	132.0	202.6	164.0
2012	228.7	231.4	188.1	121.1	270.1	221.1	133.8	183.2	153.3
2013	209.1	208.0	169.2	113.5	261.5	210.3	136.2	187.9	152.4
2014	195.3	190.8	167.5	105.9	234.3	185.0	130.4	181.1	147.7
2015	176.4	168.8	152.0	86.8	199.5	169.8	118.4	167.8	132.1
2016	175.6	163.7	154.6	88.9	186.3	168.9	110.4	152.9	122.0
2017	181.4	173.1	143.7	93.8	176.6	208.2	108.5	186.8	154.2
2018	183.8	172.6	126.5	110.7	190.0	207.4	110.3	175.2	145.9

Note: Three-year averages are used for counties and single-year rate are used for NYS excluding NYC and NYS.
Source: NYSDOH Community Health Indicator Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Kg81

When looking at work-related fatalities in the same population for the same time period, the highest rate was seen in Sullivan County at 5.9 per 100,000, compared to the lowest rate of 0.9 per 100,000 in Rockland County. From 2011 to 2018, most counties had unstable or suppressed rates of work-related fatalities [see Figure 344].

Figure 344



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2009	2.0*	2.4	s	s	5.1*	1.6*	2.3	2.3	2.2
2010	2.8	2.4	0.0*	0.7*	s	3.3*	1.9	2.6	2.3
2011	2.8	2.5	0.0*	1.6*	4.3*	4.2*	1.5	2.6	2.3
2012	2.7	3.5	s	0.9*	5.3*	2.9*	2.2	2.7	2.3
2013	1.5*	3.2	s	0.9*	7.5*	2.0*	1.7	2.6	2.3
2014	2.2*	3.8	s	1.4*	9.5*	2.8*	2.4	2.9	2.4
2015	3.4	3.5	s	1.6*	9.4*	4.8	2.6	3.5	2.7
2016	4.1	4.1	2.1*	1.6*	7.2*	6.3	2.9	3.9	3.0
2017	4.1	3.8	s	0.6*	6.0*	5.9	2.7	4.1	3.1
2018	3.4	5.1	s	0.9*	5.9*	4.3	2.0	3.9	3.1

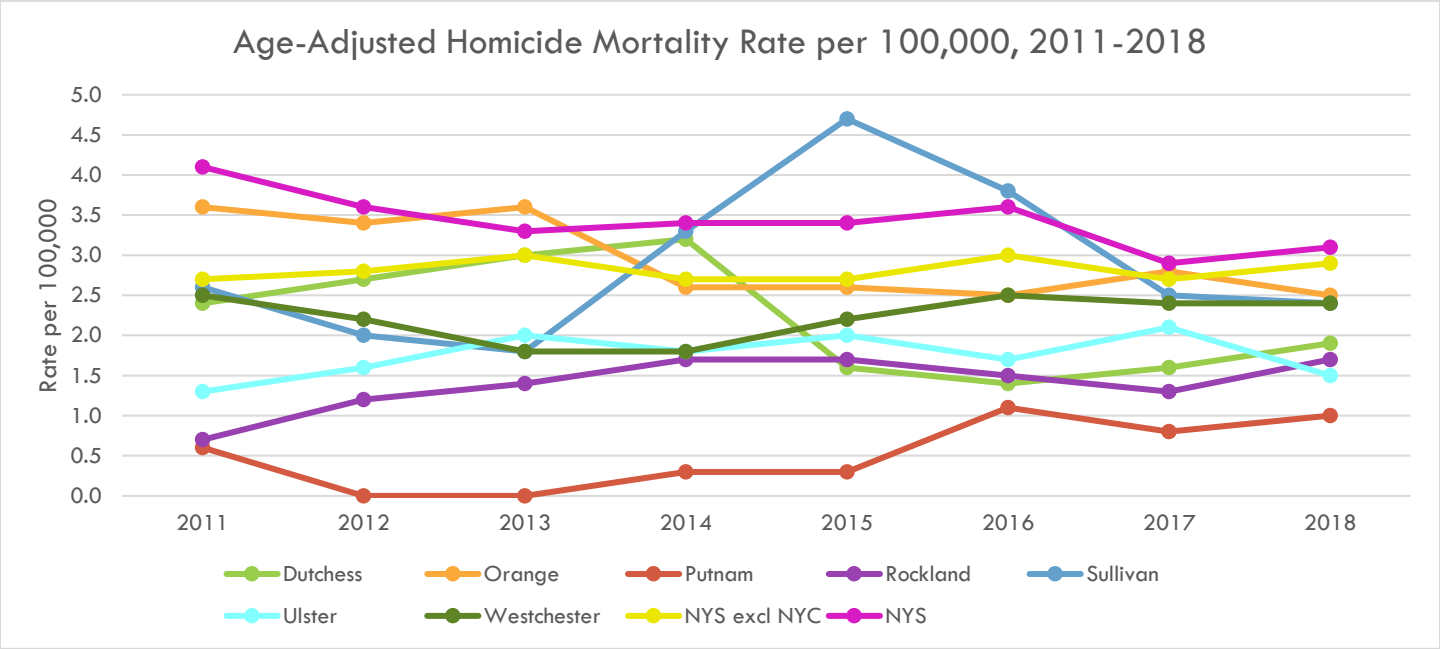
**: Fewer than 10 events in the numerator, therefore the percentage is unstable*
s: Data does not meet reporting criteria
Note: Three-year averages are used.
Source: NYSDOH Community Health Indicators Reports (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Kg83

DOMESTIC VIOLENCE / INTRAPERSONAL VIOLENCE

Violence is a widespread problem with serious impacts on public health in the US. According to the CDC, in 2019 more than 19,100 people died by homicide and more than 1.5 million people were treated in emergency departments due to assault-related injuries.[286] In 2020, at 4.7 per 100,000 population, NYS had the 17th lowest homicide mortality rate among the states.[287]

In 2018, all seven counties in the M-H Region had homicide mortality rates lower than the NYS rate of 3.1 per 100,000 population. Among the counties, Orange had the highest rate at 2.5 per 100,000 population while Ulster and Putnam had the lowest rates at 1.5 and 1.0 per 100,000 population, respectively. From 2011 to 2018, homicide mortality rates fluctuated; however, the NYS excluding NYC and NYS rates were generally higher than the seven counties' rates [see Figure 345].

Figure 345



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	2.4	3.6	0.6*	0.7*	2.6*	1.3*	2.5	2.7	4.1
2012	2.7	3.4	0.0*	1.2	2.0*	1.6*	2.2	2.8	3.6
2013	3.0	3.6	0.0*	1.4	1.8*	2.0	1.8	3.0	3.3
2014	3.2	2.6	0.3*	1.7	3.3*	1.8*	1.8	2.7	3.4
2015	1.6	2.6	0.3*	1.7	4.7*	2.0	2.2	2.7	3.4
2016	1.4	2.5	1.1*	1.5	3.8*	1.7*	2.5	3.0	3.6
2017	1.6	2.8	0.8*	1.3	2.5*	2.1	2.4	2.7	2.9
2018	1.9	2.5	1.0*	1.7	2.4*	1.5*	2.4	2.9	3.1

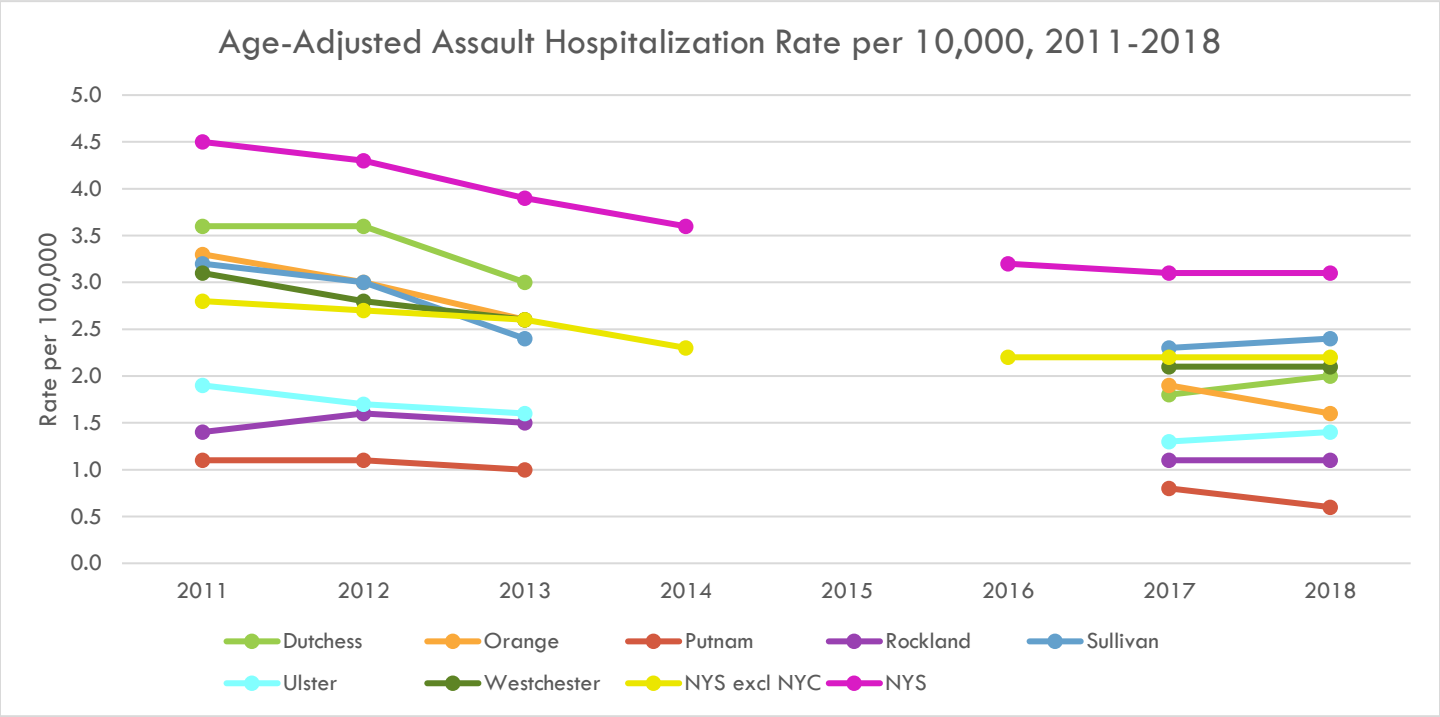
*: *Fewer than 10 events in the numerator, therefore the rate is unstable.*
Note: Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYDOH Community Health Indicator Report (CHIRS), 2022
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hd26a

[286] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/violenceprevention/about/index.html, accessed June 2022

[287] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/nchs/pressroom/sosmap/homicide_mortality/homicide.htm, accessed June 2022

In 2018, all seven counties in the M-H Region had lower rates of hospitalization for assault than the NYS rate of 3.1 per 10,000 population. Among the counties, Sullivan had the highest rate at 2.4 per 10,000 population, followed by Westchester (2.1 per 10,000 population) and Dutchess (2.0 per 100,000 population). Putnam had the lowest rate at 0.6 per 100,000 population. Rates have decreased slightly since 2011 for all counties, as well as NYS and NYS excluding NYC [see Figure 346].

Figure 346



	Three-Year Average							Single-Year	
	Dutchess	**Orange**	**Putnam**	**Rockland**	**Sullivan**	**Ulster**	**Westchester**	**NYS excl NYC**	**NYS**
2011	3.6	3.3	1.1	1.4	3.2	1.9	3.1	2.8	4.5
2012	3.6	3.0	1.1	1.6	3.0	1.7	2.8	2.7	4.3
2013	3.0	2.6	1.0	1.5	2.4	1.6	2.6	2.6	3.9
2014								2.3	3.6
2015									
2016								2.2	3.2
2017	1.8	1.9	0.8	1.1	2.3	1.3	2.1	2.2	3.1
2018	2.0	1.6	0.6	1.1	2.4	1.4	2.1	2.2	3.1

Note: The rate for 2015 is excluded due to SPARCS data transitioning on October 1, 2015, from ICD-9-CM to ICD-10-CM diagnosis codes. Since ICD-9-CM and ICD-10-CM are not comparable, an annual rate for 2015 cannot be calculated, and data for 2016-and-forward should not be compared with data for 2014-and-prior.
Three-year averages are used for counties and single-year rates are used for NYS excluding NYC and NYS.
Source: NYDOH Community Health Indicator Report (CHIRS), 2021
https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/chir_dashboard/chir_dashboard&p=it&ind_id=Hh17a

Domestic violence is abusive behavior by one intimate partner against another that may include physical violence, sexual violence, threats, and economic, emotional, and/or psychological aggression.[288] Results of the National Intimate Partner and Sexual Violence survey indicate that about one in four women and 1 in 10 men have been impacted by experiences with sexual violence, physical violence, and/or being stalked by an intimate partner. Domestic violence has wide-ranging consequences including death, injury, and mental health problems, as well as greater risk for a variety of other negative physical health outcomes.[289]

The NYS Office for the Prevention of Domestic Violence runs a Domestic and Sexual Violence Hotline (1-800-942-6906), which serves as a resource for victims of domestic violence, professionals, and those concerned for others. This is a confidential hotline that is available in multiple languages, 24 hours a day and seven days a week. In 2020, aside from NYC and Long Island, which accounted for 59% of the volume of calls, the counties with the highest volume of calls to the hotline were the following: Erie County (6%), Albany County (4%), Westchester County (4%), Orange County (4%), and Schenectady County (2%).[290]

Domestic violence counts from the NYS Division of Criminal Justice Services include victims of aggravated assault, simple assault, sex offense, and violations of an order of protection perpetrated by intimate partners. Among the seven M-H Region counties, Orange had the highest rate (447.8 per 100,000 population) and Putnam had the lowest rate (108.4 per 100,000 population) in 2020. From 2012 to 2020, rates for the counties fluctuated with Orange County consistently having the highest and Putnam County consistently having the lowest, while the NYS excluding NYC and NYS rates stayed relatively stable [see Figure 347].

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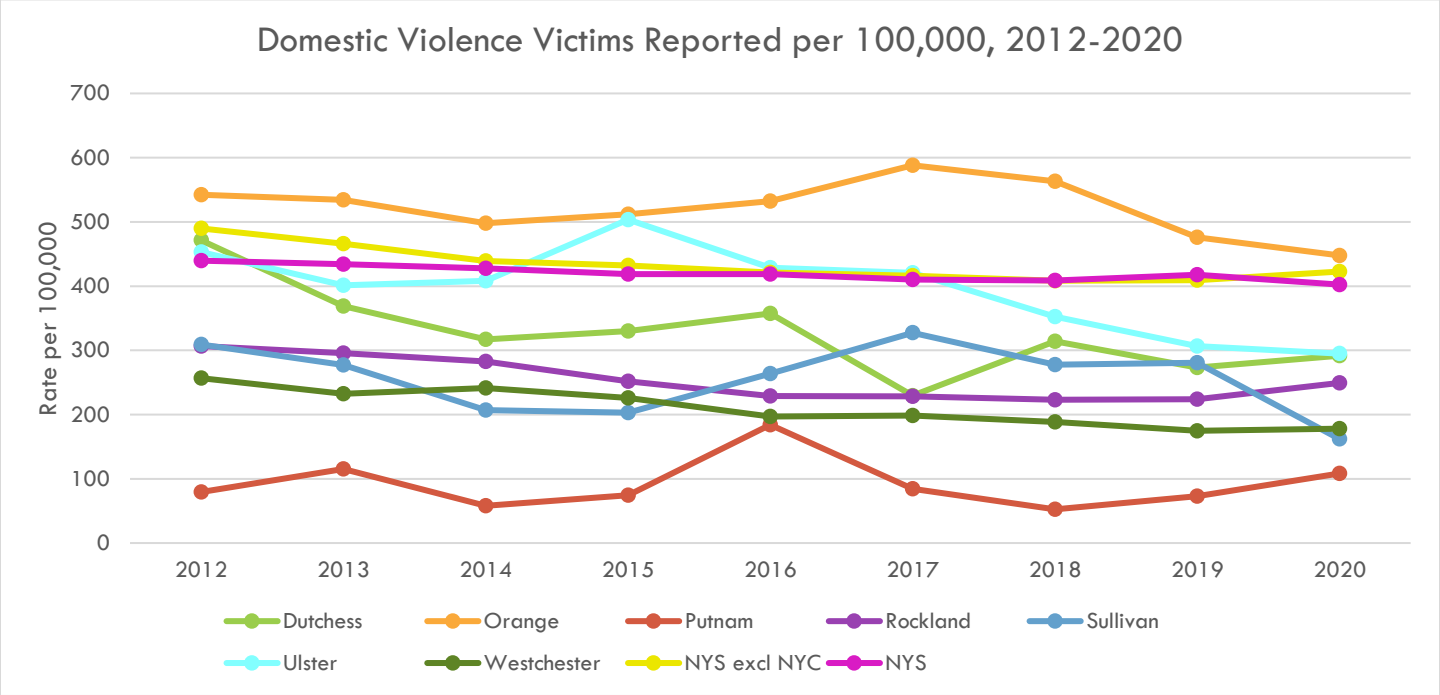
[288] National Coalition Against Domestic Violence (2020), Domestic violence, https://assets.speakcdn.com/assets/2497/domestic_violence-2020080709350855.pdf?1596811079991, accessed June 2022

[289] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/violenceprevention/intimatepartnerviolence/fastfact.html, accessed June 2022

[290] NYS Office for the Prevention of Domestic Violence, New York State Domestic & Sexual Violence Hotline, 2020, https://opdv.ny.gov/system/files/documents/2022/02/2020_hotline_data_sheet_final_0.pdf, accessed June 2022

Figure 347



	Dutchess	Orange	Putnam	Rockland	Sullivan	Ulster	Westchester	NYS excl NYC	NYS
2012	471.3	542.2	79.2	306.7	309.0	453.1	256.7	489.8	439.6
2013	368.9	534.1	115.3	295.5	277.4	401.5	232.5	465.8	434.0
2014	317.1	497.7	58.2	282.9	206.8	408.0	241.4	439.3	427.6
2015	330.0	511.7	74.4	252.0	203.1	503.6	225.8	432.0	418.8
2016	357.2	532.4	184.1	229.0	263.8	428.8	197.2	421.2	418.7
2017	229.6	588.1	84.5	228.6	327.3	420.8	198.5	416.4	410.0
2018	314.1	563.4	52.5	223.1	277.9	352.5	188.4	408.4	408.8
2019	273.0	475.9	72.9	223.8	280.9	306.7	174.8	409.2	417.8
2020	291.6	447.8	108.4	249.1	162.0	294.9	178.0	422.5	402.4

Source: NYS Division of Criminal Justice Services, 2020
https://www.criminaljustice.ny.gov/crimnet/ojsa/domesticviolence2020/index.htm

COUNTY HEALTH SUMMARIES

DUTCHESS COUNTY HEALTH SUMMARY

Dutchess County is in the center of the Hudson Valley, midway between New York City (NYC) and New York State's (NYS) capital, Albany. The western border includes 30 miles of Hudson River shoreline with Connecticut forming the eastern border. Dutchess County is 825 square miles, made up of 30 municipalities, consisting of 20 towns, 8 villages, and two cities, Poughkeepsie (the county seat) and the city of Beacon. The southwestern region of Dutchess County is the most densely populated part of the county and includes the cities of Beacon and Poughkeepsie. The rest of the county is predominantly suburban and rural. Dutchess County has a population of almost 300,000 with a majority of residents aged 35-64 years old. In Dutchess County 11.7% of adults report having poor physical or mental health (BRFSS, 2018).

AREAS OF FOCUS

In Dutchess County, there is a strong need to focus on factors of chronic disease and mental and behavioral health. At least 40% of Dutchess County adults are estimated to have a chronic health condition including but not limited to diseases such as hypertension, diabetes, high cholesterol, asthma, arthritis, or obesity. Those with a mental health condition, including but not limited to depression, anxiety, other mood disorder or substance or alcohol use disorder, are also more likely to have a chronic health condition than those without. Due to the interrelatedness of both physical and mental well-being, it is important to focus not only on physical health but mental health as well. Within both sectors, there are several disparities that exist between the more urban-suburban western side of the county and the rural eastern side, between White non-Hispanic residents and Black non-Hispanic and Hispanic residents, and between those who have disabilities' health and those who do not. These disparities can be seen in the rates of preventable hospitalizations, premature death, opioid overdose, participation in primary care, and provision of mental health services. In order to combat these issues, it is important that the residents of Dutchess County have the access to and support from sufficient, competent health providers to manage their health.

