

Dutchess County
Community Health Assessment
2013-2017

Dutchess County Department of Health
Dutchess County, NY

PLEASE NOTE:

The *Dutchess County Community Health Improvement Plan 2013-2017*, which contains the goals, objectives and implementation plans for the four health priorities identified for the County, can be found in a separate document on the Dutchess County Department of Health website

Table of Contents

COMMUNITY HEALTH ASSESSMENT.....	8
SECTION ONE: POPULATION AT RISK.....	8
A. DEMOGRAPHICS AND HEALTH STATUS INFORMATION.....	8
1. Demographics and Economics.....	8
a. Population Characteristics.....	8
i. Current Population by Age, Sex, Race, and Ethnicity.....	10
ii. Population Growth.....	11
b. Other Socioeconomic Characteristics.....	15
i. Education, Language, Veteran Status and Disabilities.....	15
ii. Housing, Employment, Income and Poverty.....	17
iii. Homelessness.....	19
iv. Mapping Vulnerable Populations.....	22
Older Adults.....	22
Poverty.....	22
2. Maternal and Child Health.....	25
a. Overall Pregnancy and Fertility Trends.....	25
b. Risk Factors.....	28
i. Teen Pregnancy.....	29
City of Poughkeepsie.....	31
Teen Mothers who Have More than One Pregnancy Resulting in a Live Birth.....	32
ii. Out of Wedlock Births.....	33
iii. Unintended Pregnancies.....	34
iv. Medicaid and Self Pay Births.....	36
v. Behavioral Risk Factors.....	37
Smoking.....	37
Obesity.....	39
c. Maternal and Fetal Outcomes.....	40
i. Morbidity.....	40

Low Birthweight Births	40
Premature Births	41
Congenital Anomalies.....	42
ii. Mortality.....	42
d. Prevention.....	44
i. Preconception Care and Prenatal Care	44
ii. Breastfeeding.....	46
iii. Oral Health.....	47
iv. Screening for Syphilis and HIV.....	48
v. Immunization.....	48
3. Chronic Diseases	49
a. Leading Causes of Death and Premature Mortality	49
b. Cardiovascular Diseases.....	52
i. Coronary Heart Disease (Coronary Artery Disease).....	53
ii. Congestive Heart Failure	55
iii. Cerebrovascular Disease (Stroke).....	57
iv. Hypertension (High Blood Pressure)	59
c. Cancer	61
i. Cancer Incidence Trends	61
Males.....	61
Females.....	62
ii. Cancer Mortality Trends.....	63
iii. Early Detection	65
d. Respiratory Diseases.....	68
i. Chronic Lower Respiratory Diseases in Adults.....	69
ii. Asthma in Children	72
e. Diabetes	73
f. Chronic Disease Risk Factors and Prevention.....	76
i. Tobacco.....	76
ii. Overweight and Obese Weight Status	78

iii.	Nutrition and Physical Activity	82
iv.	Routine Preventive Care and Health Screening	84
4.	Communicable Diseases	86
a.	Sexually Transmitted Diseases.....	86
i.	Chlamydia	87
ii.	Gonorrhea	90
iii.	Syphilis	92
iv.	Special Populations – Women and Children	94
v.	HIV and AIDS.....	97
vi.	Genital Human Papillomavirus (HPV).....	101
b.	Other Communicable Diseases	102
i.	Tuberculosis.....	102
ii.	Hepatitis.....	102
iii.	Pertussis.....	103
iv.	Measles, Mumps, Rubella	103
v.	Influenza and Pneumonia.....	103
c.	Prevention and Vaccines.....	105
i.	Influenza and Pneumonia.....	106
ii.	Childhood Immunization	106
iii.	HPV Vaccine.....	107
5.	Environmental Health and Safety	112
a.	Land Protection and Transportation Planning.....	112
i.	Land Protection	112
ii.	Transportation Planning.....	113
iii.	Use of Parks and Trails.....	116
b.	Water Quality.....	117
i.	Public Water Supplies.....	117
ii.	Private Wells.....	119
c.	Air Quality	120
i.	Air Quality Index	120

ii.	Trends by Pollutant	121
	Ozone.....	121
	Particulate Matter	122
	Sulfur Dioxide	123
d.	Lead Poisoning and Other Poisoning Prevention	124
i.	Childhood Lead Poisoning	124
e.	Food Safety	130
i.	Botulism.....	130
ii.	Campylobacteriosis	130
iii.	Cryptosporidiosis.....	131
iv.	Escherichia coli (E. Coli O157:H7).....	131
v.	Giardiasis	132
vi.	Listeriosis	133
vii.	Salmonellosis	133
viii.	Shigellosis	134
f.	Animal and Insect-borne Diseases.....	135
i.	Rabies	135
ii.	Lyme Disease and Other Tick-borne Diseases.....	137
	Lyme Disease	137
	Anaplasmosis and Ehrlichiosis.....	139
	Babesiosis	141
	Powassan Virus.....	141
iii.	West Nile Virus	142
g.	Injuries and Threats to Safety	143
i.	Unintentional Injuries.....	143
	Motor Vehicle Accidents	143
	Falls.....	145
ii.	Intentional Injuries	147
	Homicide and Assault.....	147
	Domestic Violence, Child Abuse and Neglect.....	148

h.	Community Environmental & Safety Concerns	149
i.	Environmental Concerns	149
ii.	Safety Concerns	150
6.	Mental Health and Substance Abuse.....	151
a.	Mental Health	151
i.	Self-Reported Poor Mental Health	151
ii.	New York State Patient Characteristic Survey.....	152
iii.	Suicide and Self-Inflicted Injury.....	154
iv.	Emergency Department Care and Hospitalization for Mental Health Disorders.....	155
	Anxiety Disorders	155
	Mood Disorders.....	157
	Schizophrenia and Other Psychotic Disorders	158
	Substance Abuse	160
i.	Alcohol Abuse	160
ii.	Medication and Drugs	161
B.	ACCESS TO CARE	165
1.	Availability and Accessibility of Healthcare Providers and Services.....	165
a.	Healthcare Providers.....	165
i.	Hospitals	165
ii.	Primary Care Health Centers	169
iii.	Providers.....	170
iv.	Health Professional Shortage Areas and Medically Underserved Population	171
v.	E911-EMS.....	171
vi.	Pharmacies	172
vii.	Mental Health Services.....	172
b.	Medical Transportation	174
c.	Health Insurance	174
d.	Laboratories	179
2.	Barriers and Affected Sub-Populations.....	180

a. Financial Barriers.....	180
b. Structural Barriers.....	182
c. Personal Barriers – Immigrant Population	183
SECTION 2: THE LOCAL HEALTH UNIT CAPACITY.....	184
DCDOH – The Organization.....	185
Workforce	186
Technical Capacity to perform Community Assessment.....	187
Laws and Regulations.....	188
Media Messages	189
Strategic Planning	190
CHA Appendix 1 - List of Acronyms and Abbreviations	192
CHA Appendix 2 - Data Notes.....	193