Areas of focus should include, though not be limited to:

- Preventable hospitalizations for chronic conditions
- Cardiovascular disease (CVD)
- Respiratory diseases including asthma and chronic lower respiratory disease (CLRD)
- Obesity
- Poor mental health
- Opioid overdose
- Behavioral health including diet/exercise, smoking, alcohol and drug use

EMERGING ISSUES

While not affecting as large of a population as the issues mentioned above, sexually transmitted infection (STI) rates continue to steadily increase in Dutchess County. Although numbers are smaller compared to more longstanding chronic diseases, Dutchess County, along with other counties in the Mid-Hudson Region (M-H Region), is seeing a significant increase in the rate of primary syphilis diagnoses. The rates of chlamydia and gonorrhea infection have also risen in recent years. Similarly, as aforementioned, these increases can be tied to behavioral health practices. When reviewing communicable diseases, it is important to address the preventive immunity that vaccines can provide. With more frequent outbreaks of vaccine-preventable disease in the M-H Region, it is critical to emphasize the maintenance of immunity through the recommended vaccine schedule for both children and adults.

Like much of NYS and its neighboring counties, Dutchess County has endured a significant number of COVID-19 cases and associated fatalities. As of July 31, 2022, Dutchess County had a cumulative total of 73,637 individual positive results and 678 fatalities with a weekly incidence rate of 196 per 100,000. At its peak in January 2022, Dutchess County received over 6,000 new case reports within 1 week at a rate of 2,086 cases per 100,000. In Spring 2022, 36% of respondents to the Mid-Hudson Region Health Survey stated that they had ever had COVID-19. Dutchess County residents also acknowledged the toll that COVID-19 had on their health, with 29% saying their physical health worsened and 34% saying their mental health worsened over the course of the pandemic. While not explicitly included in the 2019-2024 New York State Prevention Agenda (NYSPA), the COVID-19 pandemic highlights the need for competent public health emergency preparedness and response.

Additionally, as seen in the United States (US) and NYS, the rate of suicide deaths and intentional self-harm has been increasing steadily within Dutchess County. This reflects the poor mental health of Dutchess County residents and the need for stronger mental and behavioral health resources such as providers and services, as well as a need for increased social capital.

Emerging issues include:

- STIs including syphilis, chlamydia, and gonorrhea
- Immunizations
- COVID-19 and other emerging, infectious diseases
- Suicide and self-harm

COMMUNITY SURVEY DATA POINTS OF NOTE

The self-reported physical health status of Dutchess County citizens mirrors that of the M-H Region, with 73% and 76% reporting excellent or good physical health, respectively. In Dutchess County, unemployed individuals, households with disabled persons, and low-income individuals reported poorer overall physical health compared to their peers.

The self-reported mental health status of Dutchess County citizens is also similar to the M-H Region overall, with 69% and 73% reporting excellent or good mental health, respectively. Young adults (35 years old and younger), non-White individuals, households with disabled persons, and low-income individuals reported poorer mental health than their peers. Those under the age of 55 reported feeling more stressed than those aged 55 years and older.

Individuals in households with incomes greater than $100,000 per year reported higher alcohol use in 2021-2022. 18% of Dutchess respondents stated that their alcohol consumption increased compared to habits prior to the pandemic, while 17% stated that their non-medical use of drugs increased.

Respondents with a person with a disability in the household were noted to have had a more difficult time obtaining basic necessities when they were really needed, including food, utilities, healthcare, medicine, phone or internet service, childcare, transportation, or housing.

22% of Dutchess County respondents said that they have not been to a primary care provider for a routine physical in the last 12 months. The most common reasons for people not visiting a primary care provider for a physical were not having time to go or choosing not to go. Inability to get an appointment and concerns over COVID-19 were also reasons for 20% of those respondents.

The proportion of Dutchess County residents reporting visiting an emergency room for a non-emergency issue is similar to that of the M-H Region overall. The most common reason for visiting an emergency room instead of regular doctor's office was thinking that the non-emergency condition was an actual emergency and that the emergency room's hours of operation were more convenient than a traditional doctor's office.

Those on the eastern side of the county reported that they were less likely to get where they needed to using public transportation.

ASSETS AND RESOURCES

Through the Hudson Valley Public Health Collaborative (HVPHC) between the local health departments (LHDs) of the M-H Region, a Mid-Hudson Region Community Health Survey for the 2022-2024 cycle was conducted to assess various topics related to health and priorities put forward by NYS including healthy aging, health across all policies, and items from the NYSPA. In addition to the Mid-Hudson Region Community Health Survey, discussion groups with providers that serve underrepresented populations were held. These groups consisted of agencies that provide services such as mental health support, vocational programs, or household resources to individuals belonging to LGBTQIA+, low-income, veteran, senior, homeless, or other niche populations. The purpose of the discussions was to collect information on the issues specific to individuals who may be dealing with more complex health issues than the general population.

A summary of the results of the Mid-Hudson Region Community Health Survey and the provider focus groups was disseminated at an annual Community Health Improvement Plan (CHIP) Summit. The Summit partners in the current CHIP as well as members of committees associated with the Department of Behavioral and Community Health include, but are not limited to, representatives from national associations, local county departments, hospital and healthcare systems, local universities, non-governmental organizations, non-profit advocacy groups, and the general public. The Summit also included break-out sessions consisting of different topic areas aligned with the NYSPA, where participants discussed the results of the survey and focus groups and brainstormed initiatives that they would like to take in the next CHIP cycle (2022-2024). Through collaboration with CHIP partners, workgroups operate to close the gap on health disparities in the county and M-H Region. Current initiatives include work addressing obesity, tobacco use, suicide, and drug use. Working with various county departments and non-county partners allows for a broad, "health in all policies" approach to the issues addressed in the Community Health Assessment (CHA) and CHIP.

EFFORTS MOVING FORWARD

To address and improve community health, the Dutchess County Department of Behavioral and Community Health (DBCH) will submit a CHIP at the end of 2022. Based on the NYSPA, the CHIP will outline the priority and focus areas for the 2022-2024 cycle and include interventions and appropriate process and outcome metrics. To develop the CHIP, an internal review committee of various DBCH staff from a variety of disciplines will review the CHA and determine the priority areas. With the selection of the priority areas, workgroups with community partners related to those areas will be convened or created (if a novel priority area is selected). The workgroups are then charged with selecting the focuses within the priority areas. Upon selection of the focus areas, interventions with baseline measures, process measures, and outcome measures will be developed.

ORANGE COUNTY HEALTH SUMMARY

Orange County is in the southeastern area of NYS, bounded on the east by the Hudson River and on the west by the Delaware River. It is located approximately 40 miles north of NYC with 43 municipalities and approximately 382,100 residents. Of Orange County residents, 50.1% are male, 63.1% are non-Hispanic White, 10.1% are non-Hispanic Black, and 21.1% are Hispanic. Orange County is a mix of urban, suburban, farmland, and rural areas. Agriculture is a leading industry in Orange County and constitutes more than half of the county's open space. The availability of multiple modes of transportation, including bus, train, and major highways, allows residents to travel to NYC, New Jersey, and Southern NYS for employment. Orange County also contains New York Stewart International Airport in Newburgh, NY, West Point Military Academy in Highland Falls, NY, and major tourist attractions such as LEGOLAND New York and the Woodbury Commons Premium Outlets. At first glance, Orange County appears to be an affluent suburban community that enjoys a median household income above the NYS average ($80,816 vs. $71,117, respectively), a smaller percentage of individuals living below the poverty line (11.4% vs. 13.6%, respectively), a lower unemployment rate (3.0% vs. 3.6%, respectively), and boasts a higher percentage of high school graduates as compared to NYS (89.9% and 87.3%, respectively). However, aggregate county data are misleading and mask the disparities within the county. The urban areas of Orange County are characterized by severe socioeconomic and health inequities, with 13.7% of residents in the three major cities living below the federal poverty line (Newburgh (13.5%), Middletown (13%), and Port Jervis (17.1%)).

AREAS OF FOCUS

Heart disease and cancer are the leading causes of death and premature death (death before age 75) by a large margin. Premature death for those less than 65 years and less than 75 years in Orange County are worse than the NYS rates based on the latest data available.[291] These margins are larger for those among racial and ethnic lines, as well as in areas that are socioeconomically disadvantaged.[292] Obesity is a leading contributor to these top causes of death, as well as cancer, diabetes, stroke, and hypertension, all of which can lead to premature death. Orange County's age-adjusted all cancer mortality is higher than both NYS and the M-H Region based on the latest available data [see Figure 221]. Over the past ten years, the rates of obesity have continually grown, as well as the subsequent morbidity of CVD, prediabetes, and hypertension.

[291] Orange County Department of Health 2022 Community Health Assessment, https://www.orangecountygov.com/180/Community-Health-Assessments, accessed October 2022

[292] America's Health Rankings, United Health Foundation, https://www.americashealthrankings.org/explore/annual/measure/YPLL_Disparity/state/ALL, accessed October 2022

The COVID-19 pandemic exacerbated many of the underlying factors that have a profound impact on health such as poverty, food insecurity, education, housing, and access to care, including health insurance. Although strides were made prior to the pandemic in addressing substance use in Orange County, these external stressors contribute to poor mental health and substance use has risen in the past two years. Overdose deaths in the county have increased steadily over time and age-adjusted rates are still higher in Orange County compared to NYS excluding NYC.

Other health areas where Orange County is worse than NYS or worsening since the last assessment include:

- Premature deaths (before age 65 years), particularly inequities among non-Hispanic Black and Hispanic residents
- STIs including early syphilis, gonorrhea, and chlamydia
- Infant mortality among non-Hispanic Black women and Hispanic women
- Premature births among non-Hispanic Black women
- Adults receiving colorectal cancer screening
- Cancer mortality including all cancer, female breast cancer, and colorectal cancer
- Childhood immunization rates among children 24-35 months of age
- Unemployment rate
- Overdose deaths involving any opioid
- Gross rent as a percentage of household income: occupied units paying rent 30% or more

EMERGING ISSUES

- Food insecurity
- Residents struggling with mental health issues since the beginning of the COVID-19 pandemic
- Affordable housing
- Emerging infectious diseases such as COVID-19 and Monkeypox
- Outbreaks of vaccine preventable diseases

COMMUNITY SURVEY DATA POINTS OF NOTE

As part of the CHA process, the Orange County Department of Health (OCDOH) participated in the Mid-Hudson Region Community Health Survey, in partnership with the six other M-H Region LHDs and the Siena College Research Institute to collect data on 996 residents to help better characterize the needs of the community. Below are data points of note:

- 43% of respondents with <$25K yearly income reported that their ability to afford housing worsened over the course of the COVID-19 pandemic, compared to 23% of Orange County respondents.
- 37% of renters in Orange County reported that their ability to obtain affordable, nutritious food worsened over the course of the COVID-19 pandemic, compared to only 20% of homeowners.
- 33% of respondents with <$25K yearly income reported being unable to access the internet in the past 12 months, compared to 17% of Orange County respondents.
- 32% of respondents with <$25K yearly income were unable to get transportation when needed in the previous 12 months, compared to only 17% of Orange County respondents.
- 31% of Orange County respondents aged 18-34 years reported that their mental health has worsened over the course of the COVID-19 pandemic, compared to only 12% of those aged 55 and older.

- 41% of Orange County respondents in 2022 reported there are sufficient, quality mental health providers, which is a decrease from 55% reported in 2018.
- Only 59% of Orange County respondents aged 18-34 years reported having good or excellent mental health, compared to 75% of Orange County respondents and 85% of respondents aged 55 and older.
- 33% of Orange County respondents with <$25K yearly income reported that in the past 12 months, they or any other member of their household has been unable to get any healthcare including dental or vision compared to 21% of total Orange County respondents, and 9% of respondents $150k+ yearly income.
- 26% of Orange County respondents aged 18-34 years reported that in the past 12 months, they did not visit primary care physician because they did not have insurance compared to 11% of respondents aged 55 and older.

ASSETS AND RESOURCES

OCDOH has strong community partnerships with hundreds of organizations serving its residents, including five area hospitals, federally qualified health centers (FQHC), private medical providers, local two-year and four-year colleges, a medical school, community-based organizations (CBOs), and governmental departments serving a broad variety of community needs. OCDOH has established multiple coalitions including Healthy Orange, the Perinatal and Infant Community Health Collaborative (PICHC), and the Orange County Cancer Screening Collaborative. OCDOH also co-leads and participates in many countywide coalitions, such as Changing the Orange County Addiction Treatment Ecosystem, Healing Communities Study Steering Committee and Workgroups, WELCOME Orange, and the Orange County Resilience Project. These coalition partners will be mobilized to address the health areas of focus and emerging issues for the 2022-2024 CHIP cycle.

EFFORTS MOVING FORWARD

In addition to participating in the Mid-Hudson Region Community Health Survey, a service provider survey and subsequent focus groups were conducted in May and June 2022, in partnership with the Joint Membership of Health and Community Agencies (JMHCA) and Changing the Addition Treatment Ecosystem, to collect data on underrepresented populations, including low-income, veterans, persons experiencing homelessness, the aging population, LGBTQIA+ community, and people with a mental health diagnosis or with a substance use disorder. Forty-one responses were collected and three underlying issues that impact the health of the populations served by their agencies were identified as follows: access to affordable, decent, and safe house; access to mental health providers; and access to affordable, reliable public and personal transportation.

The Community Asset Survey (CAS) was developed to ask residents about the greatest strengths of the community, where should community efforts be focused to improve quality of life, and to identify the most important health issues. Over 900 residents participated in the convenience sample survey and the three areas identified to focus resources and attention to improve quality of life were as follows: more affordable housing, better jobs and economy, and improving public transportation.

The top three important health issues identified by the respondents were as follows: drug use; mental health including depression and anxiety; and aging problems (Alzheimer's disease, arthritis, hearing/vision loss, etc.) Residents were also asked during community events about which health priorities the community should select for the 2022-2024 CHIP cycle. Over 1,500 residents participated and the top two priority areas that residents voted were:

1. Promoting Well-Being and Preventing Mental Health and Substance Use (36.4%) and
2. Promoting Healthy Women, Infants, and Children (26%).

As a complement to this secondary data review and the primary data collection with the resident surveys, OCDOH updated the Community Health Assessment Data Review Guide.[293] The guide is a review of over 150 of the most current secondary data indicators available, stratified by the New York State Prevention Agenda areas for Orange County and NYS. The data guide will be updated annually and shared with partners.

Where available, trends from the previous year and comparison data from NYS were included. This document was provided at the Orange County Health Summit held on June 28th with approximately 100 partners including hospitals, health care providers, CBOs, and academia to review the most current CHA data, identify and discuss the forces that impact the health of residents, provide input on which two Prevention Agenda (PA) Priorities for the 2022-2024 CHIP should be chosen, and participate in breakout groups to discuss current efforts, assets, and barriers in each of the five priority areas.

After considering all the data, the two priority areas chosen for 2022-2024 are:

1. Preventing Chronic Disease
2. Promoting Well-Being and Preventing Mental Health and Substance Use

Hospital partners and summit participants in each priority area will be involved in the ongoing strategic planning and implementation efforts. Each focus area chosen will have a corresponding workgroup co-led by OCDOH and area hospital staff or community organization partner. These workgroups will report at quarterly meetings as well as the larger yearly Orange County Health Summit to share the ongoing efforts of the CHIP to other workgroups and the community.

PUTNAM COUNTY HEALTH SUMMARY

Putnam County is located approximately 58 miles north of NYC and is bordered by the Hudson River to the west, Connecticut to the east, Dutchess County to the north, and Westchester County to the south. The county's 230 square miles consist of a mix of rural and suburban communities interspersed with reservoirs, parks, and farmland, divided up into six towns and three villages. More than a third of the population resides in the town of Carmel, which occupies the central southern portion of the county.[294]

The US Census Bureau estimates the county's population at 97,936, among which 19.2% are children under 18 years of age and 18.6% are adults 65 years and over.[295] Putnam's population is aging, indicated by the increases in the percent of the population aged 65 years and over alongside a gradually decreasing birthrate in the last 10 years.[296] Approximately 90% of the population is White, 4.5% is Black, 3.0% is Asian, Native American, or Pacific Islander, and 2.2% is of two or more races. Hispanics make up 17.7% of the population. Nearly 20% of the population aged five years or older speaks a language other than English at home and nearly 14% is foreign born.[295]

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[293] Orange County Department of Health 2022 Community Health Assessment, https://www.orangecountygov.com/180/Community-Health-Assessments, accessed October 2022

[294] United States Census Bureau QuickFacts, https://www.census.gov/programs-surveys/sis/resources/data-tools/quickfacts.html, accessed July 2022

[295] U.S. Census Bureau QuickFacts, https://www.census.gov/programs-surveys/sis/resources/data-tools/quickfacts.html, accessed July 2022

[296] New York State Department of Health, NYSCHIRS, https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=ch&cos=37&ctop=14, accessed July 2022

Putnam is a well-educated and affluent county. Over 90% of the population has a high school or higher degree, and nearly 41% has a bachelor's degree or higher.[295] The median annual household income has trended up in the last decade and in 2019 was the third highest in the state. The county's poverty rate has been flat over the past decade and, at 5.2% in 2019, was the lowest of all counties in the state. However, like the state as a whole, Putnam County did see a significant upward trend in the unemployment rate from 2019 to 2020 which could impact income and poverty levels moving forward.[297]

For the past 10 years Putnam County has consistently ranked amongst the top five healthiest counties in the state in the University of Wisconsin's annual County Health Rankings & Roadmaps report, and in the 2022 edition Putnam ranked first in the state for the index measure of health outcomes and third for the health factors index.[298] While these rankings represent a significant accomplishment, they do not diminish the importance of identifying gaps and areas for improvement through the M-H Regional CHA process as detailed in the following sections.

AREAS OF FOCUS

Putnam County Department of Health (PCDOH) conducted a systematic review of Putnam data for all the indicators included in the M-H Regional CHA and any additional indicators included on the NYSPA Dashboard, the Health Status and Social Determinants of Health section of the NYS Community Health Indicator Reports (CHIRS) Dashboard, and/or the NYS County Health Indicators by Race/Ethnicity (CHIRE) Dashboard. Indicators were flagged if they met any of the following criteria: PA objective not met; performance worse than the M-H Region, NYS, or five or more counties in the M-H Region; indicator performance worsening over time; or disparities on the CHIRE. Flagged indicators were then examined for patterns, and determinants of health or health issues with two or more flags were given consideration as an area of focus. On this basis, major areas of focus identified include transportation (determinant of health), disparities in birth-related indicators, obesity, early childhood immunization, and tickborne disease. Data points in this summary are footnoted if they are not found in the M-H Regional CHA.

Transportation is a fundamental social determinant of health because it influences the ability to access employment and meet other basic needs such as accessing healthy food. Putnam is heavily dependent on cars, which carry a high-cost burden and contribute to pollution. Compared to other counties in the region, Putnam County has the highest mean travel time to work. When examining five-year rates posted on CHIRS, both the mean travel time to work and the percentage of workers commuting alone are increasing, while the percentage of workers using public transportation is decreasing.[297] On the Mid-Hudson Region Community Health Survey, only 36% of Putnam respondents agreed that people can get where they need to go using public transportation, a decrease from 40% in 2018, and lower than the regional percentage of 56%.

The health and well-being of pregnant people and infants directly impacts the health of the next generation. Although Putnam County generally performs well in birth-related indicators as compared to other counties in the M-H Region, like NYS,[299] disparities can be seen when these indicators are examined by race and ethnicity from

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[297] New York State Department of Health, NYSCHIRS, 2022, https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=ch&cos=37&ctop=14, accessed July 2022

[298] University of Wisconsin Population Health Institute, County Health Rankings & Roadmap, Robert Wood Johnson Foundation, https://www.countyhealthrankings.org/app/new-york/2022/downloads, accessed July 2022

[299] New York State Department of Health, NYSCHIRE, 2022, https://www.health.ny.gov/statistics/community/minority/county/newyorkstate.htm, accessed August 2022

2017-2019. When examining the percentage of births with first trimester prenatal care and adequate prenatal care, the percentages were lower in Asian/Pacific Islander (78.6%, 83.8%), Hispanic (80.5%, 84.9%), and non-Hispanic Black (84.5%, 84.6%) births than White births (90.1%, 89.8%). There was a higher percentage of premature births in non-Hispanic Black (16.9%) and Asian/Pacific Islander (10.0%) births than White (8.2%) and Hispanic births (7.6%). The percentage of low birthweight births was much higher in non-Hispanic Black (15.5%) births than Hispanic (6.7%), White (6.0%) and Asian/Pacific Islander births (5.7%).[300]

Obesity puts individuals at greater risk of developing a whole host of chronic diseases,[301] including heart disease which was the leading cause of death in Putnam County in all years from 2010-2019 except for 2016. In 2018 Putnam had the second highest percentage of adults overweight or obese in the region and the percent that is obese increased from 21% in 2016 to 27% in 2018. Putnam also had the second highest percent of adults consuming one or more sugary beverages daily in the region in 2018 (25.6%), up from 22.9% in 2016. When looking at school-age children, the percent overweight or obese is also increasing, as is the percent obese when stratified by elementary and middle/high school age students.