COMMUNITY HEALTH ASSESSMENT

SECTION ONE: POPULATION AT RISK

A. DEMOGRAPHICS AND HEALTH STATUS INFORMATION

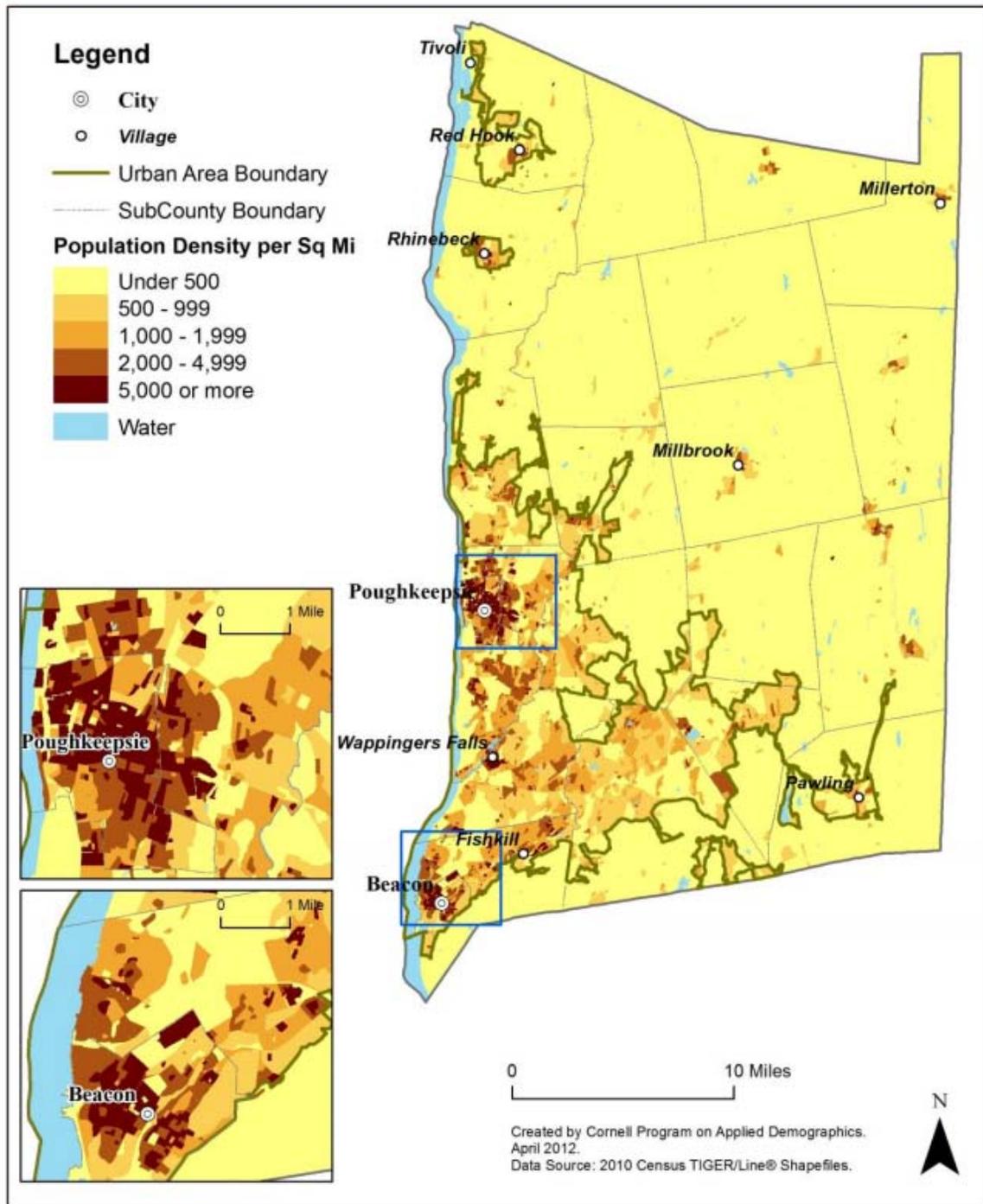
1. Demographics and Economics

a. Population Characteristics

Dutchess County is in the heart of the Hudson Valley, midway between New York City and New York State's capital, Albany. The western border includes 30 miles of Hudson River shoreline with Connecticut forming the eastern border. Dutchess County is made up of 30 municipalities, consisting of 20 towns, 8 villages, and two cities, Poughkeepsie (the county seat) and the city of Beacon. Dutchess County has 13 public school districts and is also home to five colleges/universities. As shown in Map 1, 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.

Map 1

Dutchess County, NY 2010 Population Density per Block



Data Source: Cornell Program on Applied Demographics, 2010 U.S. Census

i. Current Population by Age, Sex, Race, and Ethnicity

Every 10 years since 1790, Congress has authorized funds to conduct a national census of the U.S. population, as required by the U.S. Constitution. The most recent decennial Census occurred in 2010. Annual population estimates by age, sex, race, and Hispanic ethnicity are generated between decennial Census years by the U.S. Census Bureau's Population Estimates program. In addition, the American Community Survey (ACS) is a nationwide, continuous survey conducted by the U.S. Census Bureau designed to provide communities with reliable and timely demographic, housing, social, and economic characteristics of the U.S. population every year. The annual ACS sample is smaller than that of the Census 2010, based on approximately three million versus 18 million addresses. As a result, population and housing data are combined from multiple years to produce reliable numbers for small geographical areas.

Current estimates of the total population and the proportion of the population by age, sex, race, and ethnicity are summarized in Table 1 and compared with New York State (NYS) and the United States (U.S.). Dutchess County has a slightly higher median age of 41.0 years compared with NYS (38.1 years) and the U.S. (37.4 years). Correspondingly, the proportion of children under 5 years of age is lower in Dutchess County (5.0%) than the state (6.0%) or the U.S. (6.4%), while the proportion of adults 65 years of age and older is slightly higher. Dutchess County overall is less racially diverse than either the state or the nation, with Non-Hispanic White residents making up 73.8% of the population as opposed to the state as a whole (57.6% Non-Hispanic White), or the U.S. (63.0% Non-Hispanic White). Nonetheless, the cities of Poughkeepsie and Beacon are significantly more diverse than other Dutchess municipalities. Approximately 41.3% of Poughkeepsie City residents identify as Non-Hispanic Whites, 33.9% as Non-Hispanic Black, 20.2% as Hispanic¹, and 4.5% as Other or Two or More Races, Non-Hispanic (*American Community Survey 2007-2011*). Similarly, 57.1% of Beacon residents identify as Non-Hispanic White, 18.0% as Non-Hispanic Black, 22.4% as Hispanic, and 2.5% as Other or Two or More Races, Non-Hispanic.

¹ Throughout this report, the category Hispanic includes Hispanic or Latino populations of any race.

Table 1
2012 Population Estimates by Sex, Age, Race and Ethnicity

Demographic Characteristics	Dutchess County	New York State	U.S.
Total population	297,322	19,570,261	313,914,040
Sex:			
Females	50.2%	51.5%	50.8%
Males	49.8%	48.5%	49.2%
Age:			
Children under 5 years	5.0%	6.0%	6.4%
Adults 18 years and older	78.7%	80.8%	76.5%
Adults 65 years and older	14.5%	14.1%	13.7%
Median age (years)	41.0	38.1	37.4
Race and Ethnicity:			
White Alone, Non-Hispanic	73.8%	57.6%	63.0%
Black Alone, Non-Hispanic	9.5%	14.6%	12.3%
Asian Alone, Non-Hispanic	3.7%	7.8%	5.0%
Other or Two or More Races, Non-Hispanic	2.0%	1.9%	2.8%
Hispanic	11.0%	18.2%	16.9%

***Data Source:** U.S. Census Bureau Population Estimates Program: July 1, 2012*

ii. Population Growth

Between 2000 and 2010, the population of Dutchess County grew from 280,150 to 297,488 (a 6.2% increase), making it the fifth fastest growing county in NYS, after Saratoga, Orange, Rockland, and Ontario Counties. Within Dutchess County, the towns of Rhinebeck, Pawling, Red Hook, North East, and Washington experienced the highest rates of population growth as a percent change from 2000, followed by the town of Wappinger, which had the largest amount of net growth. Pine Plains was the only town that experienced a decrease in population between 2000 and 2010 (Table 2).

Table 2
Change in Dutchess County Population by Municipality, 2000-2010

Geographic Area	2000 Population	2010 Population	% Change in Population 2000-2010	Net Population Change 2000-2010
Dutchess County	280,150	297,488	6.2%	17338
Beacon city *	14,810	15,541	4.9%	731
Poughkeepsie city	29,871	32,736	9.6%	2865
Amenia town	4,048	4,436	9.6%	388
Beekman town *	13,655	14,621	7.1%	966
Clinton town	4,010	4,312	7.5%	302
Dover town	8,565	8,699	1.6%	134
East Fishkill town	25,589	29,029	13.4%	3440
Fishkill town *	19,256	22,107	14.8%	2851
Hyde Park town	20,851	21,571	3.5%	720
La Grange town	14,928	15,730	5.4%	802
Milan town *	2,356	2,370	0.6%	14
North East town	2,077	3,031	45.9%	954
Pawling town	5,288	8,463	60.0%	3175
Pine Plains town	2,569	2,473	-3.7%	-96
Pleasant Valley town	9,066	9,672	6.7%	606
Poughkeepsie town	41,800	43,341	3.7%	1541
Red Hook town	7,440	11,319	52.1%	3879
Rhinebeck town	4,685	7,548	61.1%	2863
Stanford town	3,544	3,823	7.9%	279
Union Vale town	4,546	4,877	7.3%	331
Wappinger town	22,322	27,048	21.2%	4726
Washington town	3,313	4,741	43.1%	1428

Data Source: U.S. Census Bureau, Decennial Census 2000 and 2010

**Note: Table 2 reflects revised Census 2000 counts for Beacon city, Beekman town, Fishkill town, and Milan town. <http://www.census.gov/prod/cen2000/notes/cqr-ny.pdf>*

Dutchess County’s growth from 2000 to 2010 did not occur equally across the population. There was a decline in the number of children under the age of 10 and adults between the ages of 30 and 39 (Table 3). The highest rates of growth generally occurred in the oldest age groups, which is a pattern seen throughout the U.S. as life expectancy has increased over time. There was a small decline in the Non-Hispanic White population, some growth in the Non-Hispanic Black population, and very significant growth in the Hispanic population as well as Non-Hispanics of Other or Multiple Races (Table 4). By the same token, the foreign-born population grew by an estimated 50% from 2000-2010 (Table 5). The largest net growth was among Caribbean-born residents.

Table 3
Change in Dutchess County Population by Age and Sex, 2000-2010

Group	2000 Population	2010 Population	% Change 2000 - 2010	Net Change 2000 - 2010
Males	140,127	148,112	5.7%	7,985
0 to 9 years	19,422	16,711	-14.0%	-2,711
10 to 19 years	21,347	22,682	6.3%	1,335
20 to 29 years	16,936	19,443	14.8%	2,507
30 to 39 years	23,146	16,881	-27.1%	-6,265
40 to 49 years	23,296	23,924	2.7%	628
50 to 59 years	16,506	22,673	37.4%	6,167
60 to 69 years	10,106	13,978	38.3%	3,872
70 to 79 years	6,580	7,741	17.6%	1,161
80 years and over	2,788	4,079	46.3%	1,291
Females	140,023	149,376	6.7%	9,353
0 to 9 years	18,451	16,178	-12.3%	-2,273
10 to 19 years	20,110	21,412	6.5%	1,302
20 to 29 years	15,499	18,086	16.7%	2,587
30 to 39 years	21,882	16,420	-25.0%	-5,462
40 to 49 years	22,401	23,747	6.0%	1,346
50 to 59 years	16,494	22,269	35.0%	5,775
60 to 69 years	10,657	15,009	40.8%	4,352
70 to 79 years	8,716	9,055	3.9%	339
80 years and over	5,813	7,200	23.9%	1,387

Data Source: U.S. Census Bureau, Decennial Census 2000 and 2010

Table 4
Change in Dutchess County Population by Race and Ethnicity, 2000-2010

Group	2000 Population	2010 Population	% Change 2000 - 2010	Net Change 2000 - 2010
Non-Hispanic Whites	224,913	221,812	-1.4%	-3,101
Non-Hispanic Blacks	25,059	27,395	9.3%	2,336
Non-Hispanics of Other or Multiple Races	12,118	19,400	60.1%	7,282
Hispanics	18,060	28,881	59.9%	10,821

Data Source: U.S. Census Bureau, Decennial Census 2000 and 2010

Table 5
Place of Birth, Dutchess County 2000-2010

Place of Birth	2000 Population	2010 Population	% Change 2000 - 2010	Net Change 2000 - 2010
United States	256,550	262,162	2.2%	5,612
Outside the U.S.	23,600	35,415	50.1%	11,815
Europe	8,702	7,218	-20.1%	-1,484
Asia	5,730	9,097	58.8%	3,367
Mexico	1,685	3,351	98.9%	1,666
Other Central America	508	899	77.0%	391
South America	1,894	2,698	42.4%	804
Caribbean	3,818	8,823	131.1%	5,005
All Other Regions	1,263	3,329	163.6%	2,066

Data Source: U.S. Census Bureau, 2000 SF3 Sample, ACS 2010 1Yr Estimate

Beginning in 2012, however, Dutchess County was estimated to have negative population growth for the first time in many years (Table 6). From 2011-2012 substantial domestic migration out of Dutchess County was reported alongside steady declines in births from 2007 to 2012.

Table 6
Components of Dutchess County Population Change between 2007 and 2012

Period	Total Population Change*	Natural Increase			Net Migration		
		Total	Births	Deaths	Total	Net International Migration**	Net Domestic Migration
2007-2008	654	970	3,209	2,239	-356	537	-893
2008-2009	1,062	867	3,146	2,279	233	470	-237
2010-2011	260	569	2,879	2,310	-300	439	-739
2011-2012	-877	444	2,817	2,373	-1,332	683	-2,015

Data Source: U.S. Census Bureau, Population Division

**Total population change includes a residual which represents the change in population that cannot be attributed to any specific demographic component.*

***Net international migration includes international migration of both native and foreign-born populations.*

b. Other Socioeconomic Characteristics

i. Education, Language, Veteran Status and Disabilities

In 2009-2011 almost 90% of adults in Dutchess County held at least a high school degree, which is slightly higher than the state and national averages (Table 7), and Dutchess County ranked 10th in the state for the proportion of adults 25 years and over with a Bachelor’s degree (ACS 2009-2011). However, there continued to be racial and ethnic disparities in the attainment of high school diplomas and 4-year college degrees (Figure 1).