High childhood vaccination rates are critical to maintaining community level protection against diseases that were commonplace before the advent of vaccines, as highlighted by a recent case of poliomyelitis in the M-H Region.[302] In 2020, 61.9% of Putnam children 24-35 months of age had completed the routine childhood vaccinations (4:3:1:3:3:1:4 series) recommended by the CDC's Advisory Committee on Immunization Practices (ACIP). While this rate is higher than the region, it is lower than the state, lower still than the PA 2024 goal of 70.5%, and represents a dramatic decrease from 70.8% in 2019. There is evidence that the diseases prevented by these vaccines are increasing in incidence in Putnam County. Incidence of pertussis is higher than that for the state and increased from 2018 to 2019. Mumps incidence also increased from 2018 to 2019. Incidence of Haemophilus influenza is higher than that both for the region and the state and three-year average rates have been trending up over the past decade.[303]

Putnam County bears a disproportionally high burden of tickborne disease. NYS is amongst 14 states and the District of Columbia considered to be high incidence for Lyme disease,[304] and Putnam consistently is one of the counties with the highest incidence in the state.[305] While Lyme disease is most common, the second and third most common tickborne diseases, anaplasmosis and babesiosis, have a similar geographic distribution because they are all transmitted by the same tick, Ixodes scapularis.[306] Putnam had the highest incidence of Lyme in the region from 2011-2020, the third highest rate of anaplasmosis from 2014-2019 and the highest rate in 2020, and the first or second highest rate of babesiosis every year since 2010. When we include preliminary data from recent years (only available for anaplasmosis and babesiosis) we see that reported cases of babesiosis in Putnam

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[300] New York State Department of Health, NYSCHIRE, 2022, https://www.health.ny.gov/statistics/community/minority/county/putnam.htm, accessed August 2022

[301] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/healthyweight/effects/index.html, accessed August 2022

[302] New York State of Opportunity, Department of Health, 2022, https://www.health.ny.gov/diseases/communicable/polio/docs/2022-07-29_han.pdf, accessed August 2022

[303] New York State Department of Health, CHIRS, 2022, https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fchir_dashboard%2Fchir_dashboard&p=ch&cos=37&ctop=5, accessed August 2022

[304] Centers for Disease Control and Prevention, 2021, https://www.cdc.gov/lyme/datasurveillance/maps-recent.html, accessed August 2022

[305] New York State Department of Health, Communicable Disease Annual Reports, 2021, https://www.health.ny.gov/statistics/diseases/communicable/, accessed August 2022

[306] Centers for Disease Control and Prevention, 2022, https://www.cdc.gov/ticks/geographic_distribution.html, accessed August 2022

doubled in 2021 as compared to 2020 and reported cases of anaplasmosis nearly tripled.[307] While not included in the NYSPA, tickborne disease remains an important focus for Putnam County.

EMERGING ISSUES

For this report, emerging issues are defined as health problems that did not flag based on the methodology described above but were instead identified based on other data sources or preliminary county data for 2020/2021 not included in NYS dashboards. Emerging issues include COVID-19 and other emerging infectious diseases (EID), STIs, opioid misuse, and harmful algal blooms (HABs).

Similar to the nation, state, and neighboring counties, Putnam has been hit hard by COVID-19 for more than two years. The cumulative count of Putnam residents with positive test results reported through June of 2022 is 26,535, and the cumulative count of reported COVID-19 related deaths is 125. Weekly incidence has continued to exceed 200 cases in the summer of 2022.[308] We are only now starting to understand and contend with impacts on the community that extend far beyond summary statistics, as evidenced by differences in results between the 2018 and 2022 Mid-Hudson Region Community Health Surveys summarized below. The pandemic also put a spotlight on long recognized deficits in the structure and capacity of the public health system to respond to pandemics and other EIDs that has in turn generated long lists of recommendations for change.[309,310] Yet, change doesn't happen overnight, and infections continue to emerge as is evidenced by the recent State Disaster Emergency Declaration made in response to the Monkeypox outbreak.[311] While not included in the NYSPA, preparedness and response to COVID-19 and other emerging infections is an important priority for Putnam County.

There has been a general upward trend in STIs in the M-H Region since 2014. While Putnam has not been as severely impacted as other counties in the region, upward trends are evident for chlamydia, gonorrhea, and syphilis in Putnam data, particularly when preliminary case counts for 2021 are considered.[312] It should be noted that there may be aberrations in 2020 data related to decreased health care seeking behavior during the COVID-19 pandemic. This is particularly evident with chlamydia which is often diagnosed by screening asymptomatic patients. Stemming increasing rates of STIs remains an important priority for Putnam County.

In the US, drug overdose deaths are rising, and opioids are the leading cause of drug overdoses. Similar to STIs, in many measures related to opioids Putnam has fared better than other counties in the region. However, when data presented in the M-H Regional CHA is supplemented with data available in the NYS Opioid Annual Data Report 2021, we see an increase from 2019 to 2020 in the rate of overdose deaths involving any opioid, heroin, and opioid pain relievers.[313] Putnam will continue to prioritize harm reduction efforts to decrease mortality and morbidity due to opioid misuse.

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[307] PCDOH, unpublished data from the NYS Communicable Disease Electronic Surveillance System, accessed July 2022

[308] PCDOH, 2022, https://www.putnamcountyny.com/health/covid19/coronavirus/, accessed August 2022

[309] DeSalvo K, Hughes B, Bassett M, Benjamin G, Fraser M, Galea S, Garcia JN, and Howard J., National Academy of Medicine, 2021, https://nam.edu/public-health-covid-19-impact-assessment-lessons-learned-and-compelling-needs/, accessed August 2022

[310] NYSACHO, 2021, https://www.nysacho.org/wp-content/uploads/2021/03/IPR-report-FINAL.pdf, accessed August 2022

[311] NYS Office of the Governor, 2022, https://www.governor.ny.gov/news/governor-hochul-declares-state-disaster-emergency-response-ongoing-monkeypox-outbreak, accessed August 2022

[312] PCDOH, unpublished data from the NYS Communicable Disease Electronic Surveillance System, accessed July 2022

[313] New York State Department of Health, 2021, https://www.health.ny.gov/statistics/opioid/data/pdf/nys_opioid_annual_report_2021.pdf, accessed July 2022

NYS data shows an increasing trend in frequency and duration of HABs at New York beaches.[314] PCDOH tracks HAB detections and associated beach closures at the 32 public bathing beaches under its regulatory authority. In 2021 Putnam County had the highest number of times beaches closed (27), number of beaches closed (13), and number of lost beach days due to harmful blue-green algae blooms (314) of any county in NYS.[315] From 2020 to 2021, HAB detections at regulated bathing beaches in Putnam increased 115% and number of lost swimming days increased by 183%.[316] Weather patterns influence year-to-year fluctuation in HABs and the ongoing educational efforts of PCDOH Environmental Health Services may in part contribute to a high level of awareness and thus reporting of HABs in Putnam. Nonetheless, the frequency and duration of HABs in Putnam as compared to other counties is also likely related to the high density of housing with residential septic systems surrounding lakes. Recreational water bodies provide opportunities for physical activity and improve the quality of life for Putnam residents. Addressing issues with septic systems and preventing illnesses related to exposure to HABs is an important priority for Putnam County.

COMMUNITY SURVEY DATA POINTS OF NOTE

Major findings from the 777 Putnam County responses to the Mid-Hudson Region Community Health Survey:

- Except for access to public transportation, there is a more favorable opinion of community quality-of-life measures than in the region overall. However, declines in favorability were seen from 2018 survey results to 2022 survey results for ability to access healthy and nutritious food, childcare, mental health providers, and transportation.
- There is a lower opinion of quality of information received from county agencies during public emergencies than in the region overall.
- Self-reported ratings for physical and mental health were better than the region overall, but mental health ratings declined from 2018. Those living in a household with a disabled person, a person with long COVID-19, or income less than $50,000 had lower ratings for both physical and mental health.
- Self-reported health behaviors were better than the region overall, but declines were seen from 2018 to 2022 in healthy eating, getting adequate sleep, and having quality social encounters.
- Among the 75% of Putnam respondents who ever consume alcohol, 17% reported increased frequency of consumption as compared to pre-pandemic and 23% reported less frequent consumption. Among the 20% of Putnam respondents who ever use drugs for non-medical purpose, 17% reported increased frequency of drug use as compared to pre-pandemic and 12% reported less frequent drug use.
- The level of stress reported on an average day increased from 2018 to 2022. Of respondents, stress levels were higher in females, those 35-54 years of age, employed persons, and those in households with children, a disabled person, a person with long COVID-19, or income greater than $150,000 per year.
- As compared to the region overall, a lower proportion had trouble meeting basic needs such as food and housing in the past year, but there were disparities across demographic groups. A higher proportion of those who are age 18-34 years, non-White, renting their home, live in a household with a disabled person, or live in a household with income below $50,000 per year had trouble meeting four or more basic needs.

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[314] New York State Department of Health, 2022, https://www.health.ny.gov/environmental/water/drinking/bluegreenalgae/beachsurveillance.htm, accessed July 2022

[315] New York State Department of Health, 2022, https://www.health.ny.gov/environmental/water/drinking/bluegreenalgae/beachsurveillance.htm, accessed July 2022

[316] PCDOH, Unpublished data, accessed July 2022

- When asked to consider if various aspects of their lives had gotten better or worse over the course of the pandemic, the highest impact was seen in mental health (27% worsened) and the ability to obtain affordable, nutritious food (26% worsened). A higher proportion of those who have had long COVID-19 or have a household member that has had long COVID-19 reported worsened physical health, mental health, ability to obtain healthy food, ability to afford housing, and ability to care for a household member with a disability or chronic illness.
- Among the 19% of respondents who were initially hesitant to receive a vaccination for COVID-19, the most common reason reported for eventually deciding to be vaccinated was learning more about the vaccine (36%).

PCDOH also conducted a Community Priority Poll (CPP) to assess residents' opinions on health priorities and where resources should be focused to improve quality of life. The CPP was administered over social media and by paper ballot at PCDOH community engagement activities. The 135 respondents to the poll showed a preference for prioritization of health issues related to mental health and suicide (19%) and substance misuse (19%), with alignment of prioritization of resources for mental and social support services (16%). Aging and disability related issues was also commonly selected as a health priority (16%). The second and third most common choices for prioritization of resources were access to healthcare and preventative medicine (14%) and access to affordable housing (13%). CHIP creators should consider results of the CPP with the understanding that Spanish speakers were over-represented (27%) and that the small sample size is not generalizable to the whole population.

ASSETS AND RESOURCES

PCDOH has strong community partnerships that operate through a variety of channels:

- Live Healthy Putnam is a coalition of community organizations and government agencies that meet quarterly to collaborate on population health initiatives, share resources, and cross promote programs.
- PCDOH participates in a trio of task forces including the Communities that Care Coalition (substance misuse prevention), Suicide Prevention Task Force, and the Mental Health Providers Group.
- Relationships between school districts and PCDOH were strengthened through extensive collaboration in disease prevention efforts during the COVID-19 pandemic.
- Restaurants, camps, and recreational areas work closely with the Environmental Health Services Division to distribute health information and maintain safe environments.
- Putnam County has an established network of emergency preparedness partners that includes a robust Medical Reserve Corp (MRC) with 130 active members and an Emergency Preparedness and Community Resilience Task Force.

The Community Partner Resources survey was conducted to compile a directory of population health program resources available to county residents and facilitate matching of priorities identified in the CHA to resources that could be leveraged in the CHIP. Resources were categorized by the priority areas, focus areas, and goals outlined in the NYSPA. The survey found that services exist for all segments of the population, though the largest number of responding organizations provide services for the general population, adults, and adolescents. Population health activities have largely returned to pre-pandemic status, but some changes made in response to COVID-19, such as offering programs online rather than in person, have endured beyond the end of mandated restrictions. Resources exist in all NYSPA priority and focus areas but are not evenly distributed. The highest number of respondent organizations are working to prevent chronic disease.

EFFORTS MOVING FORWARD

To address and improve community health, PCDOH will submit a CHIP by the end of 2022. The plan will use the framework of the NYSPA to delineate focus areas within five major priority areas. The plan will also outline specific evidence-based interventions to address these focus areas and their evaluation measures. It will be informed by findings in the CHA and developed collaboratively by PCDOH and community partner organizations. This process will take place in the late summer through fall of 2022 and involve successive streamlining of focus areas and identification of potential linkages with existing resources for implementation of interventions. An internal PCDOH CHIP Work Group made up of members of the Health Education Division will complete an initial review, followed by evaluation by a CHIP Steering Committee consisting of PCDOH program staff and community partner organization leaders, including both clinical and non-clinical representatives from various fields such as mental health, chronic disease, environmental health, and more. An adapted nominal group technique alongside strategy grids will be utilized at the steering committee meeting to enhance objectivity and encourage consideration for urgency, need, feasibility, and impacts as factors that contribute to prioritization. The prioritization process will culminate in a Public Health Summit attended by elected and appointed officials, partners from community organizations such as not-for-profits, federally qualified health centers, faith-based groups, treatment centers, and various other key stakeholders. At the Summit, CHA findings will be presented and then stakeholder input will be gathered in breakout sessions. The Public Health Summit will then serve as a platform for further qualitative analysis of local resources and feasibility of program implementation through facilitated discussions within PA priority area-specific breakout sessions. Finally, PCDOH will work with individual partners to develop implementation plans for selected evidence-based interventions to include baseline, process, intermediate, and outcome measures.

ROCKLAND COUNTY HEALTH SUMMARY

Rockland is the smallest county by land area and third most dense in NYS, outside of the five boroughs of NYC. It is home to an increasingly diverse population, with the third largest proportion of Hispanic residents, and the highest percentages of non-English speakers and Jewish residents in the M-H Region. The county population has shown steady growth annually, with the largest percentage increases observed in those 15 years and younger and those aged 50 years and older. Through this assessment it was identified that Rockland has the largest individual proportion of young people regionally with the greatest county percentage of population under five years old (8.4%), and under 18 years old (29.2%). Additionally, it is important to note that Rockland has the largest individual percentage of persons in poverty (14.4%) among the M-H Region counties, according to recent US Census Bureau data. Overall, the data related to Rockland County health outcomes reflects the core county population make-up, a highly diverse array of communities with unique yet interconnected health needs. Through the process of this M-H Regional CHA, gaps were identified among unique sub-segments of the population that could be minimized through the collaborative efforts of the county community health improvement plan (CHIP). Specialized attention is needed in several health focus areas to advance general wellness and improve overall health conditions throughout the county.

AREAS OF FOCUS

The greatest influence on overall morbidity and mortality among Rockland residents continues to be chronic illnesses, as has been the case for several years. A wide variety of factors play a role in the occurrence of these conditions, and it is an expressed goal among the county health partners to address the core issues driving the current trends. For instance, the rate of childhood and adolescent obesity continues to worsen in Rockland over

the last few years. This was noted in the last community health assessment (CHA) and remains a problem to focus on in the next three years. Additionally, there is a clear disparity along racial and ethnic lines for broad categories of chronic conditions, such as diabetes, stroke, and asthma, when it comes to the ratios of preventable hospitalizations and premature deaths between non-Hispanic White residents and those that are either non-Hispanic Black or Hispanic. Prevention programs to reduce the impact of heart disease, diabetes, cancer, and stroke will continue and be enhanced during this health improvement cycle to decrease the continuous detrimental influence of these conditions. The interventions are being developed to reach these special populations with culturally tailored programs, such as innovative school-based wellness enhancements, multi-lingual disease prevention, and self-management classes. Other areas that currently require attention with the same culturally sensitive lens are:

- Increased rates of STIs (chlamydia, gonorrhea, and syphilis)
- Lowest childhood immunization rates in the state
- Poor cancer screening rates
- Evidence of perinatal inequities by race/ethnicity (preterm birth and low birthweight infants)
- Poor access and availability of mental health providers

EMERGING ISSUES

Certain health concerns in the M-H Region have advanced more rapidly in the last couple of years, progressing even faster than the data reviewed for this assessment can properly reflect due to standard reporting lag times and recent delays related to COVID-19. The factors influencing general public health have changed considerably and evolved in new directions since the last assessment of 2018. The general isolation and lack of available services experienced by residents during 2020 and 2021 allowed for unfortunate advancements in certain illnesses and conditions of concern. Most notably there has been a steady rise in STIs and a decrease in preventive care visits, impacting already troubled vaccination rates, cancer screening rates, and chronic illness prevention and maintenance visits. The available data sources show suboptimal child immunization rates (4:3:1:3:3:1:4) in certain school environments and among various pediatric providers throughout the county that have unfortunately allowed for recent increases in the occurrence of vaccine preventable disease outbreaks (measles, pertussis, mumps, polio). In 2021 Rockland County was noted as having the worst basic childhood immunization rates in NYS and community partners are now focused on working together to minimize the incidence and prevalence of these preventable illnesses going forward.

Luckily, the ongoing COVID-19 response also supported greater cooperation and information dissemination across all sectors as a necessity of staying up to date with the changing guidance and response protocols. We have all weathered the tough early days of the pandemic together and in that time forged new and stronger community partnerships as a necessity. Important lines of communication and cooperation were established locally among a wider set of providers and community groups such as school district administrators, school nurses, religious leaders, town and village officials, urgent cares, pediatricians, and general medical practitioners. The community provider survey results from Rockland once again emphasized their concerns around racial and ethnic inequities with respect to health care access, particularly with mental health and substance use disorders and access to specialty care. There is now a concerted effort among these partners to address issues associated with access to health care, access to mental health care, increases in STI's, and low vaccination rates within several communities in the county.

Some of the specific issues recognized are:

- Low childhood vaccination rates and the occurrence of multiple outbreaks of vaccine preventable diseases (measles, pertussis, polio, etc.)
- Rise in STIs, namely syphilis, gonorrhea, and chlamydia
- Rise in child and adolescent obesity
- Increase in the disparity between Hispanics and non-Hispanic Whites when it comes to preventable hospitalizations
- Increase in mortality related to suicide

COMMUNITY SURVEY DATA POINTS OF NOTE

- Most of the 765 respondents completing the Mid-Hudson Region Community Health Survey reported that Rockland is a safe location to live, despite it being considered even less affordable when matched against the survey results from 2018. Respondents noted a greater concern over the costs of housing, childcare, and nutritious food options when compared against findings from three years ago. Once again residents noted that there are inadequate public transportation options and insufficient mental health providers available for the needs of residents.
- Community service organizations were most concerned about minimal access to health providers; difficulties associated with public and private transportation; and a lack of affordable/nutritious food options available within all Rockland communities. They also expressed a fear over the low vaccination rates locally and the occurrence of disease outbreaks.
- A majority of the 25 participants identified that the leading barriers to care are minimal public knowledge about existing resources, lack of health literacy among community providers, and substance use issues.

ASSETS AND RESOURCES

Rockland is a resource rich county, considering that it is so dense and in the heart of the New York Metropolitan Area. The local stakeholders in the county have historically been eager, focused, and engaged. This was clearly demonstrated in the assessment process for this document. It is expected that this level of involvement will continue, possibly even increase, through 2024 and beyond. In order to affect change in the county, a coalition of organizations has mobilized to develop and employ a wide array of interventions. Plans are in place to primarily utilize facilities and staff at Bon Secours Good Samaritan Hospital, Montefiore Nyack Hospital, and Rockland County Department of Health to support the community health improvement strategies. Assistance in these efforts is also expected from the FQHCs (Hudson River Health Care and Refuah), other county departments (Mental Health, Youth Bureau, Office of the Aging, Social Services, and Planning), as well as from the various CBOs that have assisted in developing this assessment. Several active village collectives (notably the Spring Valley Collaborative, the Haverstraw Collaborative, and the Western Ramapo Collaborative) meet regularly in Rockland and provide opportunities for community-based networking, intervention deployment, and resident level feedback. A variety of smaller cultural associations also exists in the county. Increasing inclusivity of these groups to better support the health needs of the entire population is an expressed goal in this improvement cycle.

All of the organizations and collaborative groups mentioned above were critical in conducting this assessment, as they were the partners who provided critical input during the community health provider survey. Their feedback on the factors most influencing health and the leading barriers to care at the neighborhood level allowed for a unique health perspective. The survey of those groups provided a means to gather information on sub-populations that are typically underrepresented in random digit dial surveys like the one conducted by Siena

College Research Institute (SCRI) in 2022. These public and community organizations were invited and asked to participate in a selection process for the determination of the highest priority PA areas to focus interventions within Rockland through 2024.