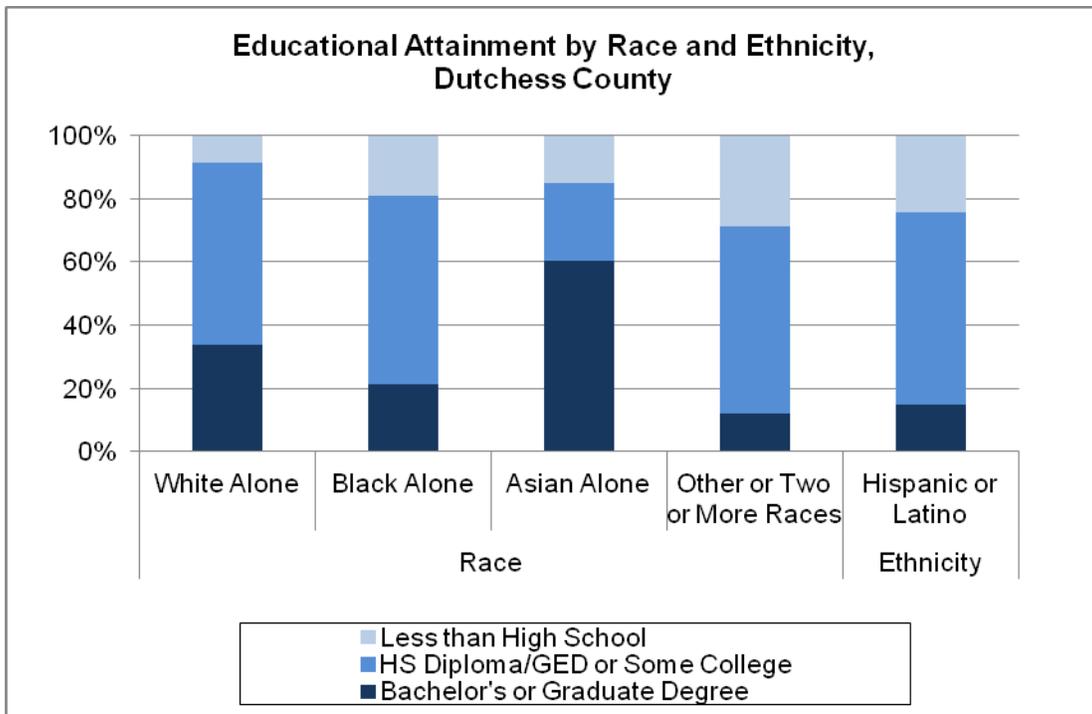
Approximately 15.7% of individuals spoke a language at home other than English (Table 7). Veterans made up 8.2% of the population, which is closer to the national average (9.3%) than the state average (6.3%). The proportion of residents with a disability (12.7%) was slightly higher than the state average (10.8%) and similar to the national average (12.0%).

Table 7
Education, Language, Veteran Status, and Disability Status, 2009-2011

Characteristic	Dutchess County	NYS	U.S.
High school graduate or higher (25 yrs and older)	89.2%	84.8%	85.6%
Bachelor's degree or higher (25 yrs and older)	32.2%	32.6%	28.2%
Individuals who speak a language other than English at home (5 yrs and older)	15.7%	29.8%	20.6%
Veteran status (18 yrs and older)	8.2%	6.3%	9.3%
Disability status (non-institutionalized persons)	12.7%	10.8%	12.0%

Data Source: U.S. Census Bureau, ACS 2009-2011 Three Year Averages

Figure 1



Data Source: U.S. Census Bureau, ACS 2009-2011 Three Year Average

ii. Housing, Employment, Income and Poverty

The average household and family sizes in Dutchess County in 2009-2011 were similar to the NYS and U.S. averages (Table 8). Most homes in Dutchess County were owned rather than rented, and there were fewer vacant units than the overall statewide and national averages (Table 8). While home prices in Dutchess County continued a downward decline from 2008 through 2012, which appeared to slow towards the end of 2012 (www.zillow.com), the median home value from 2009-2011 (\$298,100) was nonetheless \$4000 higher than the NYS median home value, and \$118,600 more than the U.S. median home value (Table 8).

Dutchess County's median household and family incomes were over \$10,000 higher than the corresponding state and national figures in 2009-2011, and individuals and families in Dutchess County were less likely to live below the federal poverty guideline than other New Yorkers and Americans as a whole (Table 8). The proportion of adults in the labor force was similar to the rest of the state and the U.S. (see below for unemployment trends). Average travel times to work in Dutchess (30.1 minutes) were comparable to the NYS average, which tends to be about 5 minutes longer than the U.S. average. Seventy-six percent of employed Dutchess County residents drove to work alone, which was higher than the NYS average but equivalent to the rest of the U.S.

The national economic downturn after 2008 resulted in a loss of jobs in Dutchess County as it did elsewhere in NYS, with a large jump in unemployment between 2008 and 2009 (Table 9). Since that time the unemployment rate remained largely unchanged. Nationally there was a decrease in unemployment in 2012, but this was not the case in NYS and Dutchess, although the local unemployment rates were still below the national average. Educational Services/Health Care/Social Assistance employed 30.4% of the working population living in Dutchess County from 2009-2011, followed by Retail Trade (11.7%), and Professional, Scientific, Management, Administrative, and Waste Management services (10.0%) (*U.S. Census Bureau, ACS 2009-2011*).

Table 8
Socioeconomic Characteristics of Dutchess County, 2009-2011

Income and Poverty	Dutchess County	NYS	U.S.
Median household income	\$71,124	\$55,927	\$51,484
Median family income	\$86,114	\$68,161	\$62,735
Per capita income	\$32,345	\$31,206	\$27,158
Families below poverty level	6.0%	11.5%	11.1%
Individuals below poverty level	9.1%	15.1%	15.2%
Employment (16 yrs and older)			
Individuals in labor force	64.4%	63.6%	64.5%
Mean travel time to work in minutes	30.9	31.4	25.3
Commute by car, driving alone	76.4%	54.1%	76.4%
Household Characteristics			
Average household size (# of people)	2.59	2.60	2.62
Average family size (# of people)	3.13	3.26	3.21
Owner-occupied units	69.5%	54.3%	65.4%
Vacant units	9.2%	11.0%	12.8%
Median value of owner-occupied homes	\$298,100	\$294,000	\$179,500
Median gross rent of units paying rent	\$1,088	\$1,047	\$878

Data Source: U.S. Census Bureau, ACS 2009-2011 Three Year Averages

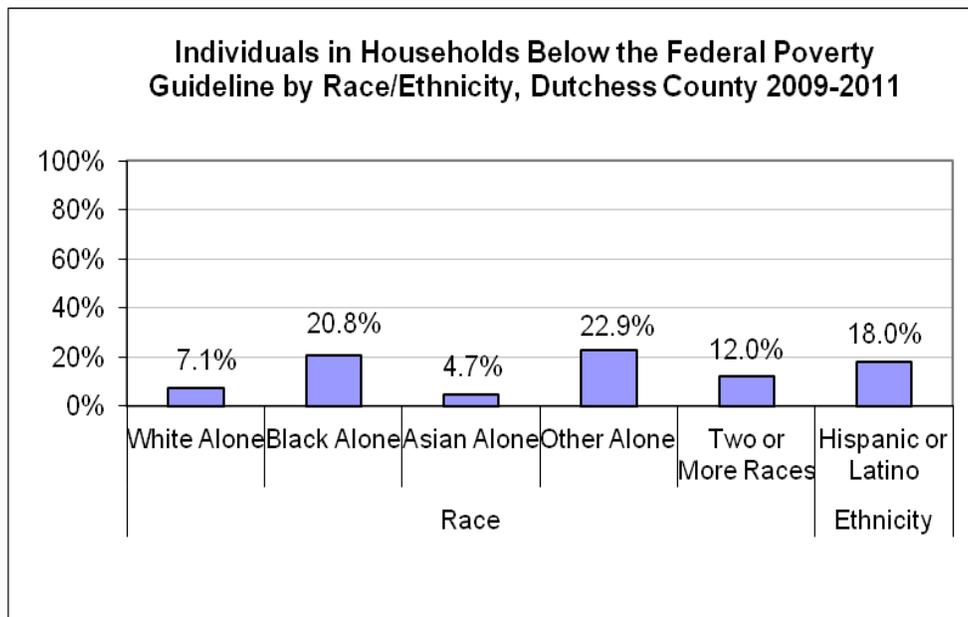
Table 9
Average Annual Unemployment Rate (Not Seasonally Adjusted), 2008-2012