EFFORTS MOVING FORWARD

Based on the findings of the provider survey and through follow-up meetings with the key local medical facilities (hospitals and FQHCs), it was determined that the Rockland partners will focus on and track progress towards reducing concerns around the "Preventing Chronic Diseases and the Promoting Well-Being" and "Preventing Communicable Disease" PA priority areas. The detailed CHIP will be written to accompany this assessment and will contain higher level details about the measures to be addressed, but a couple of the key activities planned at the time of this assessment are:

- Enhanced immunization action program services to increase the general rates of immunization among children and adults and to minimize the disparities seen across racial and ethnic groups.
- Offering vaccines in locations and hours that are convenient to the public including pharmacies, vaccine-only clinics, and other sites that are accessible to people of all ages
- Development and support of a wider selection of multi-cultural, multi-lingual chronic disease prevention and self-management programs to be delivered in novel community locations across the county.
- Implementation of enhanced electronic medical records (EMR) capabilities across provider systems such that important reminders and referrals to specialists for chronic disease follow-up and cancer screening services become built in standards of care for Rockland residents.
- The expansion of comprehensive nutritional and physical activity programs that support sustainable local school wellness activities.
- Establishment of an enhanced CHIP tracking process to elevate effectiveness and accountability of collaborating organizations. This is a carry-over goal that was not met in the previous cycle due to limitations created by the COVID-19 pandemic.

SULLIVAN COUNTY HEALTH SUMMARY

Sullivan County is a geographically large rural county comprised of roughly 79,806 people (July 1, 2021 Census estimates), spread out over 997 square miles with 81.2 people per square mile. It is located approximately 90 miles northwest of NYC in the Catskill Mountains. Residents of Sullivan County are primarily White (83.8%) and English speaking, although there is a growing Hispanic/Latino population, which comprises 17.4% of the population, and 10.2% Black. Approximately 9.5% of residents are foreign born and 15.8% speak a language other than English as their primary language. The county is known for its rich history, especially in tourism, and natural beauty of lakes, rivers, and mountains.

While Sullivan County has struggled for decades economically, improvement was happening before the COVID-19 pandemic. New businesses, including a casino, health spa and indoor water park, had led to an increase in jobs and an unemployment rate that fell to 3.3% in 2019. Post COVID-19 pandemic unemployment rates have increased to 8.8% in 2020, which is still lower than the high of 10.4% in 2010. The median household income for 2020 was $60,433 with a per capita income of $32,346. Both of these have increased since the last community health assessment in 2019, but still fall below the national averages of $64,994 and $35,384, respectively. The poverty rate for 2020 was 12.7%, above the national poverty level of 11.4%. Sullivan County is the only county that is completely rural in the M-H Region. The rural landscape and geographical distance that many people live

from health care providers, hospitals, or emergency rooms influence the poor health factors and health outcomes that have affected Sullivan County for years. Large areas of the county, especially in the western and northern ends, are very remote and lack access to public transportation as well as access to medical providers and services.

AREAS OF FOCUS

In Sullivan County, the leading causes of death and premature death (death before age 75) include cancer, heart disease, unintentional injury, CLRD, and diabetes. Obesity continues to contribute to many of these leading causes of death, as well as hypertension and cardiovascular disease. In Sullivan County, according to 2018 BRFSS data, 69.9% of residents were overweight or obese, compared to 61.4% of M-H Region residents. Reported childhood obesity rates have remained steady, with a decrease in the percentage of overweight or obese children in the county's elementary schools (2017 SWSCRS data). Premature death rates related to CVD have improved, but premature death rate for heart disease (101.7 per 100,000) remains higher than both the M-H Region (65.9) and NYS (83.9). Unintentional injury mortality rates have dramatically increased from 51.4 per 100,000 in 2016 to 75.4 per 100,000 in 2019 and is the highest rate in the state according to 2019 data. This is most likely due in part to the high rates of drug overdose deaths. Sullivan County's overdose death rate for any drug is 43.3 per 100,000, the highest in NYS. All of these factors lead to Sullivan County having a premature death rate of 49.3%, second highest in the state after the Bronx.

- The 2018 rate for newborns with neonatal withdrawal symptoms and/or affected by maternal substance use (43.6 per 1,000 newborn discharges) remains significantly higher than the M-H Region (8.2 per 1,000 discharges) and is one of the highest rates in the state.
- The percentage of women getting screened for breast cancer (55.3%) remains lower than the M-H Region (65.9%) and NYS (71%).
- Only 67.7% of women received early prenatal care, compared to 76.3% in NYS.
- The percentage of Medicaid enrollees aged 2-20 years who had at least one preventative dental visit within the past year decreased from 2016-2019.
- The number of primary care physicians per 100,000 population in Sullivan County is 34, compared to the NYS number of 84 per 100,000.
- The monthly median gross rent increased, as well as the percentage of the renter occupied units in which rent is 30% or more of household income.

EMERGING ISSUES

- Increasing STI rates, including chlamydia and gonorrhea
- Opioid related deaths, hospitalizations, and overall opioid burden
- Increase in tickborne illness, as well as increasing severity of tickborne disease and increasing number of hospitalizations for tickborne illnesses
- Decreasing numbers of providers and accessibility to medical services
- Increasing suicide mortality rates, especially among those aged 15-19 years
- Non-motor vehicle injury mortality rates
- Increasing population
- Electronic vaping use among teens

- Increasing child and adolescent mortality rates
- Emergence of vaccine preventable diseases

COMMUNITY SURVEY DATA POINTS OF NOTE

Sullivan County participated in the Mid-Hudson Region Community Survey in partnership with the six other M-H Region LHDs, Garnet Catskills, and SCRI to collect data from 641 county residents to help better understand and characterize the needs of the community. Below are data points of note:

- 87% of respondents believed people may have a hard time finding a quality place to live due to the high cost of housing
- 77% of respondents believed parents struggle to find affordable, quality childcare
- 78% did not believe people can get where they need to go using public transportation
- 26% of respondents did not visit a primary care doctor in the past 12 months for a routine physical or a check-up
- 43% of respondents did not see a dentist in the past 12 months for a routine check-up or cleaning and 26% of those who didn't go to the dentist stated they didn't go because they didn't have insurance
- 61% of respondents had a tele-health appointment with a healthcare provider during COVID-19
- 28% replied their ability to obtain affordable food that is nutritious worsened
- 80% responded they had been vaccinated for COVID-19

ASSETS AND RESOURCES

Sullivan County Department of Public Health has strong community partnerships with many organizations serving the residents of the county. Our partnerships include the local community hospital, two FQHCs, three urgent care centers, and many CBOs serving the needs of Sullivan County residents. Sullivan County Department of Public Health also leads the Sullivan County Rural Health Network and plays a major role in the Sullivan County Drug Task Force. Sullivan County government continues to invest in "Move Sullivan" to expand access to affordable public transportation for Sullivan County residents. These partnerships will be leveraged to address the heath care areas of focus and emergent health issues for the CHA/CHIP cycle 2022-2024.

EFFORTS MOVING FORWARD

In addition to participating in the Mid-Hudson Region Community Health Survey, a service provider survey, medical provider survey, and community focus groups were convened in conjunction with the Rural Health Network, Sullivan 180, and Health Service Advisory Board to collect data from area providers and members of the community. A total of 36 responses were collected from providers. Responses from each focus group were aggregated to represent the opinions of the community members present. The top three issues impacting the health of Sullivan County residents were: access to medical providers and mental health providers; access to affordable, decent, and safe housing; and access to affordable, reliable public transportation. In the same surveys, the top three barriers to people achieving better health in Sullivan County were: drug and/or alcohol use, knowledge of existing resources, and geographic location (living in a rural area). Significant findings from the groups included:

- Lack of medical services and providers was an area of concern for participants. Consolidation of medical providers into medical care organizations has left many rural areas of the county without basic medical access.
- Transportation remains a barrier to accessing basic services. Move Sullivan has helped to remove barriers, but many areas of the county still do not have access to transportation.
- Health literacy and a lack of assistance in helping patients understand insurance or their medical conditions was identified by providers as a barrier to improving health.
- Access to affordable, nutritious food was an issue impacting health.
- 58% of service providers indicated that chronic disease highly impacts the health of residents.

Sullivan County Department of Public Health will continue to collaborate with community partners to develop areas of focus and strategies for the 2022-2024 CHIP.

ULSTER COUNTY HEALTH SUMMARY

Ulster County is located in the southeastern part of NYS, south of Albany and immediately west of the Hudson River. According to the US Census Bureau, the county has a total area of 1,161 square miles, which is approximately the size of Rhode Island. Much of Ulster County can be characterized as suburban and semi-rural, with only one major urban area, the city of Kingston, which is in the eastern central portion of the county and encompasses just 7.4 square miles of the county's total area. Ulster County is part of the Kingston Metropolitan Statistical Area.

According to the latest estimates available from the US Census Bureau, Ulster County's population was 182,951 in 2021. The total number of households was 70,088 and the household median income was approximately $65,306.

AREAS OF FOCUS

The data analyzed points to several areas of focus for Ulster County. Ulster County has an exceptionally high suicide mortality rate, including among teens and older adults; a high percentage of children and adults who are overweight or obese; an unacceptably high rate of maternal mortality; and opioid related prescription, fatality and emergency department visit rates that are well above the M-H Region and NYS averages.

Other areas of concern:

- Diabetes mortality and hospitalization rates are high, even though the incidence rate is among the lowest in the M-H Region.
- The percentage of adults aged 45 years and older who have had a test for high blood sugar or diabetes is lower than those of the M-H Region and NYS excluding NYC.
- In the past year, 23% of women aged 18-44 years in Ulster County have not had a preventative medical screening.
- The percentage of adults with an annual household income less than $25,000 with perceived food security was only 54.7%, slightly lower than the M-H Region and NYS averages, yet still unacceptably high.
- According to the Mid-Hudson Region Community Health Survey, 92% of people said it was "completely true" or "somewhat true" that it is difficult to find a quality place to live due to the high cost of housing. The Mid-

Hudson Community Partner Survey also confirmed that this is a top issue affecting the people of Ulster County.

- The resident survey and Mid-Hudson Community Partner Survey both indicated that access to mental health providers is a major challenge, which corresponds to regional, state, and national trends, followed by access to affordable and reliable public transportation.
- The crash-related pedestrian fatality rate per 100,000 population in Ulster County is significantly higher than both the M-H Region and NYS excluding NYC.

EMERGING ISSUES

The housing crisis throughout Ulster County has grown significantly worse over the last five years. This can be attributed to the limited construction of new, affordable rental and ownership units and the associated inflated costs of building materials and labor. In addition, the COVID-19 pandemic has caused many NYC Metropolitan area individuals and families to seek weekend and permanent residences, which have increased demand and prices for affordable housing. The expanding tourism industry in Ulster County has also resulted in many previously available and affordable housing units being converted into short-term rentals. Several municipalities in the county have adopted regulations to address this; however, the shortage of available housing units continues to grow. Affordable, healthy, and safe housing is the foundation upon which individuals, families, and the community build their strength, wellness and resiliency and county leadership from every sector has recognized the urgency of immediate action in this area.

Although cigarette use in the county has slightly decreased over time, Ulster County's adult smoking rate (21%) is still higher than the M-H Region and NYS averages. The use of electronic vapor products, also known as e-cigarettes or Electronic Nicotine Delivery Systems (ENDS), has increased. Approximately one-third of all adult residents in Ulster County (30%) have tried e-cigarettes or other vaping products in the past, and 17% currently use e-cigarettes, a significant increase from 11% when first measured in the county in 2018.

COMMUNITY SURVEY DATA POINTS OF NOTE

As part of the CHA process, the Ulster County Department of Health (UCDOH) participated in the Mid-Hudson Region Community Health Survey in partnership with the six other M-H Region LHDs to collect data on over 600 Ulster County residents to help better characterize the needs of the community.

Below are data points of note:

- 92% of Ulster County residents responded, "completely true" or "somewhat true" to the statement, "People may have a hard time finding a quality place to live due to the high cost of housing."
- 26% of Ulster County residents answered, "not very true" or "not at all true" to the statement, "Most people are able to access affordable food that is healthy and nutritious."
- 66% of Ulster County residents responded, "completely true" or "somewhat true" to the statement, "Parents struggle to find affordable, quality childcare."
- 49% of Ulster County residents responded, "not very true" or "not at all true" to the statement, "There are sufficient, quality mental health providers."
- 50% of Ulster County residents responded, "not very true" or "not at all true" to the statement, "People can get where they need to using public transportation."

- 98% of Ulster County residents with household income of less than $50K had not visited a dentist for a routine check-up or cleaning in the last 12 months
- 50% of Ulster County residents with household income of less than $50K rated their mental health as fair or poor.
- 46% of Ulster County residents with household income of less than $50K rated their physical health as fair or poor.

In addition to participating in the Mid-Hudson Region Community Health Survey, a Community Partner Survey was conducted in the spring and early summer of 2022. The survey collected data from health and human services providers that serve underrepresented populations, including low-income, veterans, persons experiencing homelessness, the aging population, LGBTQIA+ community, and people with a mental health diagnosis or substance use disorder. Of the 40 responses collected, the three underlying issues that impact the health of the populations served by their agencies were identified as follows: access to affordable, decent, and safe housing; access to mental health providers; and access to affordable, reliable public transportation.

UCDOH also created a CHA Snapshot and reviewed the most current secondary data indicators available from a wide variety of federal, state, regional, and local data sources for Ulster County, the M-H Region, and NYS. This was provided at the Ulster County PA Leadership Team Meetings for review in 2022. Over 21 partners, including hospitals, health care providers, and CBOs reviewed the most current data, selected the two PA Priorities for the 2022-2024 CHIP, and discussed both assets and barriers to addressing the selected priority areas.

ASSETS AND RESOURCES

UCDOH has strong community partnerships with hundreds of organizations serving its residents, including two area hospitals, FQHCs, private medical providers, local two-year and four-year colleges, a medical school, CBOs, and regional organizations serving a broad variety of community needs. UCDOH and the Ulster County Department of Mental Health have established multiple coalitions, including Healthy Ulster Council, Integrated Ulster, Ulster County Human Services Coalition, Ulster County Suicide Prevention Coalition, Ulster County Opioid Prevention Strategic Action Leadership Team, Ulster County Legislature Workforce Housing Committee, and Ulster County Public Health Preparedness Task Force. In addition to participating in many public health focused coalitions, UCDOH also participates in Live Well Kingston, Ellenville Rural Health Network, Mano-a-Mano (Hispanic coalition), Bringing Agencies Together, Ulster County Healthy Families, Maternal Infant Services Network, Ulster Prevention Council, and Tobacco Free Action Communities, among others. These coalitions' partners and others are mobilized to address the health areas of focus and emerging issues of the 2022-2024 CHA/CHIP cycle.

EFFORTS MOVING FORWARD

- Ulster County continues to implement its comprehensive and integrated strategic action plan to address the opioid epidemic. A dramatic expansion of harm reduction services, access to Medication Assisted Treatment (MAT), connections to care and intermediate and long-term support services has already reduced opioid overdose fatalities by 50% in 2022 compared to the same time in 2021. Much more work needs to be done in this area to achieve acceptable and sustained results.

- Ulster County continues to make significant improvements in the built environment through a combination of federal, state, and local funds. These include ongoing development of a world-class rail trail system throughout the county, pedestrian and bike friendly complete street initiatives, safe routes to schools, and others. All are designed to encourage physical activity, improve access to fresh and healthier foods, and increased social engagement to help prevent chronic diseases. This will also continue to reduce our carbon footprint, while reducing air pollution.
- Ulster County will continue to build on a strong foundation of tobacco prevention policy change by updating legislation to further strengthen regulations designed to protect youth and low income and minority populations from the impacts of tobacco marketing and increasing the awareness of the risks of tobacco and vaping products.
- Ulster County has strengthened the availability of and access to mental health services with the establishment of a walk-in mental health clinic and a soon to be constructed crisis stabilization center.
- Ulster County has established and will continue to develop an innovative Community Smart Housing Initiative designed to help and connect local municipalities as they develop and implement Housing Action Plans. These will include zoning amendments, financial incentives, innovative regulations, and other state of the art tools to increase the number of affordable housing units for low and middle-income residents.
- There are many other health initiatives that Ulster County will be involved to monitor and enhance the progress of public health.

More details are available in the Ulster County CHIP.

WESTCHESTER COUNTY HEALTH SUMMARY

With an area of about 450 square miles, Westchester County is located just north of New York City. It is bordered on the west by the Hudson River, on the north by Putnam County, and on the east by the Long Island Sound and Connecticut's Fairfield County. With its six cities, 19 towns, and 23 villages, Westchester is the home to a mix of urban and suburban communities.

According to the 2016-2020 American Community Survey, the total population residing in Westchester is 968,738, with 48.4% males and 51.6% females. Among them, 61.7% are non-Hispanic White, 14.8% non-Hispanic Black, 6.2% non-Hispanic Asian or Pacific Islander, and 11.7% are of some other race. Just under a quarter of its population is of Hispanic origin and 25.4% of the population is foreign born. About one-third of the residents speak a non-English language at home.

The majority of Westchester residents over the age of 25 have received a high school diploma/GED and almost half have obtained a college and/or beyond college education. The overall unemployment rate is 5.7%. The median household income is estimated at $99,489.

While an affluent county in general, there are pockets of communities living in less desirable conditions. About 8.4% of the population lives in poverty, with higher poverty rates among the non-Hispanic Black and Hispanic populations. About 3.9% of the residents are living in overcrowded housing.

Rather than driving alone, 43% of the population uses an alternative mode of transportation for the commute to work, including carpooling, public transportation, walking, bicycling, or telecommuting.

AREA OF FOCUS AND EFFORTS MOVING FORWARD

Given the complexity of Westchester County's geographic, demographic, and socioeconomic compositions, Westchester County Department of Health extended the Regional Community Health Assessment Survey by reaching out to low-income and minority populations with paper-form and online surveys. The extended CHA survey collected information from an additional 1,109 respondents and presented a complex picture with regard to Westchester's current health status, its emerging health issues, as well as potential areas of focus that the Health Department and collaborative local agencies may provide services to enhance the county's health.

In terms of identifying the department priorities and areas of focus, Westchester County elected to host and facilitate a series of virtual forums with community partners and providers in lieu of a provider survey. The benefits of engaging in these community conversations provided an opportunity to share and discuss the community health assessment (CHA) findings, garner input on currently available and needed assets and resources, identify competing priorities, and establish and convene formal and informal cross-sector partnerships and coalitions to more efficiently share resources and collaboratively address service gaps, barriers to health, and the root causes of inequity.

A wide array of organizations was invited to participate in the forums, including hospital systems, federally funded health centers, mental health agencies, local non-profit community organizations, peer support programs, food pantries, faith-based organizations, local coalitions, school leaders, senior programs, municipality leaders, early intervention and childcare service providers, and others.

Based on the striking findings from the regional and the extended CHA surveys about the racial disparities in most of the areas probed, there is a general consensus on addressing priorities and focus areas through the lens of racial disparity.

ASSETS AND RESOURCES

Westchester County has a rich supply of assets and resources that support the health and well-being of its residents. Some examples include:

- Ample green spaces as well as County and State parks providing about 98% of the population with access to outdoor recreation and exercise opportunities
- Extensive health care systems, including hospitals, federally qualified health cares, urgent care centers, and laboratories, operating within the county providing timely and state-of-art direct health care
- A large number of colleges and universities located within the county providing opportunities for health education
- The extensive Bee-Line bus system serving over 27 million passengers annually, providing transportation services to over 65% of all Westchester County residents and workplaces with walking distance to a Bee-Line bus route, making the bus both close and convenient
- United Way's 211 information and referral system contains information on non-profit organizations for many communities in Westchester
- A variety of community organizations, task forces, coalitions, and other agencies working on providing direct services as well as policy and structural change within the county.

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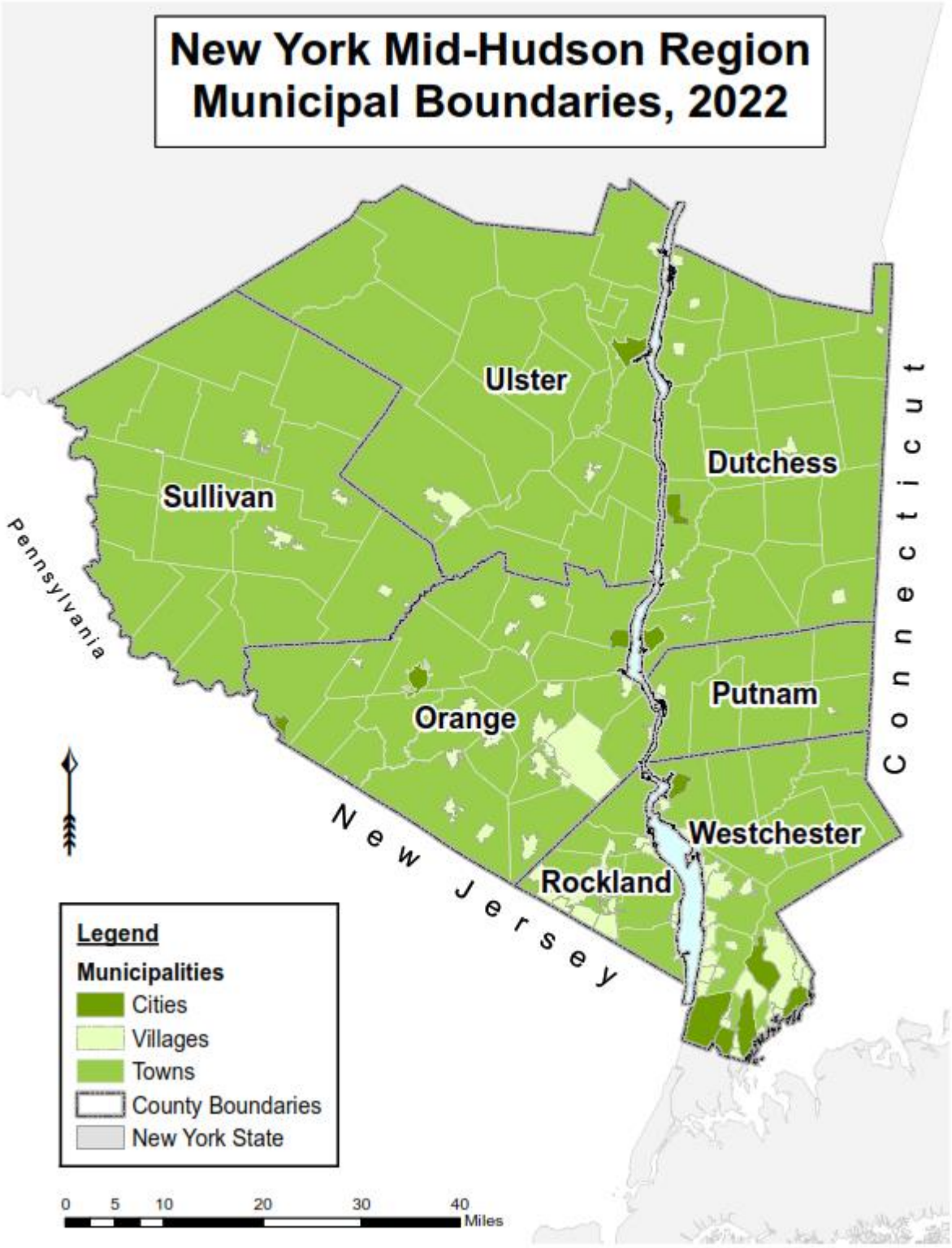
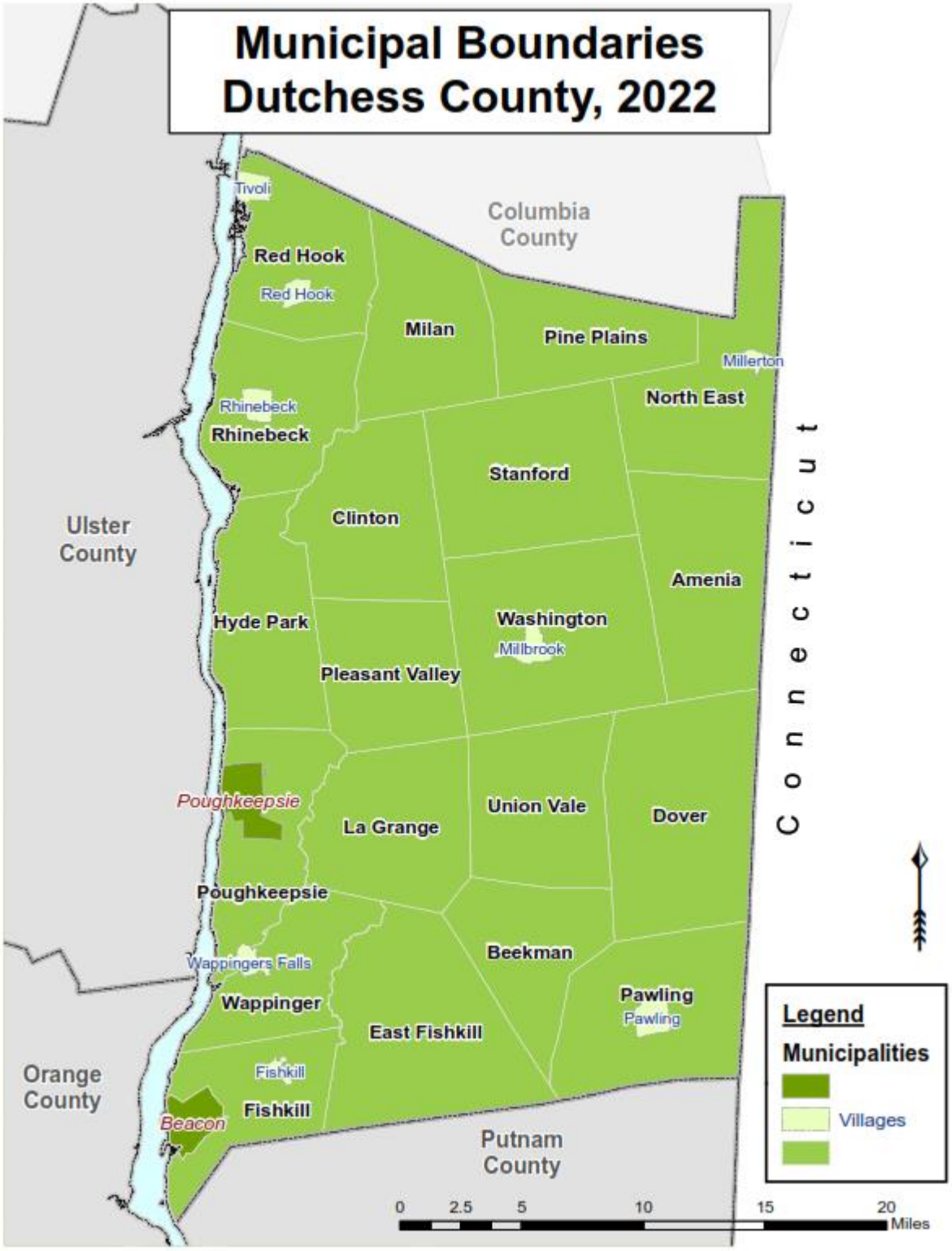
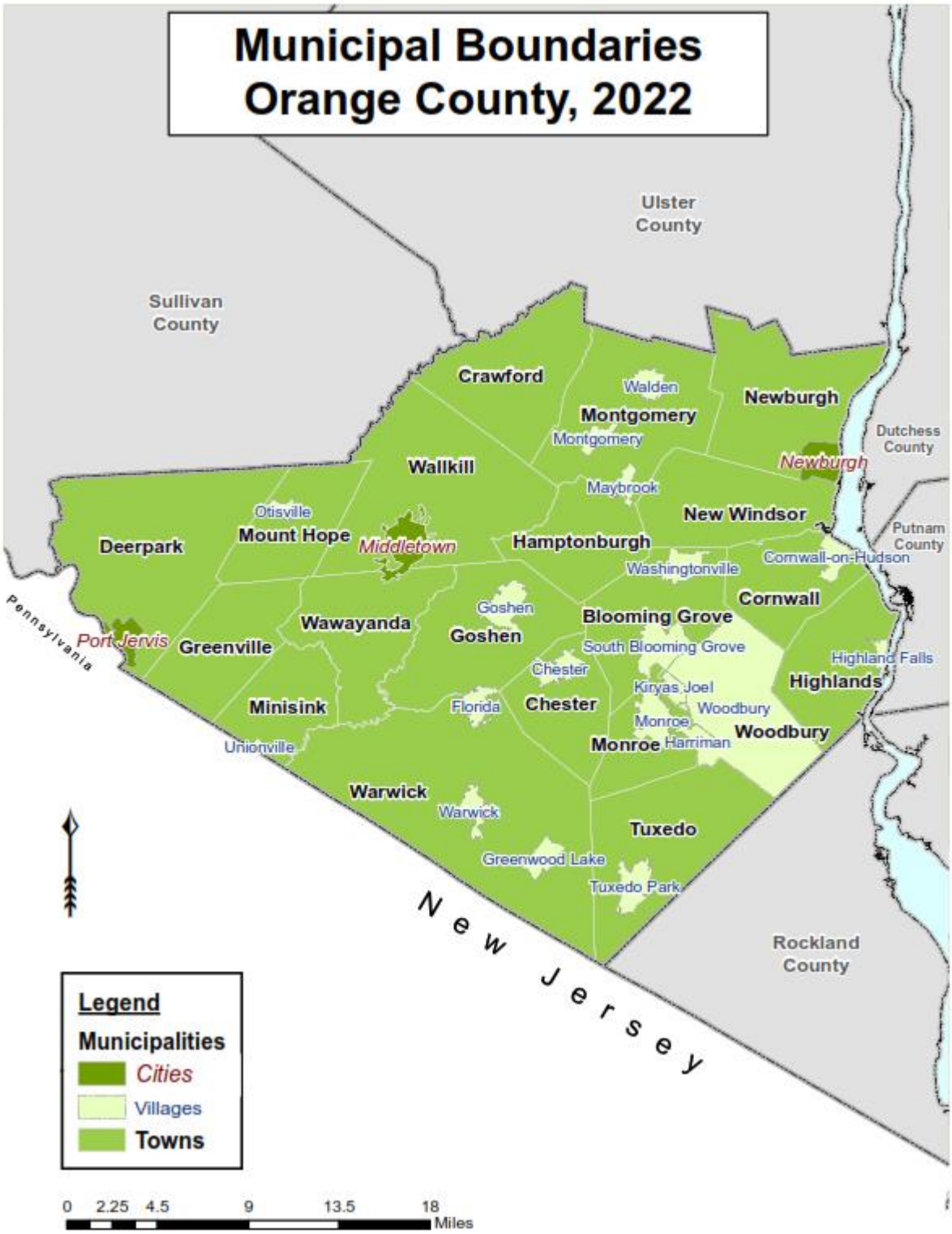
APPENDIX A - MID-HUDSON REGION MAP