Year	Dutchess County	NYS	U.S.
2008	5.1%	5.4%	5.8%
2009	7.8%	8.4%	9.3%
2010	7.8%	8.6%	9.6%
2011	7.6%	8.3%	8.9%
2012	7.9%	8.5%	8.1%

Data Source: U.S. and NYS Departments of Labor

From 2009-2011, an average of 9.1% of individuals and 6.0% of families in Dutchess County lived in households that were below the federal poverty guideline in the previous 12 months, based on income and household size. There were significant disparities by race and ethnicity, with 18.0% of Hispanics, 20.8% of Blacks, and 22.9% of people of other races living below the poverty level (Figure 2). Asians and Whites were approximately three to four times less likely than Blacks and those of other races to live below the poverty level.

Figure 2



Data Source: U.S. Census Bureau ACS 2009-2011

iii. Homelessness

The Dutchess County Department of Planning estimated there are approximately 2,059 sheltered and 80 unsheltered individuals experiencing homelessness on a given night in Dutchess County, based on the Dutchess County Housing Consortium’s 2012 Point-in-Time Count and the 2011-2012 Annual Homeless Assessment Report (AHAR) (2013-2017 Consolidated Plan, Dutchess County Dept of Planning and Development). This represents nearly a 50% increase from the 2008-2010 Consolidated Plan’s estimate of 1,500 homeless people in Dutchess County. However, point-in-time estimates are conducted in a single day and limited geographic area, which may underestimate or overestimate the homeless population.

The Hudson Valley Homeless Management Information System (HMIS) database identified 1,994 clients accessing shelters in 2012², which is indicative of a smaller increase in the sheltered homeless population since 2010 (Table 10). Forty-two percent of homeless people living in shelters were between the ages of 31 and 50, and another 28% were between 18 and 30 years of age (Table 11). Males made up 71% of the adult sheltered population, and a disproportionate number of Black residents lived in shelters (43% of sheltered individuals compared to 10% of the general population).

Table 10
Estimated Annual Sheltered Homeless Counts by Type of Shelter, Dutchess County

Time Period	Emergency Shelters	Transitional Housing	Permanent Supportive Housing	Total
10/1/2009 - 9/30/2010	1,275	259	199	1,733
10/1/2010 - 9/30/2011	1,250	293	226	1,769
10/1/2011 - 9/30/2012	1,462	319	213	1,994

Data Source: Homeless Management Information System (HMIS)

² HMIS provides estimates of homeless individuals and persons in families in Emergency Shelters and transitional housing programs that participate in HMIS, as well as those that do not participate in HMIS. The estimate is an “extrapolated count” and is based on the assumption that beds located in programs that do not participate in HMIS are occupied at the same rate as beds located in HMIS-participating programs. Data do not include persons served by victim service providers (e.g. domestic violence shelters), nor those living on the street, in motels/hotels, or staying in someone else’s home.

Table 11
Demographic Characteristics of Sheltered Homeless, Dutchess County

Characteristic	Percent
Gender by Age Group	
Adults	
Male	71%
Female	29%
Children	
Male	51%
Female	49%
Age	
0-12 years	2%
13-17 years	12%
18-30 years	28%
31-50 years	42%
51-61 years	13%
62 years and older	3%
Race	
White	50%
Black	43%
Other	6%
Ethnicity	
Hispanic	11%

Data Source: Homeless Management Information System (HMIS)

iv. Mapping Vulnerable Populations

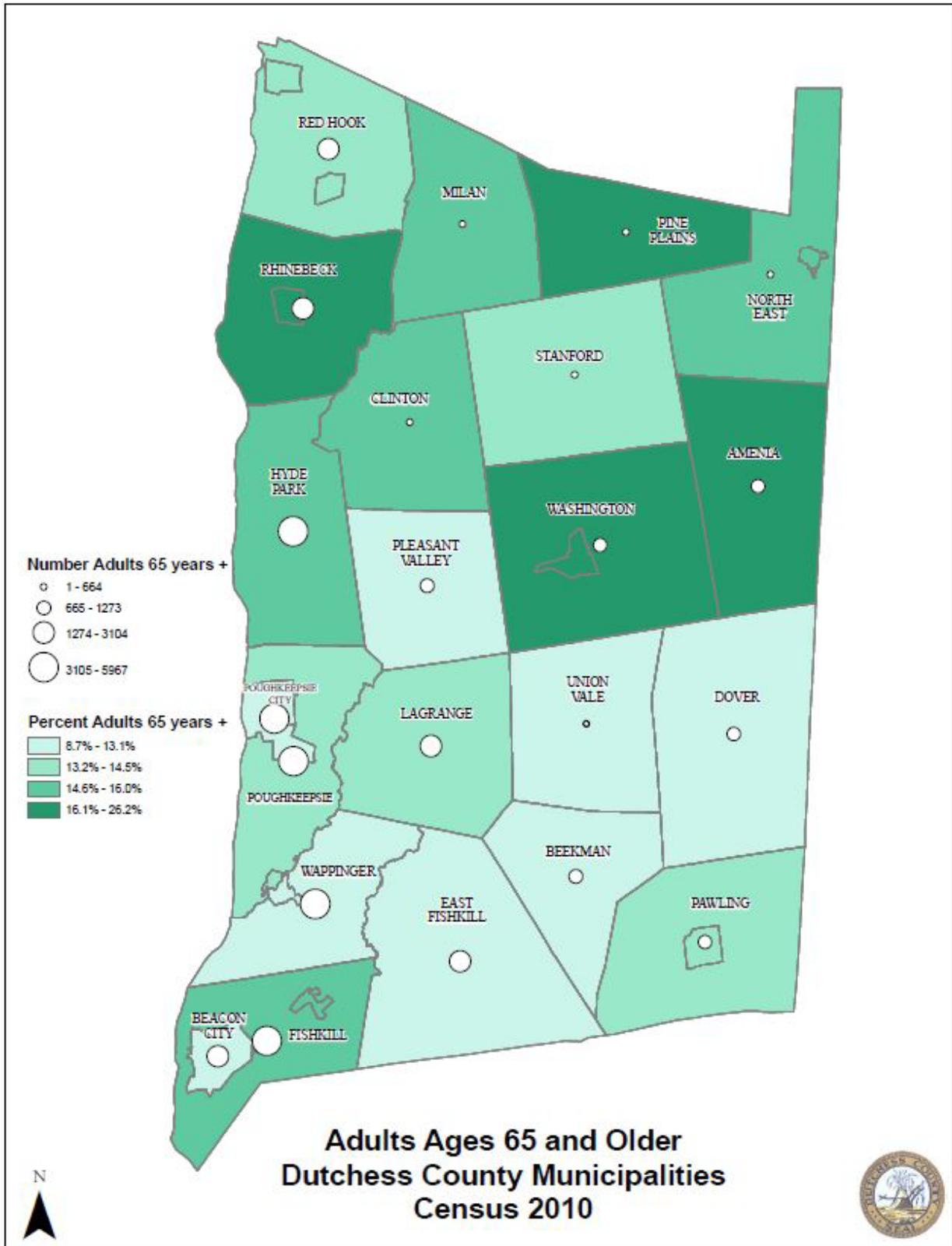
Older Adults

As life expectancy increases across the United States, the population of older adults is growing. As shown in Table 3, between 2000 and 2010 Dutchess County experienced the most growth in the number of 50-59 year olds, followed by 60-69 year olds. Older adults have higher rates of chronic disease and are more vulnerable to infectious diseases. Mobility challenges increase elderly adults' risk of injuries due to falls, as will be shown in this report. Knowing where there are growing communities of older adults is important for planning and mobilizing resources, such as in the event of a major storm or mass vaccination scenario. As shown in Map 2, the density of older adults (white circles) is greatest, of course, where population density is also greatest (see Map 1). However some of the least densely populated towns have the highest proportion of older adults, including Washington, Amenia, Pine Plains, and Rhinebeck.