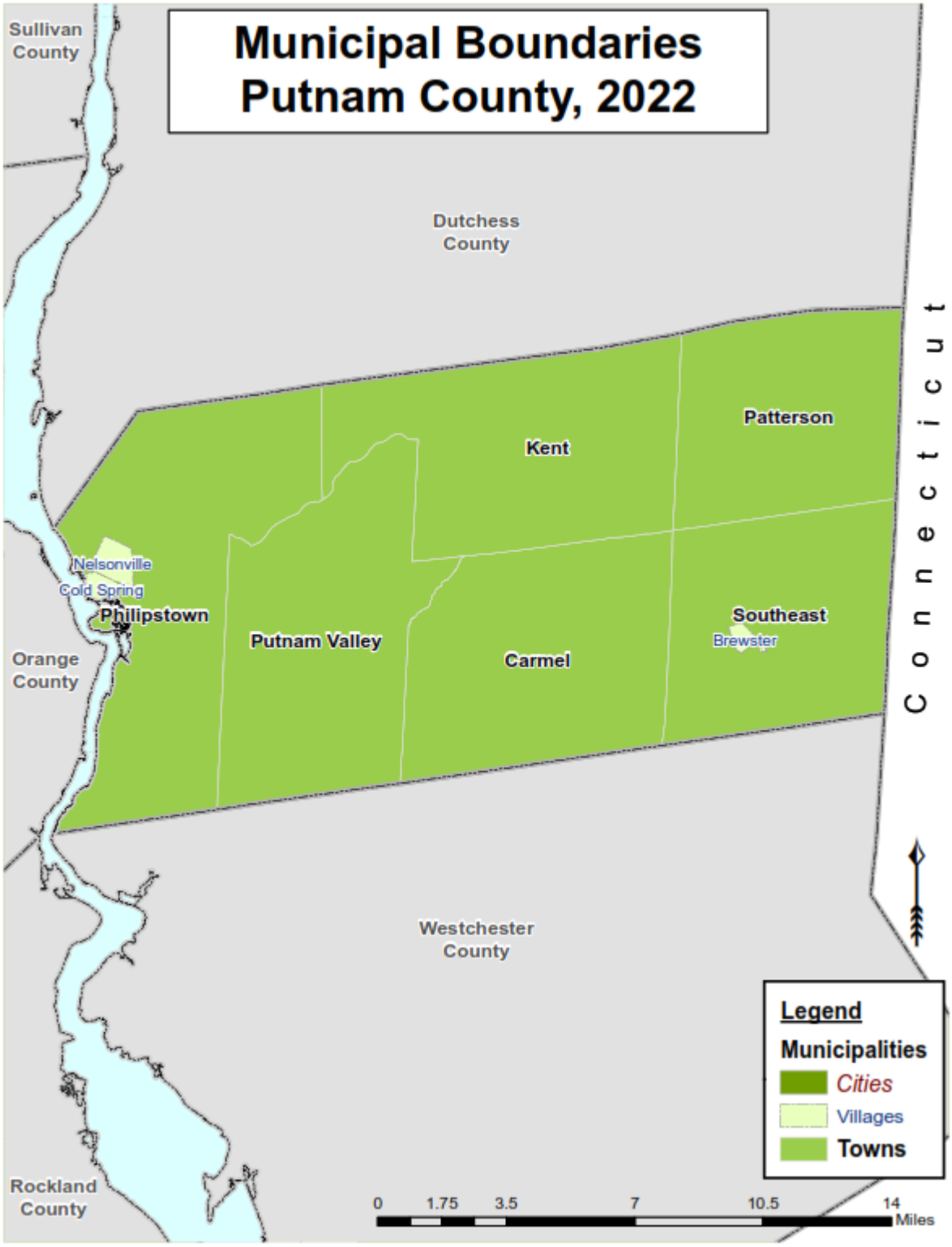
APPENDIX B - DUTCHESS COUNTY MAP



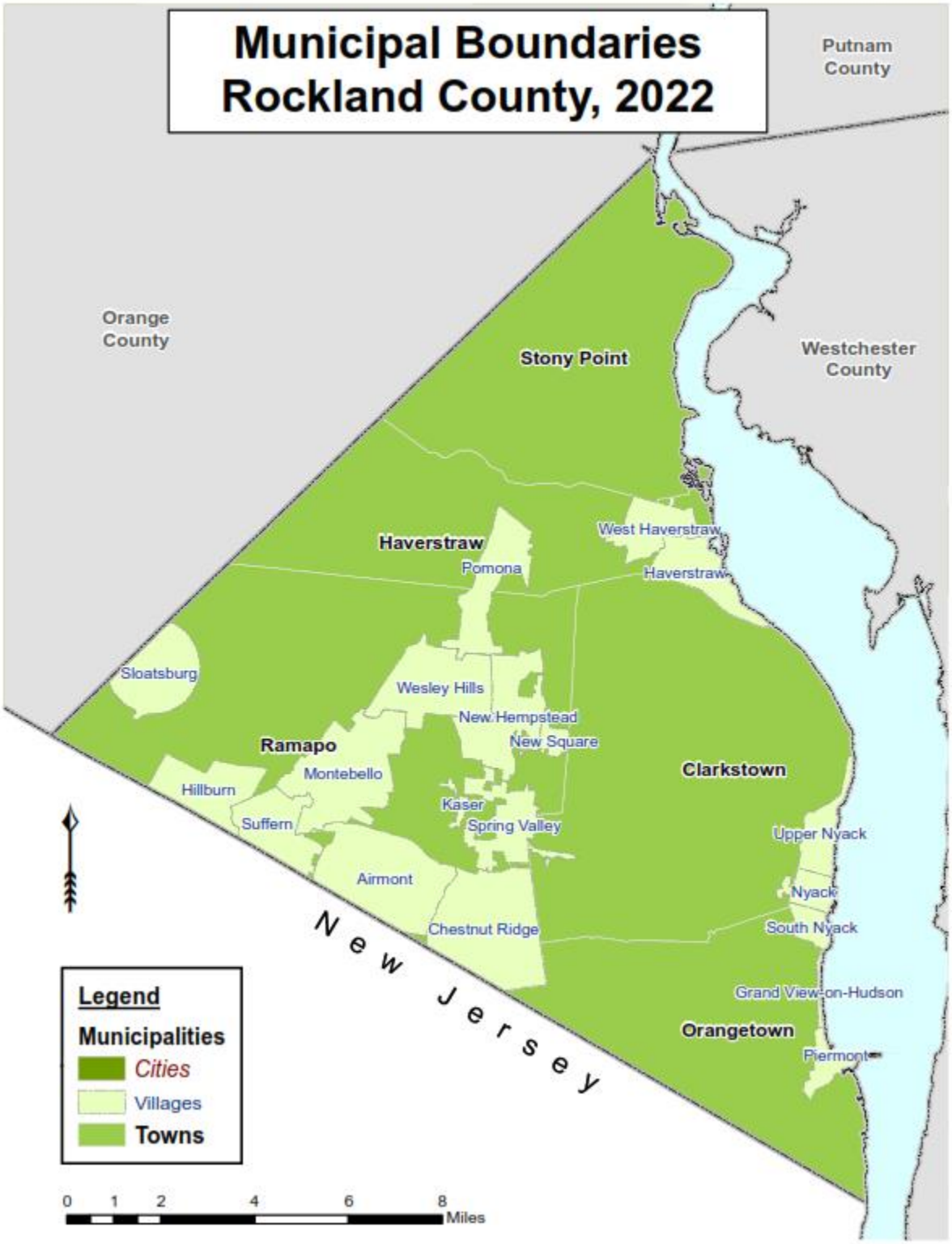
APPENDIX C - ORANGE COUNTY MAP



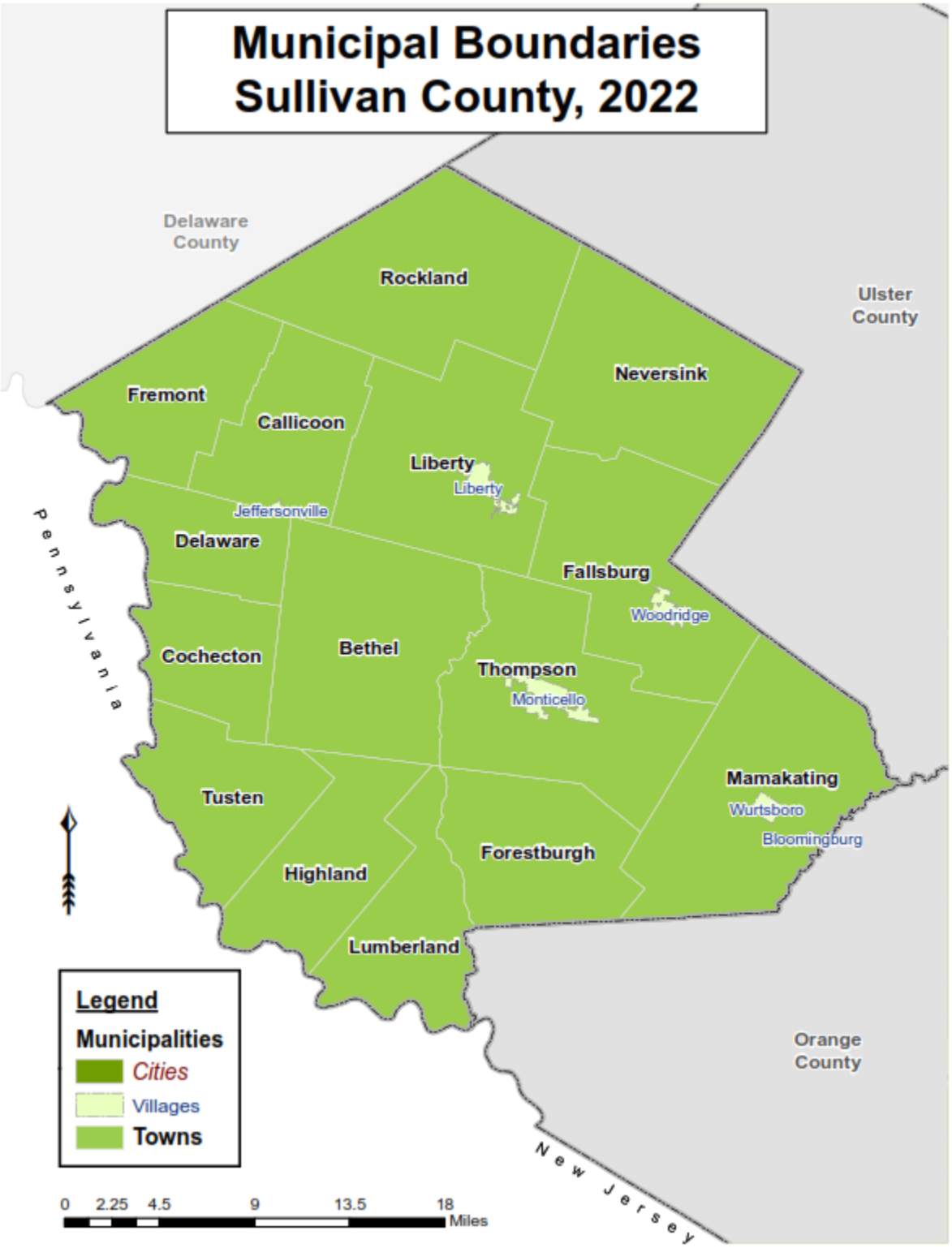
APPENDIX D - PUTNAM COUNTY MAP



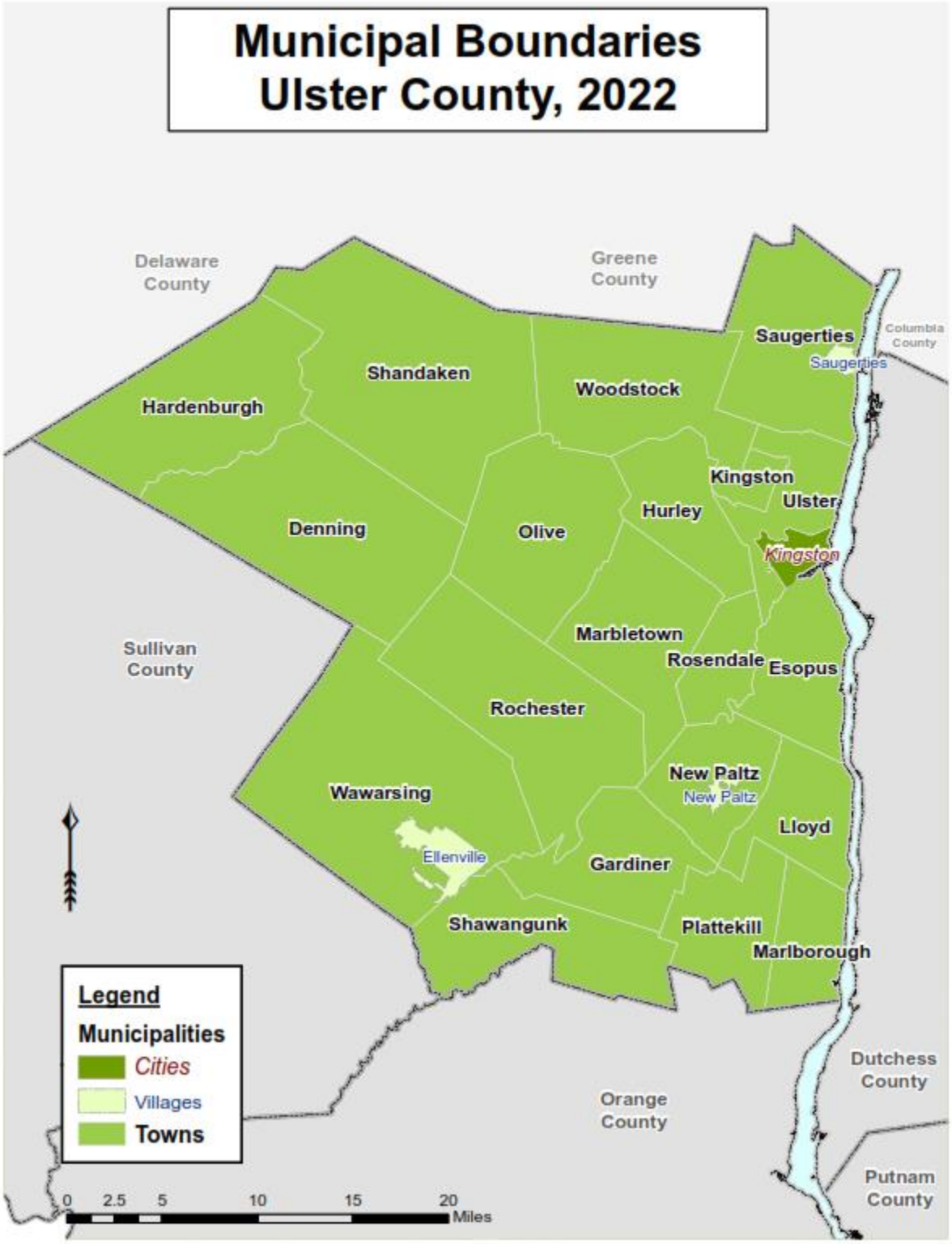
APPENDIX E - ROCKLAND COUNTY MAP



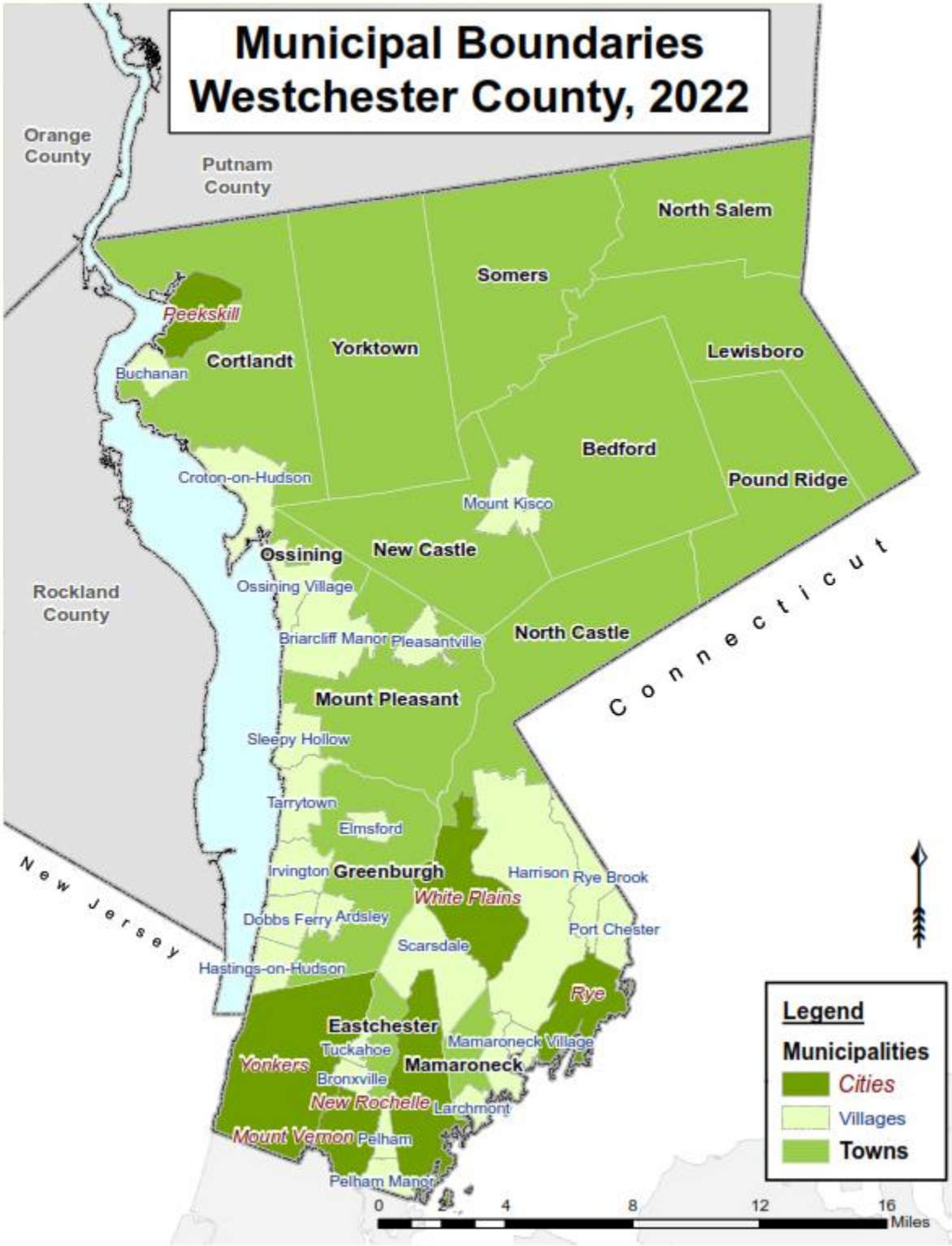
APPENDIX F - SULLIVAN COUNTY MAP



APPENDIX G - ULSTER COUNTY MAP



APPENDIX H - WESTCHESTER COUNTY MAP



APPENDIX I - MID-HUDSON REGION COMMUNITY HEALTH SURVEY SCRIPT

INT01:

Hello, this is _____from the Siena College Research Institute. We are working with local health departments and hospital systems to survey Hudson Valley residents to better understand the health status and health-related values of people who live in the community. Are you 18 years of age or older? IF DIALING LANDLINE: May I speak with the youngest person in the household age 18 or older? IF NEEDED: You´ve been selected at random to be included in this survey. Your individual responses are confidential and no identifiable information about you will be shared with anyone-all responses are grouped together. The questions I am going to ask you relate to your health and to your thoughts about health-related resources in your community. Again, your responses may really help to strengthen health policies and services .IF NEEDED: In total, the survey takes approximately 10 minutes to complete and you may refuse to answer any question that you do not want to answer. Are you able to help us with this important project?

Continue with survey .....OK
Call back at a later time 21
Appointment.....22
Not a Private Residence.....23
No Eligible Respondent 24
Soft Refusal.....81
Hard Refusal.....82
Do Not Call 83
Spanish Speaking 31
Not English or Spanish Speaking.....32
No Male in Household 41

CELLPHONE:

Have I reached you on a cell phone?

Yes 1
No 2

SAFE:

Are you in a place where you can safely talk on the phone and answer my questions?

Yes 1
No 2

STATE2:

Do you live in New York state?

Yes 1
No 2
Refused 9

BUSCELL:

Is the cell phone I have reached you on used only for personal use, only for business use, or used for both personal and business use?

Personal use 1
Business use 2
Both..... 3
[DO NOT READ] Refused 9

COUNTY2:

What county in New York State do you live in? [DO NOT READ LIST]

Albany 001
Allegany 003
Bronx 005
Broome 007
Cattaraugus 009
Cayuga 011
Chautauqua 013
Chemung 015
Chenango 017
Clinton 019
Columbia 021
Cortland 023
Delaware 025
Dutchess 027
Erie 029
Essex 031
Franklin 033
Fulton 035
Genesee 037
Greene 039
Hamilton 041
Herkimer 043
Jefferson 045
Kings - Brooklyn 047
Lewis 049
Livingston 051
Madison 053
Monroe 055
Montgomery 057
Nassau 059
New York - Manhattan 061
Niagara 063
Oneida 065
Onondaga 067
Ontario 069
Orange 071
Orleans 073
Oswego 075
Otsego 077
Putnam 079
Queens 081
Rensselaer 083
Richmond - Staten Island 085
Rockland 087
St. Lawrence 089
Saratoga 091
Schenectady 093
Schoharie 095
Schuyler 097
Seneca 099
Steuben 101
Suffolk 103
Sullivan 105
Tioga 107
Tompkins 109
Ulster 111
Warren 113
Washington 115
Wayne 117

Westchester 119
Wyoming 121
Yates 123
Don't know/Refused 999

Q4:

How long have you lived in <county2> County?
Less than 1 year 1
At least 1 year but less than 2 years 2
At least 2 years but less than 5 years 3
5 years or more 4
[DO NOT READ] Don't know/Refused 9

Q5KEY:

I´m going to read you a series of statements that some people make about the area around where they live, that is, their community. For each, tell me if that statement is completely true of your community, somewhat true, not very true or not at all true for your community.
Continue 1

Q5A:

There are enough jobs that pay a living wage.[IF NEEDED: Tell me if that statement is completely true of your community, somewhat true, not very true or not at all true for your community.]
Completely true 1
Somewhat true 2
Not very true 3
Not at all true 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q5B:

Most people are able to access affordable food that is healthy and nutritious.[IF NEEDED: Tell me if that statement is completely true of your community, somewhat true, not very true or not at all true for your community.]
Completely true 1
Somewhat true 2
Not very true 3
Not at all true 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q5C:

People may have a hard time finding a quality place to live due to the high cost of housing.[IF NEEDED: Tell me if that statement is completely true of your community, somewhat true, not very true or not at all true for your community.]
Completely true 1
Somewhat true 2
Not very true 3
Not at all true 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q5D:

Parents struggle to find affordable, quality childcare.[IF NEEDED: Tell me if that statement is completely true of your community, somewhat true, not very true or not at all true for your community.]
Completely true 1
Somewhat true 2
Not very true 3
Not at all true 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q5E:

There are sufficient, quality mental health providers.[IF NEEDED: Tell me if that statement is completely true of your community, somewhat true, not very true or not at all true for your community.]
Completely true 1
Somewhat true 2
Not very true 3
Not at all true 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q5F:

Local government and/or local health departments, do a good job keeping citizens aware of potential public health threats.[IF NEEDED: Tell me if that statement is completely true of your community, somewhat true, not very true or not at all true for your community.]
Completely true 1
Somewhat true 2
Not very true 3
Not at all true 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q5G:

There are places in this community where people just don´t feel safe.[IF NEEDED: Tell me if that statement is completely true of your community, somewhat true, not very true or not at all true for your community.]
Completely true 1
Somewhat true 2
Not very true 3
Not at all true 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q5H:

People can get to where they need using public transportation.[IF NEEDED: Tell me if that statement is completely true of your community, somewhat true, not very true or not at all true for your community.]
Completely true 1
Somewhat true 2
Not very true 3
Not at all true 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q6:

Overall, how would you rate the quality of information you receive from county agencies during public emergencies, such as weather events or disease outbreaks? Would you say it is excellent, good, fair or poor?

Excellent 1
Good 2
Fair 3
Poor 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q7:

In general, how would you rate your physical health? Would you say that your physical health is excellent, good, fair or poor?

Excellent 1
Good 2
Fair 3
Poor 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q8:

Mental health involves emotional, psychological and social wellbeing. How would you rate your overall mental health? Would you say that your mental health is excellent, good, fair or poor?[IF NEEDED: including things like hopefulness, level of anxiety and depression.]

Excellent 1
Good 2
Fair 3
Poor 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q9KEY:

Thinking back over the past 12 months, for each of the following statements I read, tell me how many days in an AVERAGE WEEK you did each.

Continue 1

Q9A:

Over the past 12 months how many days in an average week did you eat a balanced, healthy diet?

0 days 1
1 to 3 days 2
4 to 6 days 3
All 7 days 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q9B:

Over the past 12 months how many days in an average week did you exercise for 30 minutes or more a day?

0 days 1
1 to 3 days 2
4 to 6 days 3
All 7 days 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q9C:

Over the past 12 months how many days in an average week did you get 7 to 9 hours of sleep in a night?
0 days 1
1 to 3 days 2
4 to 6 days 3
All 7 days 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q10:

On an average day, how stressed do you feel?[IF NEEDED: Stress is when someone feels tense, nervous, anxious, or can´t sleep at night because their mind is troubled.]
Not at all stressed 1
Not very stressed 2
Somewhat stressed 3
Very stressed 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q11:

In your everyday life, how often do you feel that you have quality encounters with friends, family, and neighbors that make you feel that people care about you?[IF NEEDED: For example, talking to friends on the phone, visiting friends or family, going to church or club meetings]
Less than once a week 1
1 to 2 times a week 2
3 to 5 times a week 3
More than 5 times a week 4
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q12:

How frequently in the past year, on average, did you drink alcohol?[READ LIST]
Never 1
Less than once per month 2
More than once per month, but less than weekly 3
More than once per week, but less than daily 4
Daily 5
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q13:

Do you currently drink alcohol less often than you did before the COVID-19 pandemic, more often than you did before the pandemic or about as often as you did before the pandemic?
Less often than you did 1
More often that you did 2
About as often as you did 3
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q14:

How frequently in the past year have you used a drug whether it was a prescription medication or not, for non-medical reasons?

Never 1
Less than once per month 2
More than once per month, but less than weekly 3
More than once per week, but less than daily 4
Daily 5
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q15:

Do you currently use any type of drug less often than you did before the COVID-19 pandemic, more often than you did before the pandemic or about as often as you did before the pandemic?

Less often than you did 1
More often that you did 2
About as often as you did 3
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q16KEY:

In the past 12 months, have you or any other member of your household been unable to get any of the following when it was really needed? Please answer yes or no for each item.

Continue 1

Q16A:

Food[IF NEEDED: Have you or any other member of your household been unable to get any of the following when it was really needed?]

Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q16B:

Utilities, including heat and electric[IF NEEDED: Have you or any other member of your household been unable to get any of the following when it was really needed?]

Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q16C:

Medicine[IF NEEDED: Have you or any other member of your household been unable to get any of the following when it was really needed?]

Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q16D:

Any healthcare, including dental or vision[IF NEEDED: Have you or any other member of your household been unable to get any of the following when it was really needed?]
Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q16E:

Phone[IF NEEDED: Have you or any other member of your household been unable to get any of the following when it was really needed?]
Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q16F:

Transportation[IF NEEDED: Have you or any other member of your household been unable to get any of the following when it was really needed?]
Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q16G:

Housing[IF NEEDED: Have you or any other member of your household been unable to get any of the following when it was really needed?]
Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q16H:

Childcare[IF NEEDED: Have you or any other member of your household been unable to get any of the following when it was really needed?]
Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q16I:

Access to the internet[IF NEEDED: Have you or any other member of your household been unable to get any of the following when it was really needed?]
Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q17:

Have you visited a primary care physician for a routine physical or checkup within the last 12 months?
Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q18:

In the last 12 months, were any of the following reasons that you did not visit a primary care provider for a routine physical or checkup? INTERVIEWER: Read each choice and get a Yes or No response for each

I did not have insurance 01
I did not have enough money [IF NEEDED: For things like co-payments, medications, etc] 02
I did not have transportation 03
I did not have time 04
I chose not to go due to concerns over COVID 05
I chose not to go for another reason 06
I couldn't get an appointment for a routine physical or checkup.....07
[DO NOT READ] Other (specify).....97
[DO NOT READ] Don't know.....98
[DO NOT READ] Refused.....99

Q19:

Have you visited a dentist for a routine check-up or cleaning within the last 12 months?

Yes 1
No 2
[DO NOT READ] Don't know..... 8
[DO NOT READ] Refused..... 9

Q20:

In the last 12 months, were any of the following reasons that you did not visit a dentist for a routine check-up or cleaning? INTERVIEWER: Read each choice and get a Yes or No response for each

I did not have insurance 01
I did not have enough money [IF NEEDED: For things like co-payments, medications, etc] 02
I did not have transportation 03
I did not have time 04
I chose not to go due to concerns over COVID 05
I chose not to go for another reason 06
I couldn't get an appointment for a routine check-up or cleaning.....07
[DO NOT READ] Other (specify).....97
[DO NOT READ] Don't know.....98
[DO NOT READ] Refused.....99

Q21:

Sometimes people visit the emergency room for medical conditions or illnesses that are not emergencies; that is, for health-related issues that may be treatable in a doctor´s office. Have you visited an emergency room for a medical issue that was not an emergency in the last 12 months?

Yes 1
No 2
[DO NOT READ] Don't know..... 8
[DO NOT READ] Refused..... 9

Q22:

In the last 12 months, for which of the following reasons did you visit the emergency room for a non-health emergency rather than a doctor´s office? INTERVIEWER: Read each choice and get a Yes or No response for each

I do not have a regular doctor/primary care doctor 01
The emergency room was more convenient because of location.....02
The emergency room was more convenient because of cost 03
The emergency room was more convenient because of hours of operation04
At the time I thought it was a health-related emergency, though I later learned it was NOT an emergency 05
.....
My primary care doctor was not available due to COVID.....06
COVID-19 Testing 07
[DO NOT READ] Don't know.....98
[DO NOT READ] Refused.....99

Q23:

Have you visited a mental health provider, such as a psychiatrist, psychologist, social worker, therapist for 1-on-1 appointments or group-sessions (either in-person or online), etc. within the last 12 months?