Poverty

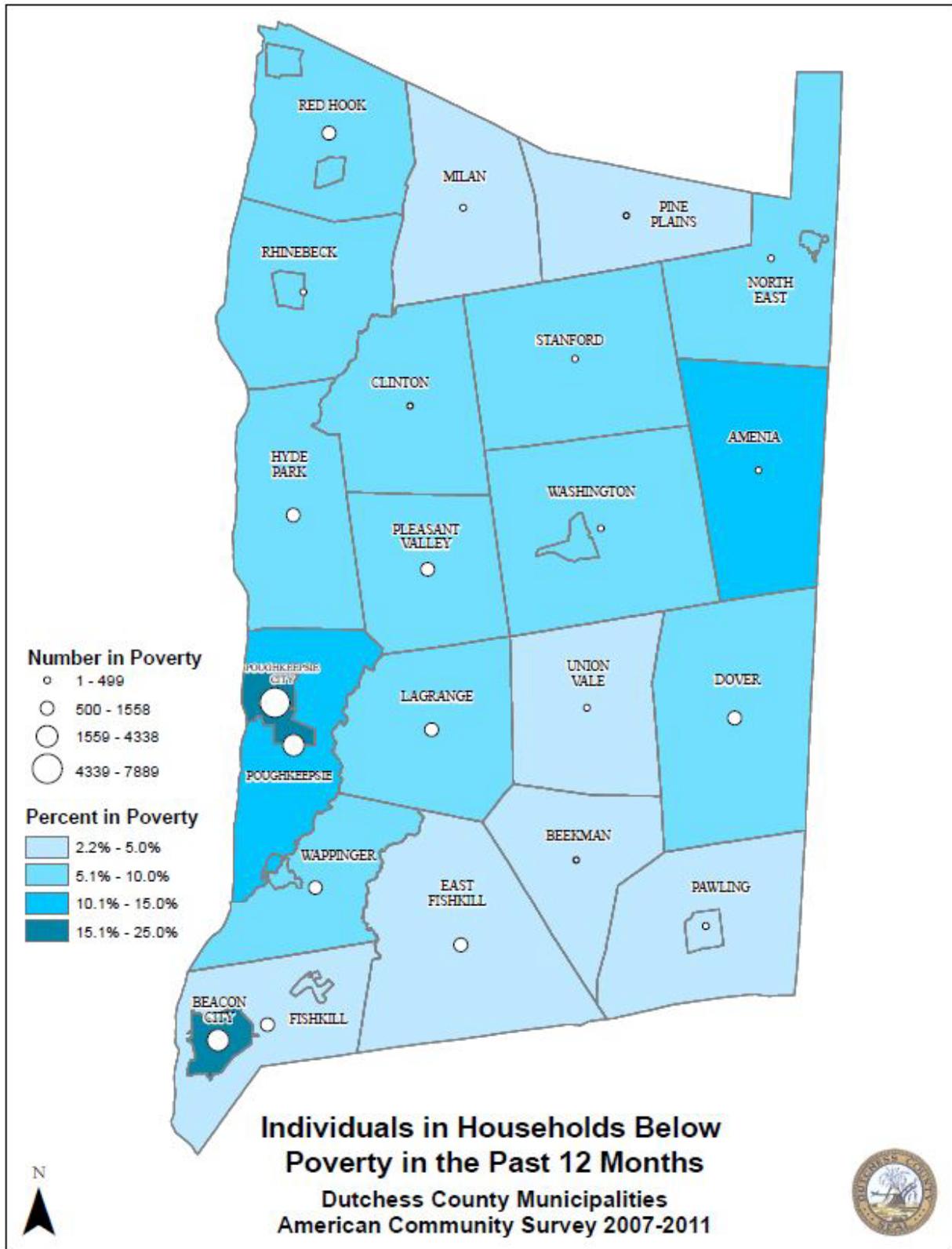
Income, alongside education, is one of the strongest correlates of health and well-being, with the rates of most health conditions, behavioral risk factors, injuries, and mortality being highest among low-income populations (*CDC Health Disparities and Inequalities Report, 2011*). Mapping poverty is therefore useful for planning and the identification of high-risk communities. As shown in Map 3, poverty is most heavily concentrated in the cities of Poughkeepsie and Beacon.

Map 2



Data Source: U.S. Census Bureau

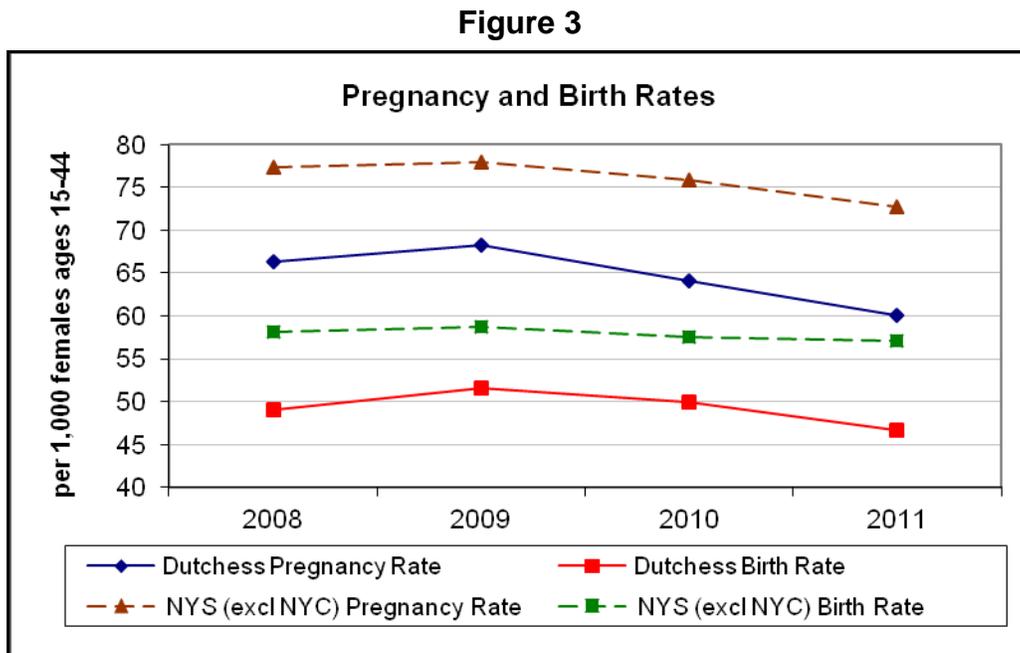
Map 3



2. Maternal and Child Health

a. Overall Pregnancy and Fertility Trends

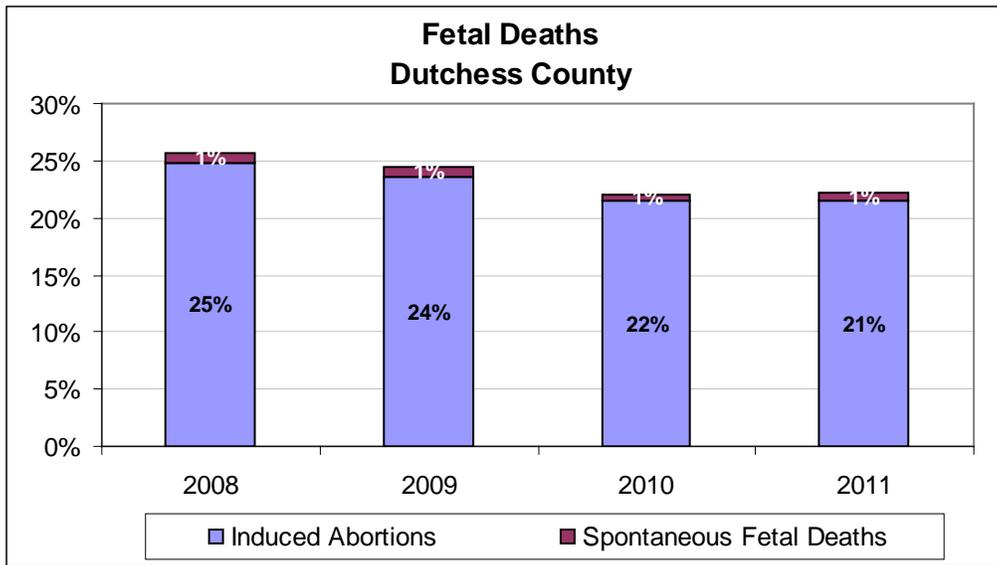
In the last decade, pregnancy rates in Dutchess County have fallen 16% and birth rates 17%. This translates to 3,411 pregnancies and 2,652 births in 2011, down from 4,346 pregnancies and 3,340 births in 2000. Trends mirror that of NYS (excl NYC) although NYS rates are overall higher.



Data Source: NYSDOH Health Indicator Reports

Pregnancies that do not result in a live birth consist of spontaneous fetal deaths of any gestational age and induced abortions. The percent of spontaneous fetal deaths remains at 1% and the overall trend is that of a slight increase in pregnancies resulting in a live birth.

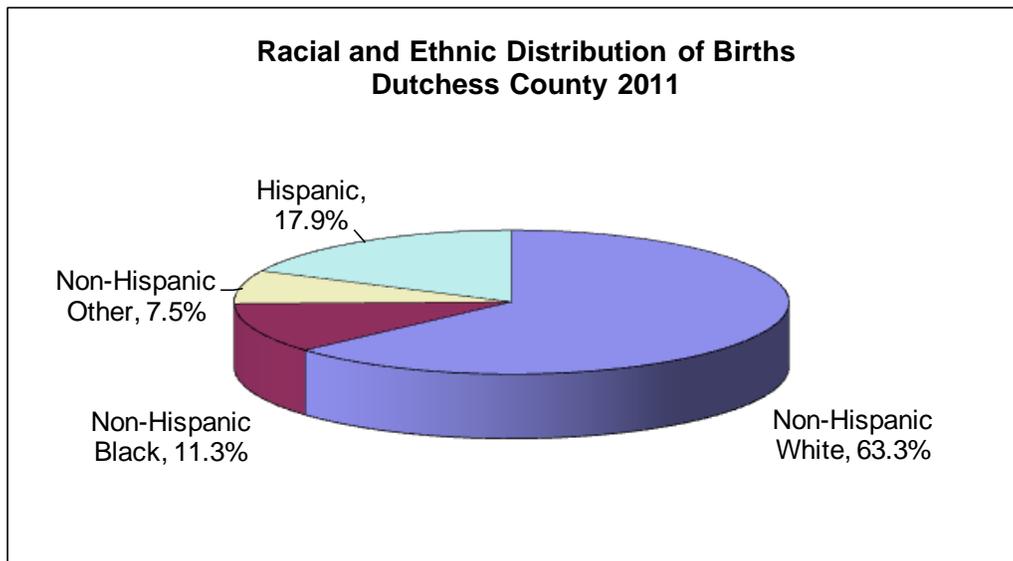
Figure 4



Data Source: NYSDOH Bureau of Biometrics and Health Statistics

As reflected in overall County demographics, the racial/ethnic mix of births is changing. Since 2009, the percent of Hispanic and Non-Hispanic Black births has increased by 11% and 9%, respectively, while Non-Hispanic White births have decreased by close to 3%.

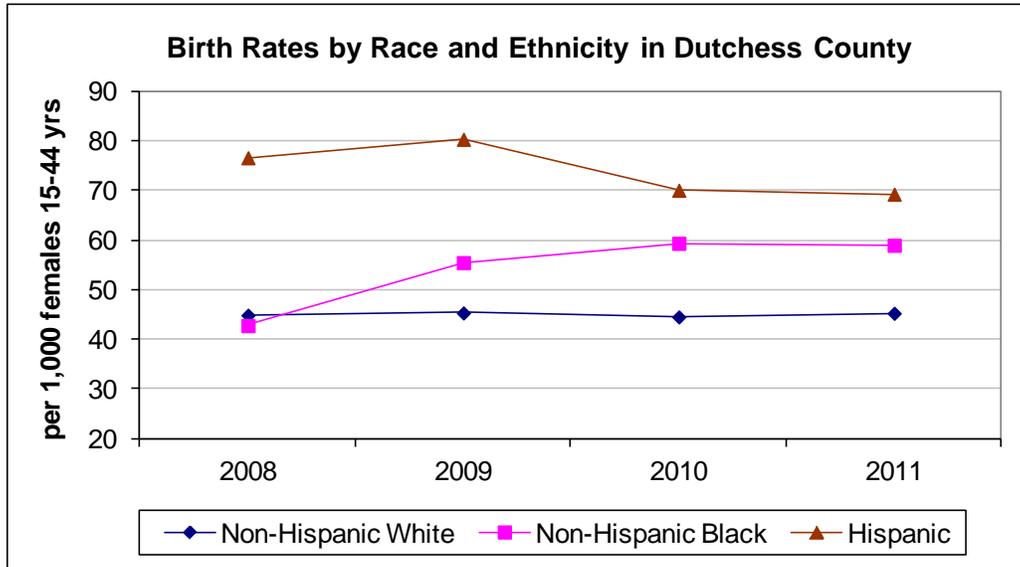
Figure 5



Data Source: NYSDOH Bureau of Biometrics and Health Statistics

Hispanic fertility rates continue to be higher than those of Non-Hispanic White and Non-Hispanic Black rates but have showed a noticeable drop in the last two reported years.

Figure 6

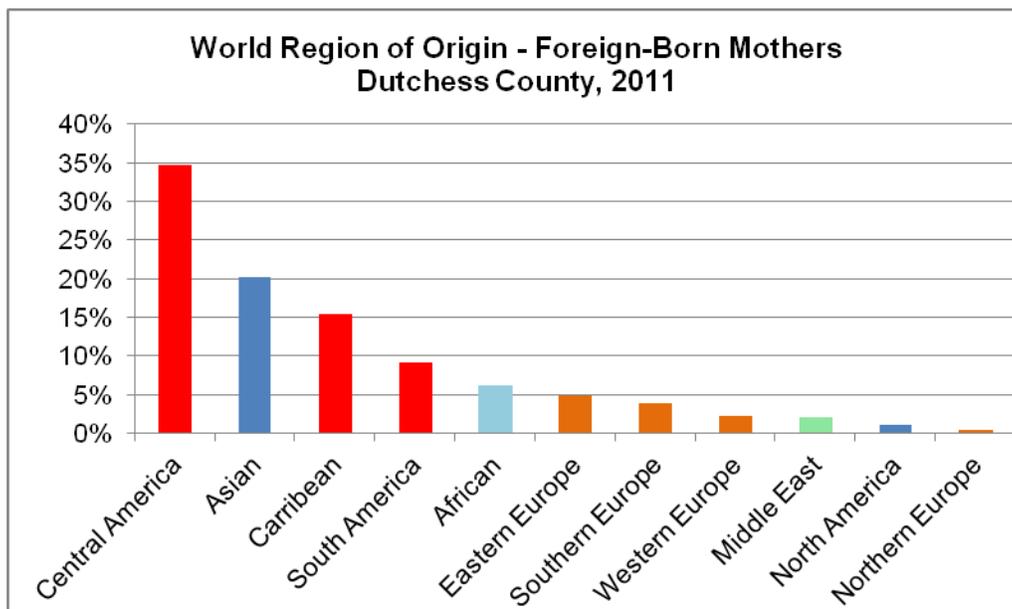


Data Source: NYSDOH Bureau of Biometrics and Health Statistics

In the past 10 years, the percent of births to foreign-born mothers has consistently remained around 20%. The distribution of world regions of origin has also remained basically unchanged. Latin American countries (red bars in Figure 7) account for 60% of all foreign-born mothers in Dutchess County, Asia for 20% and European regions for 11%.

Mexico accounts for 27% of all foreign-born mothers and is by far the most prevalent country of origin. The top for Latin American countries are (1) Mexico, which constitutes close to half of all Latin American countries and 80% of Central American countries; (2) Jamaica, which constitutes 19% of all Latin American countries and 71% of Caribbean countries; (3) Ecuador (South America) and (4) Guatemala (Central America) which respectively constitute 8% and 6% of Latin American countries. The second most frequent region of birth is Asia with mothers originating primarily from India (25%), Korea (18%), China (16%), and the Philippines (12%).

Figure 7



Data Source: NYSDOH Bureau of Biometrics and Health Statistics

b. Risk Factors

Risk factors cover a wide range of socio-demographic characteristics, including race and ethnicity, maternal age and education, income, marital status, and insurance coverage which can be associated with compromised or poor maternal and fetal outcomes. These characteristics often exist concurrently, creating complex interactions. Racial/ethnic disparities are discussed in the context of the individual risk factors presented below.

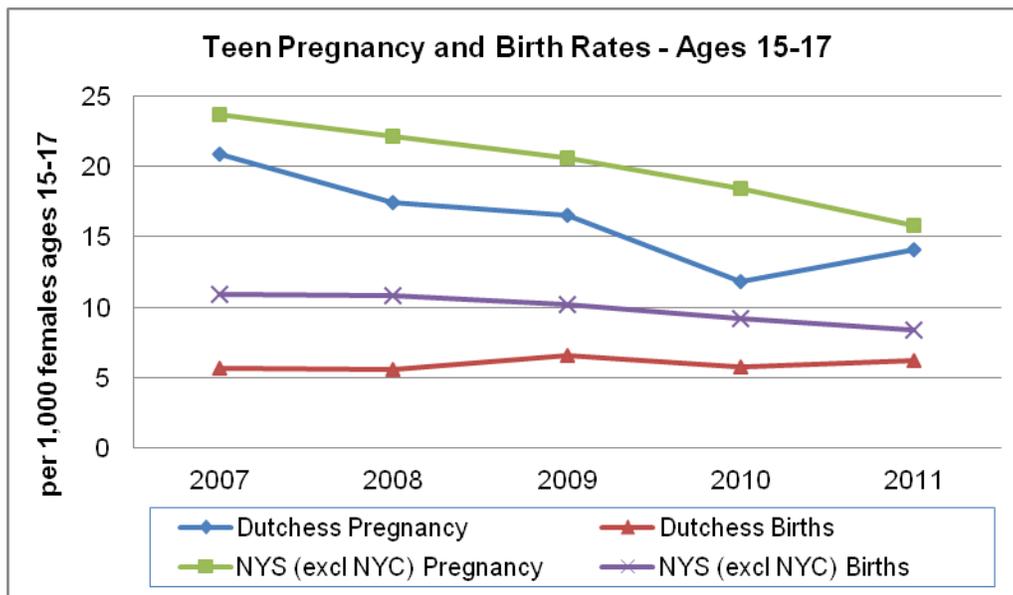
i. Teen Pregnancy

In the last decade teen pregnancy rates (ages 15-19) have fallen 48%, including a 10.8% drop from 2010 to 2011. Concurrently, teen birth rates have fallen 45%, with a 15.7% drop from 2010 to 2011. Teen births continue to constitute approximately 5.5% of all births.

Because of age-related developmental and behavioral differences in this population, teen statistics are often subdivided into 15-17 year olds and 18-19 year olds. Pregnancy and birth rates are lower among 15-17 year olds. The birth rates among 10-14 year olds remain extremely low – averaging 0.1 to 0.2 per 1,000 females ages 10-14; these data are not presented in this report.

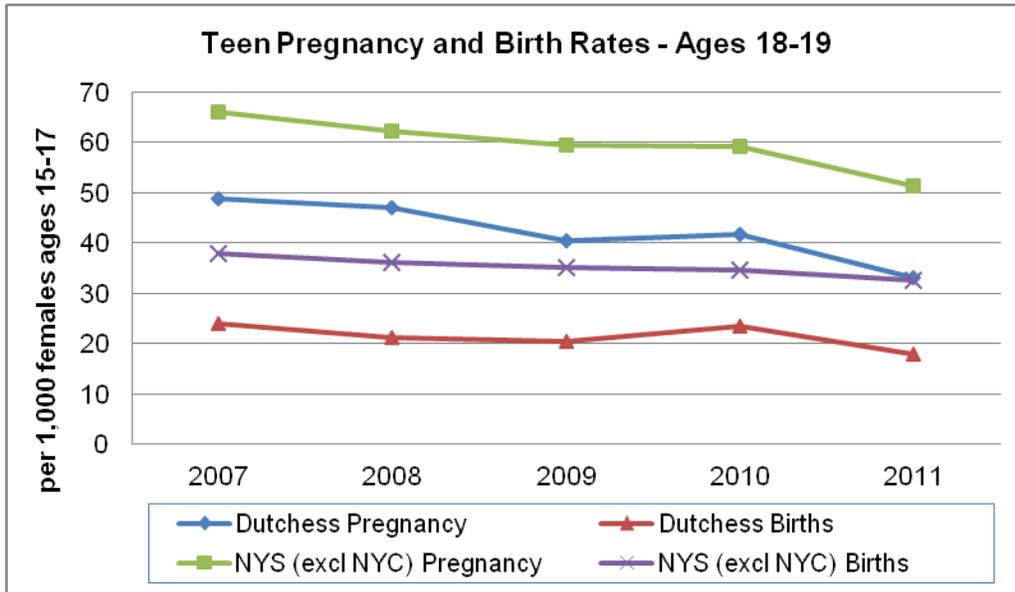
The Healthy People 2020 goal for 15-17 year olds is 36.2 pregnancies per 1,000 females ages 15-17. Dutchess County far exceeds that goal.

Figure 8



Data Source: NYSDOH Health Indicator Reports

Figure 9