Yes 1
No 2
[DO NOT READ] Don't know..... 8
[DO NOT READ] Refused..... 9

Q24:

In the last 12 months, were any of the following reasons that you did not visit a mental health provider? [READ LIST] INTERVIEWER: Read each choice and get a Yes or No response for each

I did not have a need for mental health services.....01
I did not have insurance 02
I did not have enough money [IF NEEDED: For things like co-payments, medications, etc] 03
I did not have transportation 04
I did not have time 05
I chose not to go.....06
A mental health provider was not available due to COVID 07
[DO NOT READ] Other (specify).....97
[DO NOT READ] Don't know.....98
[DO NOT READ] Refused.....99

Q25:

During COVID, have you had a tele-health appointment with any healthcare provider?

Yes 1
No 2
[DO NOT READ] Don't know..... 8
[DO NOT READ] Refused..... 9

Q26:

Which of the following were reasons that you did not have a tele-health appointment?

I did not have a need for tele-health services.....01
My doctor did not offer tele-health 02
I don't have access to the internet.....03
I didn't know how to set up or participate in a tele-health appointment04
I prefer in person so I didn't set up a tele-health appointment 05
I put off all medical care during the pandemic.....06
[DO NOT READ] Other (specify).....97
[DO NOT READ] Don't know.....98
[DO NOT READ] Refused.....99

Q27:

Have you ever had COVID?
Yes 1
No 2
[DO NOT READ] Not sure 8
[DO NOT READ] Refused 9

Q28:

And what about the other members of your household, has any other member of your household had COVID?
Yes 1
No 2
[DO NOT READ] Don't have any other household members 7
[DO NOT READ] Not sure 8
[DO NOT READ] Refused 9

Q29:

Have you or any other household member had ongoing COVID symptoms that have lasted more than four weeks - otherwise known as long-COVID?
Yes 1
No 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q30KEY:

Consider the impact of COVID on each of the following and indicate whether it has improved over the course of the pandemic, worsened or stayed the same?
Continue 1

Q30A:

Your physical health [IF NEEDED: Has this improved over the course of the pandemic, worsened or stayed the same?]
Improved 1
Worsened 2
Stayed the same 3
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q30B:

Your mental health [IF NEEDED: Has this improved over the course of the pandemic, worsened or stayed the same?]
Improved 1
Worsened 2
Stayed the same 3
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q30C:

Your ability to obtain affordable food that is nutritious [IF NEEDED: Has this improved over the course of the pandemic, worsened or stayed the same?]
Improved 1
Worsened 2
Stayed the same 3
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q30D:

Your ability to maintain employment that pays at least a living wage [IF NEEDED: Has this improved over the course of the pandemic, worsened or stayed the same?]

Improved 1
Worsened 2
Stayed the same 3
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q30E:

Your ability to afford housing [IF NEEDED: Has this improved over the course of the pandemic, worsened or stayed the same?]

Improved 1
Worsened 2
Stayed the same 3
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q30F:

Your ability to find available, quality childcare [IF NEEDED: Has this improved over the course of the pandemic, worsened or stayed the same?]

Improved 1
Worsened 2
Stayed the same 3
[DO NOT READ] Don't need childcare 7
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q30G:

Your ability to obtain care or to care for any member of your household that has a disability or chronic illness[IF NEEDED: Has this improved over the course of the pandemic, worsened or stayed the same?]

Improved 1
Worsened 2
Stayed the same 3
[DO NOT READ] Don't need this type of care 7
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q31:

Have you been vaccinated for COVID?

Yes 1
No 2
[DO NOT READ] Refused 9

Q32:

Thinking back to when you got vaccinated, did you get it as soon as you were eligible or were you somewhat hesitant to get the COVID vaccine?

Got it as soon as eligible 1
Somewhat hesitant 2
[DO NOT READ] Don't know 8
[DO NOT READ] Refused 9

Q33:

Why did you end up getting the vaccine? INTERVIEWER: Read all choices and get a yes or no to each response.
You were required to by your job....01
You were required to for some other reason....02
You or someone you know got sick or died with COVID....03
Faith-based community encouraged me....04
Family or friends encouraged me....05
Learned more about the vaccine....06
Your doctor recommended it....07
[DO NOT READ] Other (specify)....97
[DO NOT READ] Don't know....98
[DO NOT READ] Refused....99

CELLLL:

Is there at least one telephone INSIDE your home that is currently working and is not a cell phone?
No (Landline Only).... 1
Yes.... 2
No.... 3
[DO NOT READ] Refused.... 9

LLCELL:

Do you have a working cell phone?
Yes.... 2
No.... 1
No (Cell Phone Only).... 3
[DO NOT READ] Refused.... 9

PHONETYP:

Landline or Cell Phone
Landline Only.... 1
Landline and Cell Phone.... 2
Cell Phone Only.... 3
[DO NOT READ] Refused.... 9

HISP:

Are you of Hispanic origin or descent, such as Mexican, Dominican, Puerto Rican, Cuban, or some other Spanish background?
Yes.... 1
No.... 2
[DO NOT READ] Refused.... 9

RACE:

Would you consider yourself: [IF "Biracial" or "Multi-racial" ask: "What races would that be?"]
African American or Black.... 1
American Indian or Alaska Native.... 2
Asian.... 3
Native Hawaiian or Other Pacific Islander.... 4
White.... 5
[DO NOT READ] Other/Something else (specify).... 7
[DO NOT READ] Refused.... 9

BYR2:

In what year were you born? INTERVIEWER: ENTER ALL FOUR DIGITS OF THE RESPONDENT'S BIRTH YEAR IN BOX AT BOTTOM OF SCREEN [IF NEEDED: This is just used to compute your age.]
REFUSAL ..... RF

OWN:

What is your living arrangement? Do you...
Rent an apartment or home 1
Own your home 2
Other living arrangement 3
[DO NOT READ] Refused 9

EMPLOY:

Which of the following categories best describes your current employment situation? [IF self-employed: "Would that be full-time or part-time?"]
Employed full-time 1
Employed part-time 2
Underemployed, below my skill or pay level 3
Unemployed, looking for work 4
Unemployed, not looking for work 5
Retired 6
Vol: Disabled 7
Other (specify) 8
[DO NOT READ] Refused 9

CHILD:

Are there children under the age of 18 living in your household?
Yes 1
No 2
[DO NOT READ] Refused 9

MILITARY:

Are you or anyone in your household a veteran or a member of active duty military service?
Yes 1
No 2
[DO NOT READ] Refused 9

DISABILITY:

Do you or anyone in your household have a disability?
Yes 1
No 2
[DO NOT READ] Refused 9

INCOME:

About how much is your total household income, before any taxes? Include your own income, as well as your spouse or partner, or any other income you may receive, such as through government benefit programs. [IF NEEDED: "I just want to remind you that you are completely anonymous. We only use this information in aggregate form to ensure we have a representative group of New Yorkers."]
Less than $25,000 1
$25,000 to just under $50,000 2
$50,000 to just under $100,000 3
$100,000 to just under $150,000 4
$150,000 or more 5
[DO NOT READ] Refused 9

GENDER:

How do you describe your gender? Do you..

Identify as a man 1
Identify as a woman 2
Identify as gender queer, gender nonconforming or non-binary 3
Identify as transgender, man 4
Identify as transgender, woman 5
Identify as transgender, gender non-conforming 6
Identify as another Gender not listed, please specify 7
[DO NOT READ] Don't know/Refused 9

APPENDIX J

SIENAcollege

Institutional Review Board

Kristin Miller, Ph.D.
Professor of Psychology
Chair

John Bebb, M.S.Ed.
Senior Associate Dean of Students / Title IX

Mohua Bose, Ph.D.
Associate Vice President of Academic Affairs/ Institutional Effectiveness (ex-officio)

Dirk De Jong, Ph.D.
Associate Professor of Social Work

Michael Jarco, Ph.D.
Associate Professor of Psychology

Anna Nolan Ph.D.
External Reviewer Independent Consultant

Daniel Robeson, Ph.D.
Associate Professor of Management

Ray Walsh, M.D.
Director, Joint Medical Program

March 16, 2022

To: Leslie Foster, Business Development Manager
Siena College Research Institute (SCRI)

Subject: Hudson Valley Health Survey

Dear Leslie,

Thank you for submitting an application for the project, "*Hudson Valley Health Survey*." After review of the protocol and discussions with you, it is my determination that SCRI is *not* conducting research. As such, **SCRI's activities on the project do not fall under IRB oversight, and approval is not necessary.**

The determination was made in accordance with the federal definition of "research" as put forth by the U.S. Department of Health and Human Services:

"Research means systematic investigation, including development, testing, and. evaluation, designed to develop or contribute to generalizable knowledge" (45CFR46.102(l)). Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes."

As described in the IRB application, the role of SCRI in this project "is to provide county health departments with data to inform their programs and offerings." This suggest that the overall purpose of the project is quality improvement and/or program evaluation, rather than research.

More specifically, SCRI is collecting survey responses (which "measure the health and wellbeing of the residents in seven counties") and sharing aggregate data back with the participating county health departments, presumably for their internal use. (If shared with larger audiences, seemingly the focus would be to suggest potentially effective models or provide benchmarks, trends, or base rates rather than to develop or contribute to generalizable knowledge. The assessment of how the health departments use the information falls outside the role of the Siena IRB.)

Siena has not received any funding for this project to be conducted as a human subjects research study, so there is no mandate for this activity. Further, based on our discussion employees of SCRI do not have intent to disseminate the data in research/scientific publications or other research/scientific nor are the results expected to develop or contribute to generalizable knowledge by filling a gap in scientific knowledge or supporting, refining other research studies.

We wish you the best for this project. Siena's involvement does not require IRB approval. If you have any questions, please feel free to contact me.

Warm regards,

Kristin Miller, PhD
Chair, Siena IRB

APPENDIX K

Stakeholder Interview Survey

Thank you very much for taking the time to complete this survey. Your responses will be integral to the development of priorities and a health improvement plan to better the lives of our community residents.

1. Name _____
2. Organization _____
3. Organization Website_____
4. Position _____

5. What is your service area?
   - ☐ On website

   _____
   _____
   _____

6. Who do you serve? *Please check all that apply*
   - ☐ Infants and toddlers
   - ☐ Children
   - ☐ Adolescents
   - ☐ Adults
   - ☐ Seniors
   - ☐ Veterans
   - ☐ English as a second language
   - ☐ Women (services specifically for women)
   - ☐ Men (services specifically for men)
   - ☐ LGBTQ
   - ☐ Those with a substance use disorder
   - ☐ Those with a mental health diagnosis
   - ☐ People with Disabilities
   - ☐ People experiencing Homelessness
   - ☐ Incarcerated or recently incarcerated
   - ☐ Low income
   - ☐ General population
   - ☐ All the above

7. Thinking about the populations that you serve, what are the top 3 issues that affect health in the communities you serve?
   - ☐ Access to affordable nutritious food
   - ☐ Access to affordable, decent and safe housing
   - ☐ Access to affordable, reliable public transportation
   - ☐ Access to culturally sensitive health care providers
   - ☐ Access to affordable health insurances
   - ☐ Access to clean water and non-polluted air
   - ☐ Access to medical providers
   - ☐ Access to mental health providers
   - ☐ Access to high quality education
   - ☐ Access to specialty services/providers
   - ☐ Access to affordable childcare

8. Which of the following are the top 3 barriers to people achieving better health in the communities you serve?
   - ☐ Knowledge of existing resources
   - ☐ Geographic location – living in an urban area
   - ☐ Geographic location – living in a rural area
   - ☐ Health literacy
   - ☐ Having someone help them understand insurance
   - ☐ Having someone to help them understand their medical condition
   - ☐ Having a safe place to play and/or exercises
   - ☐ Quality of education
   - ☐ Attainment of education
   - ☐ Drug and/or alcohol use
   - ☐ Cultural Customs
   - ☐ Other (specify) _____

9. Besides lack of money, what are the underlying factors and barriers to solving the top 3 issues you identified in the communities you serve?

_____
_____
_____
_____
_____

10. What is the main issue your clients now face due to the COVID pandemic? Is this different than what was faced pre-pandemic?

_____
_____
_____
_____

11. How has the COVID pandemic changed the way you provide services to your clients?

_____
_____
_____
_____

12. Do you have any evidence-based interventions (practices or programs that have evidence to show that they are effective at producing results and improving outcomes when implemented) that you are currently using with your clients?

_____

_____

_____

_____

13. For the following list of health issues, please rate from 1 to 5 the impact of the health issues in your service area with, 1 being very little and 5 being highly impacted.

Chronic Disease (e.g. heart disease, diabetes, asthma, obesity, etc.)

Very Little 1 2 3 4 5 Highly Impacted

Health Disparities

Very Little 1 2 3 4 5 Highly Impacted

Mental Health and Substance Use Issues

Very Little 1 2 3 4 5 Highly Impacted

Maternal and Child Health issues

Very Little 1 2 3 4 5 Highly Impacted

Environmental Factors (e.g. built environment, air/water quality, injuries)

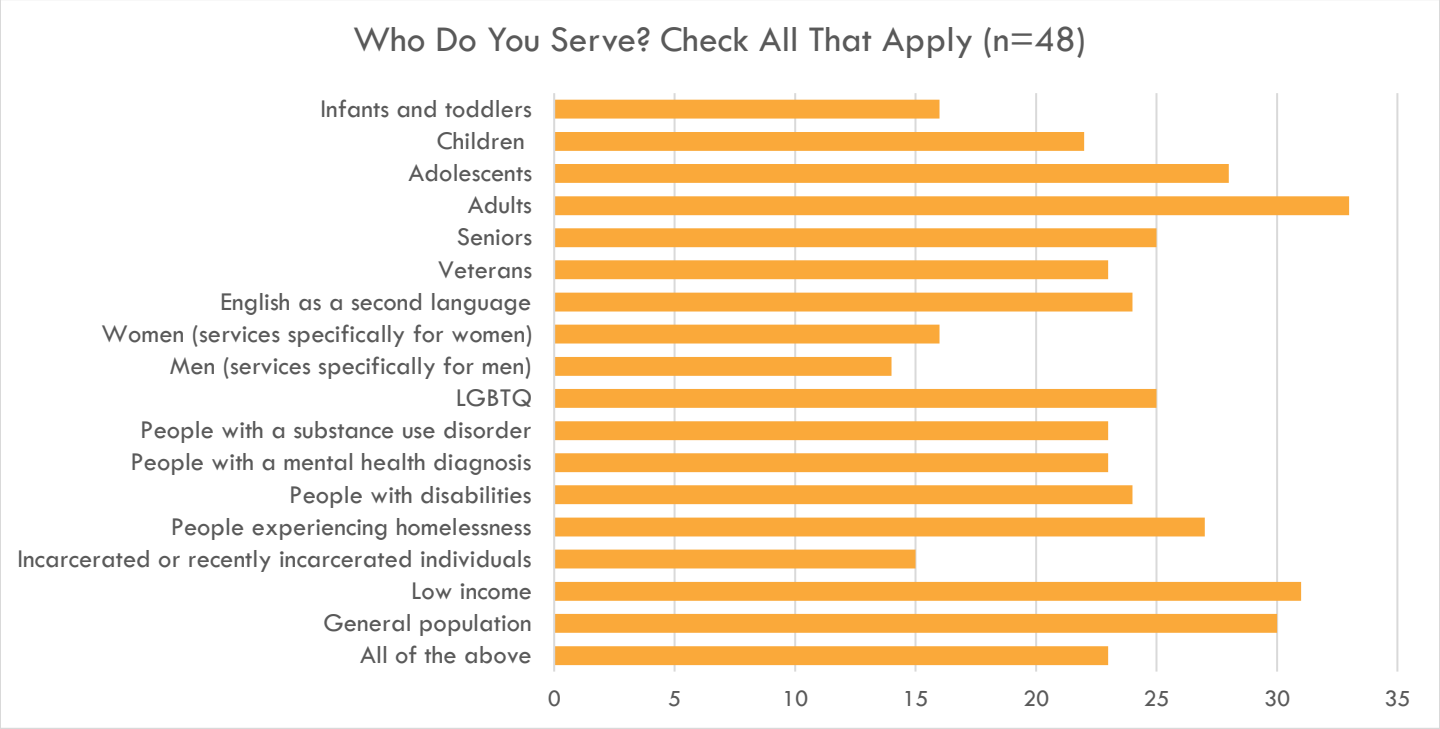
Very Little 1 2 3 4 5 Highly Impacted

Prevent Communicable diseases (e.g. sexually transmitted infections, hepatitis C, HIV, vaccine preventable disease, hospital acquired infections, etc.)

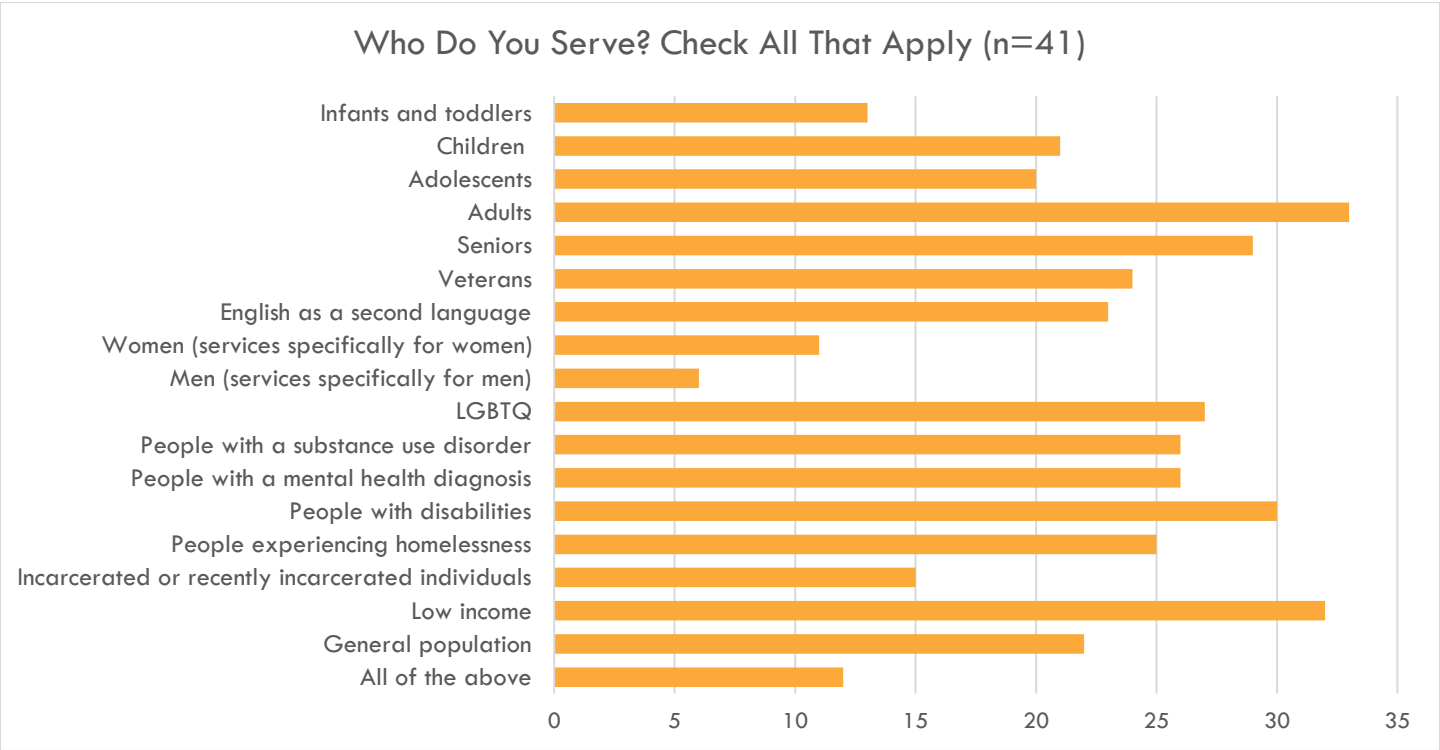
Very Little 1 2 3 4 5 Highly Impacted

APPENDIX L

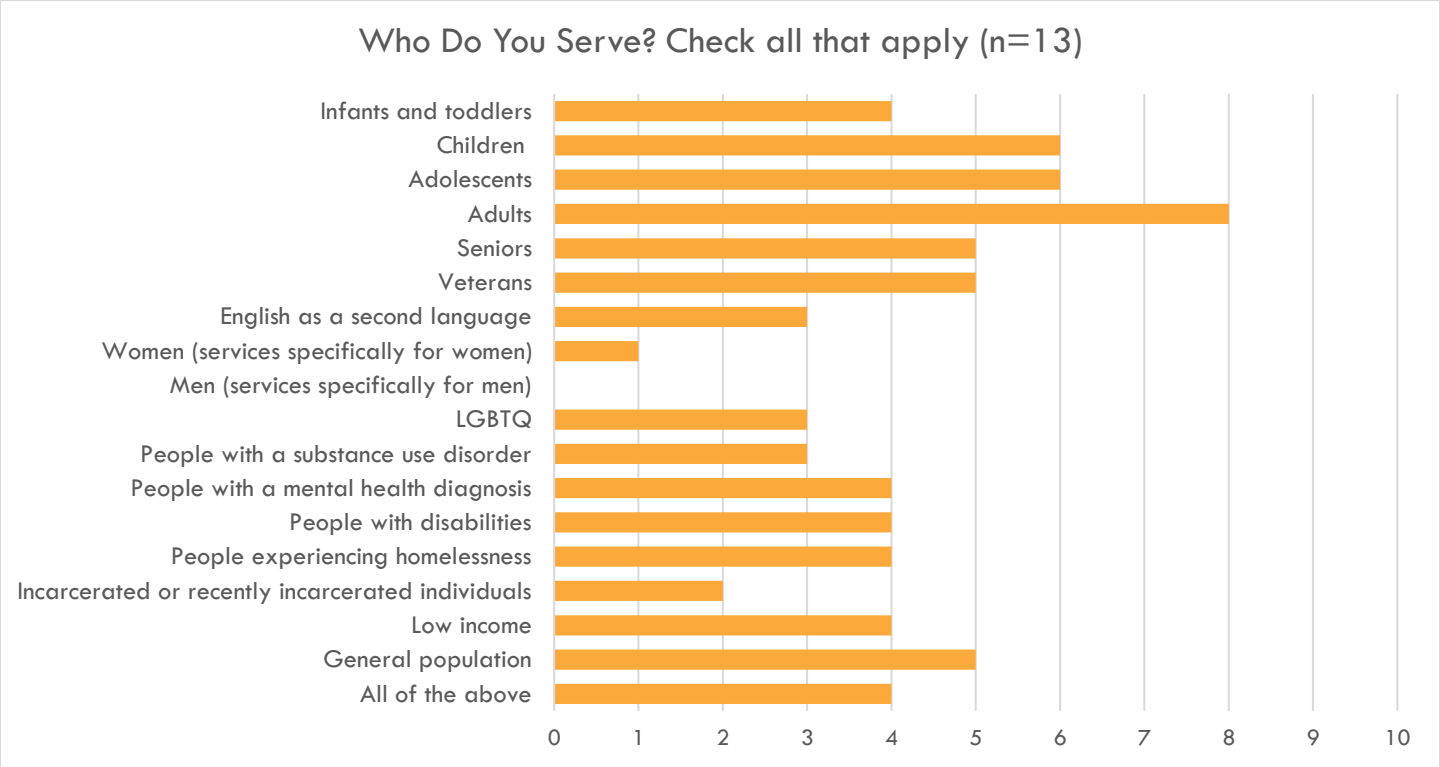
DUTCHESS COUNTY



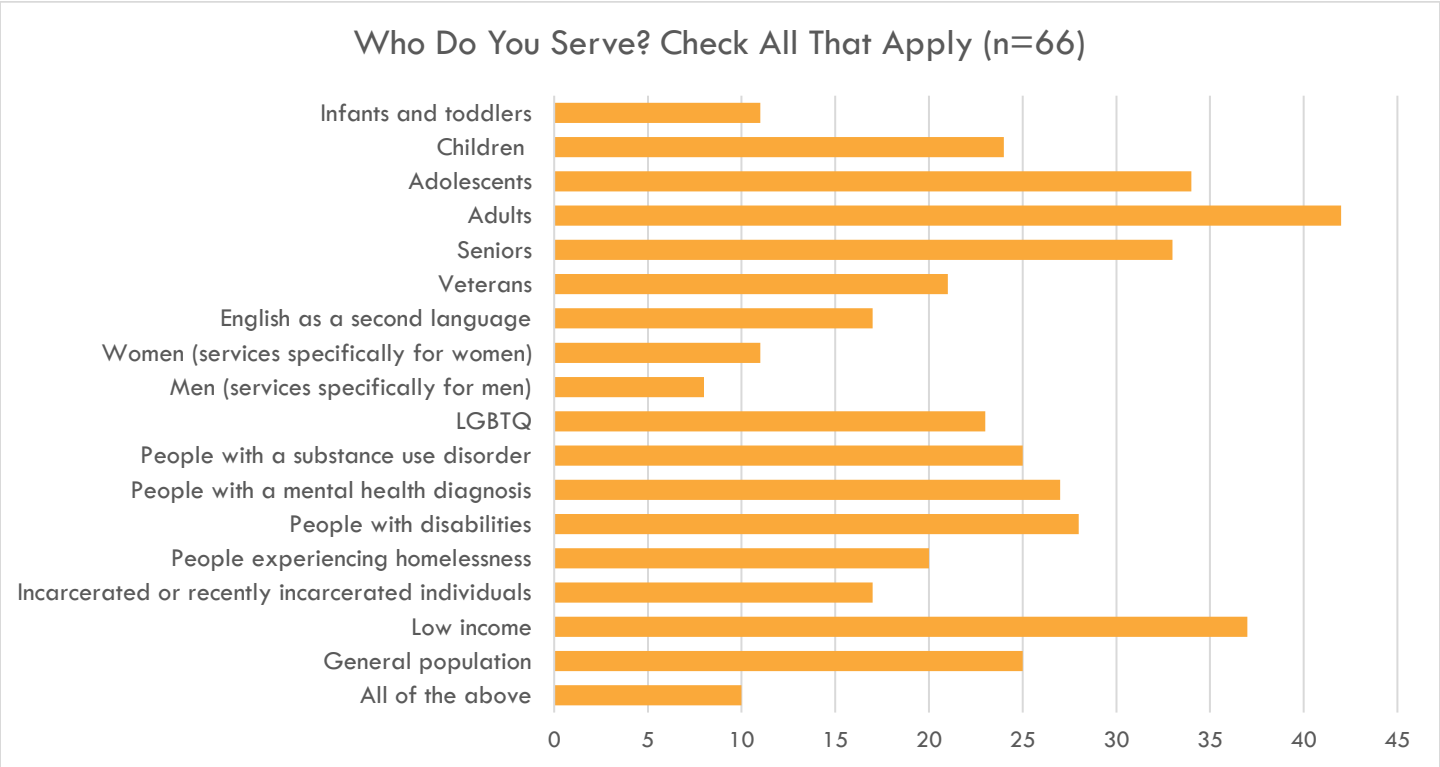
ORANGE COUNTY



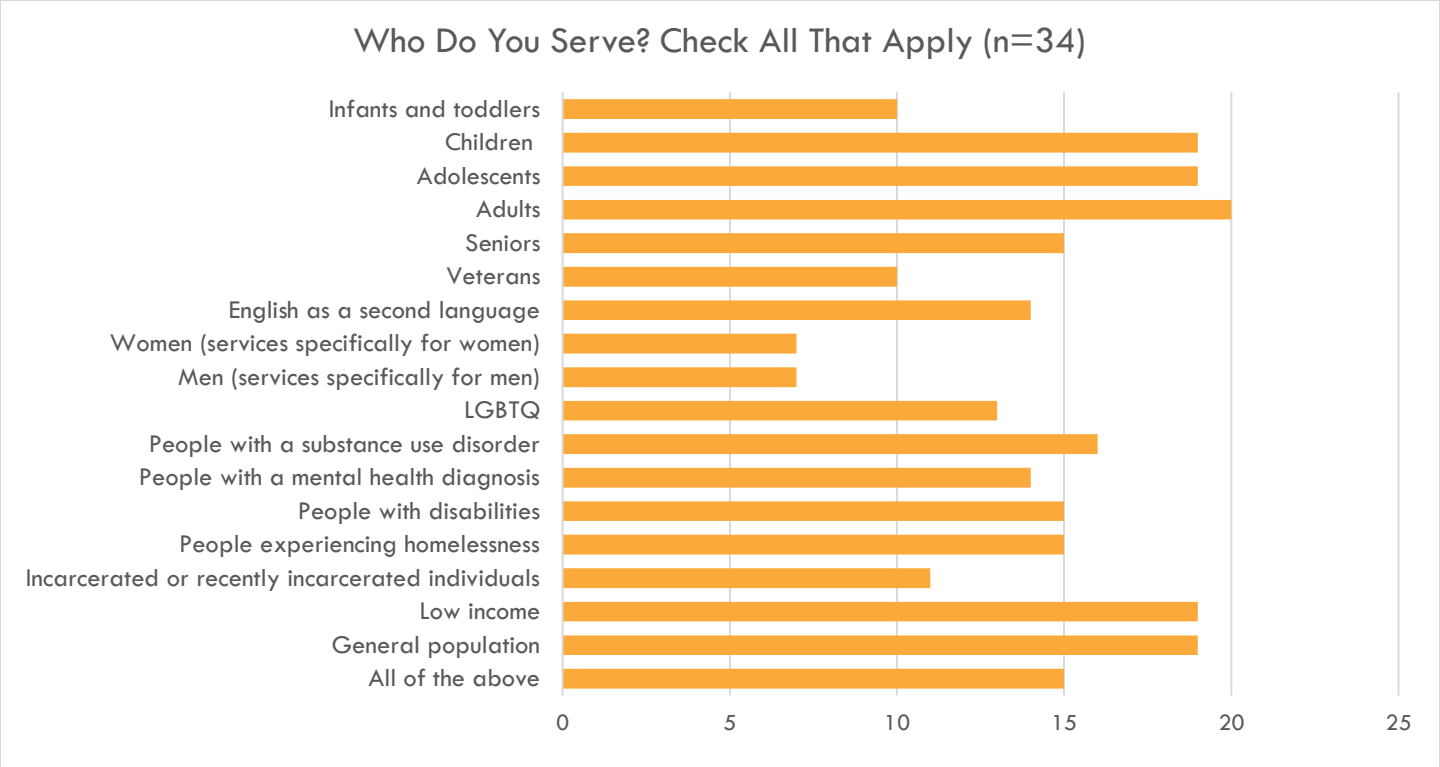
PUTNAM COUNTY



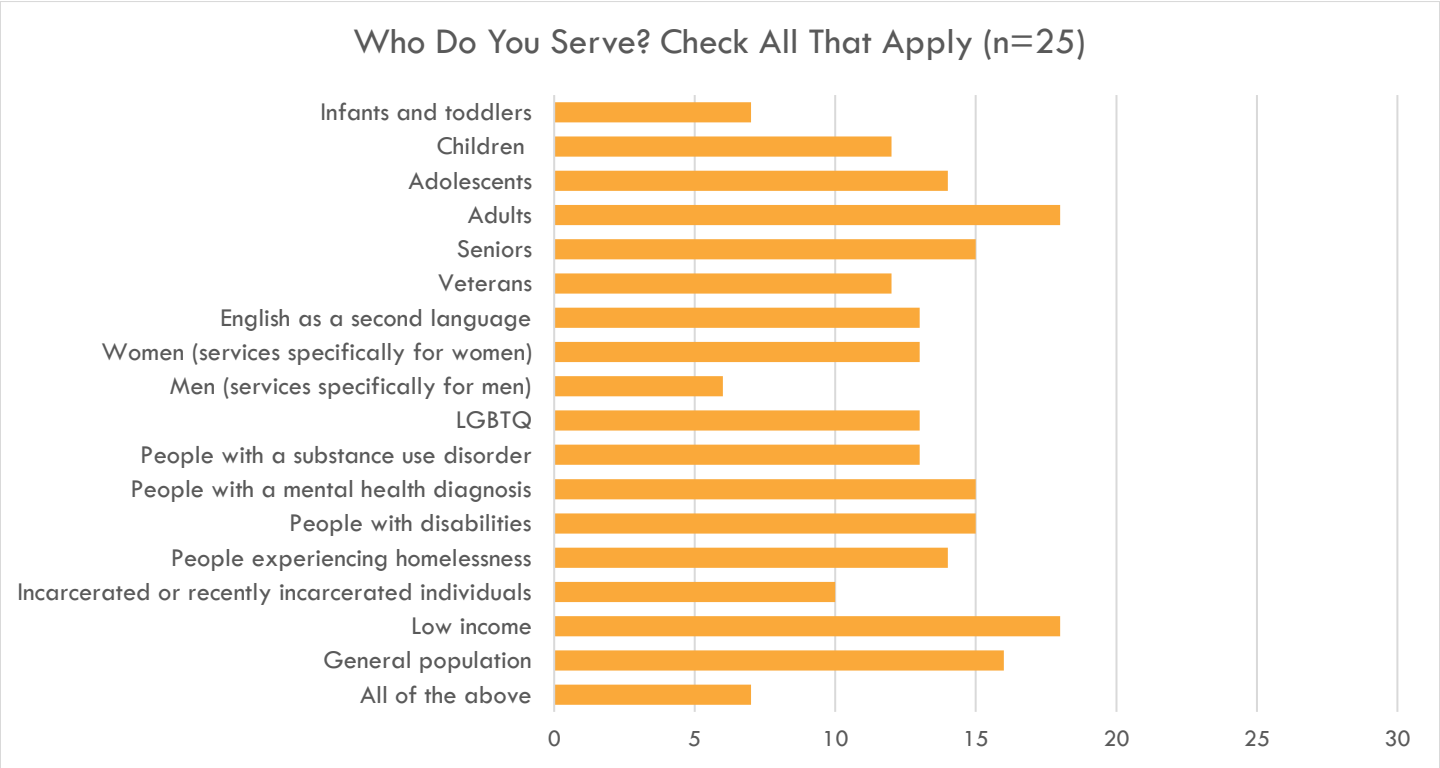
ROCKLAND COUNTY



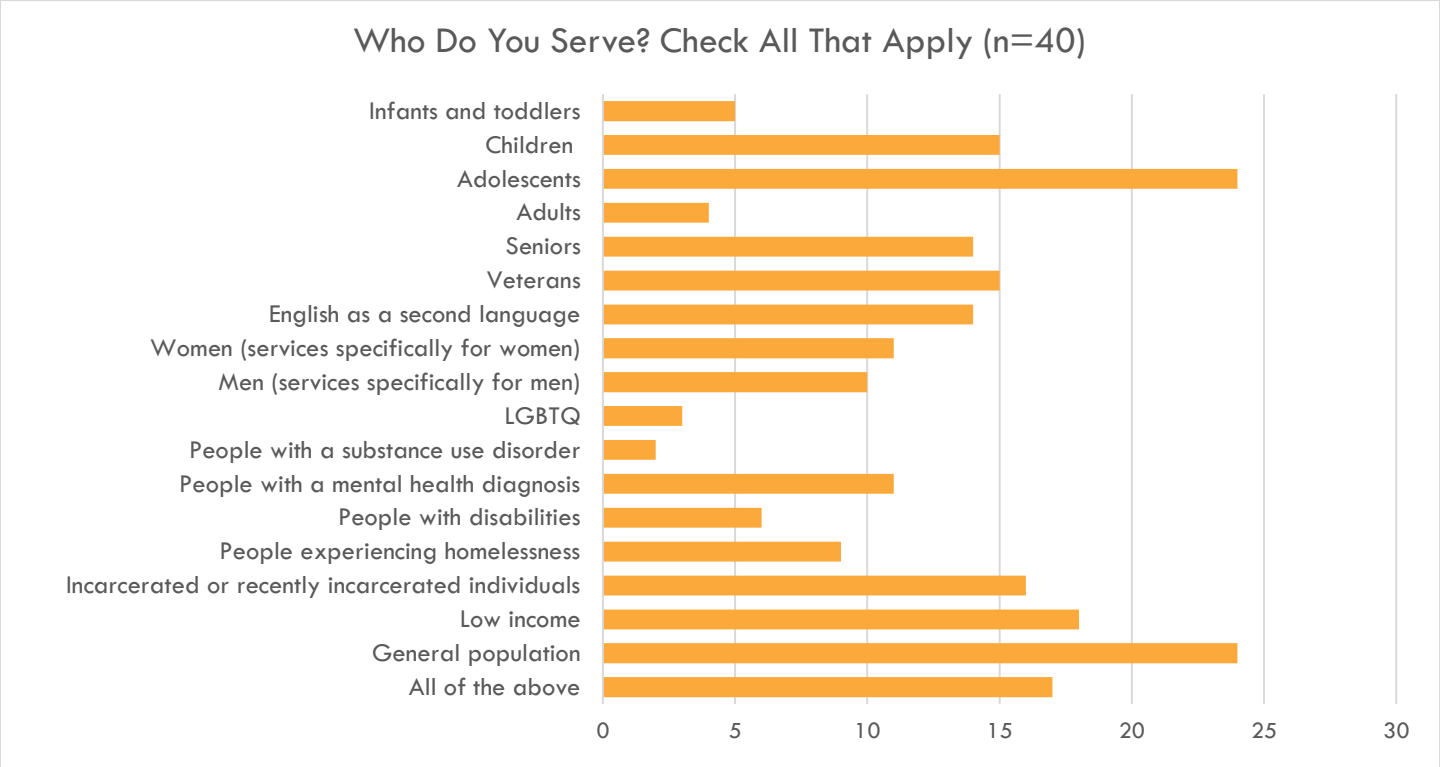
SULLIVAN COUNTY

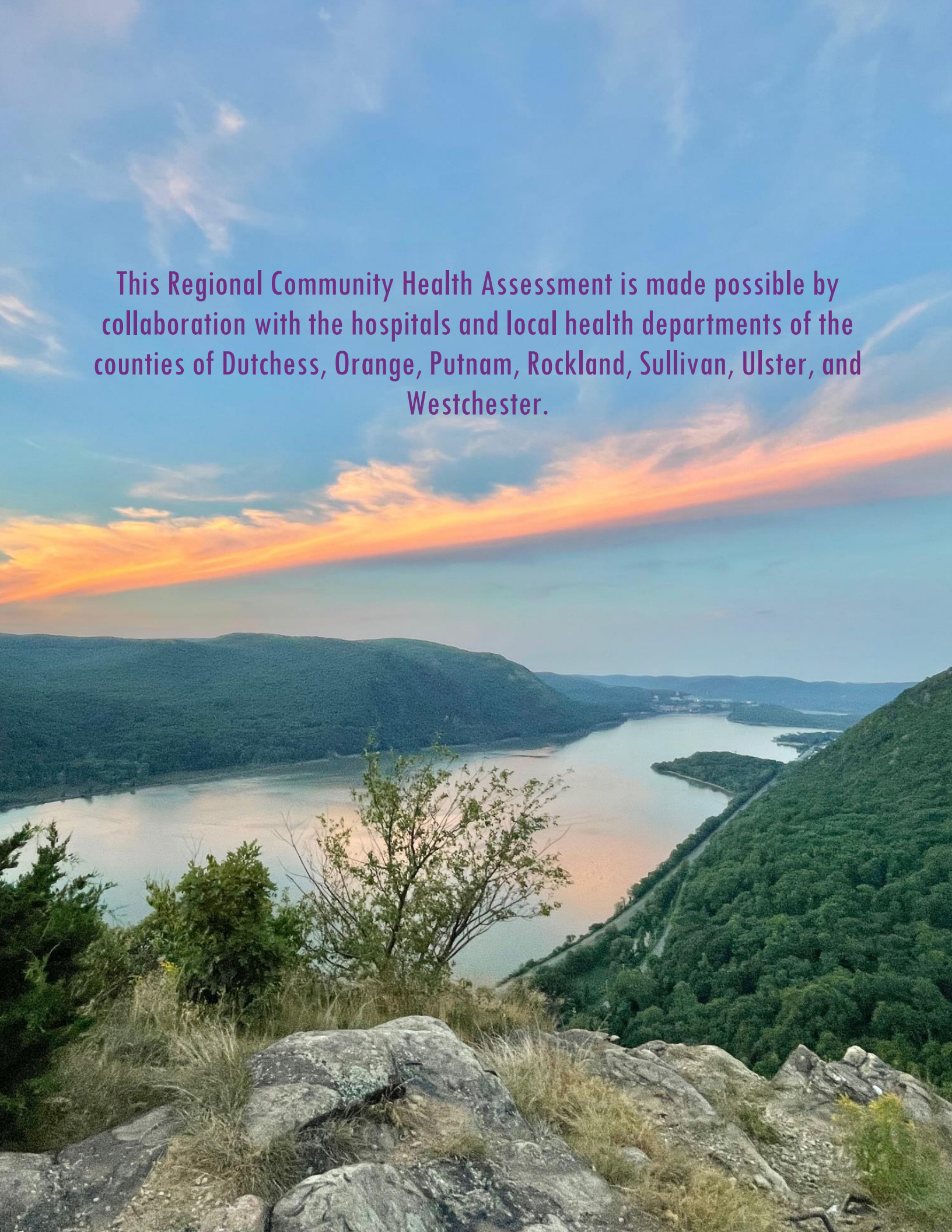


ULSTER COUNTY



WESTCHESTER COUNTY





This Regional Community Health Assessment is made possible by collaboration with the hospitals and local health departments of the counties of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester.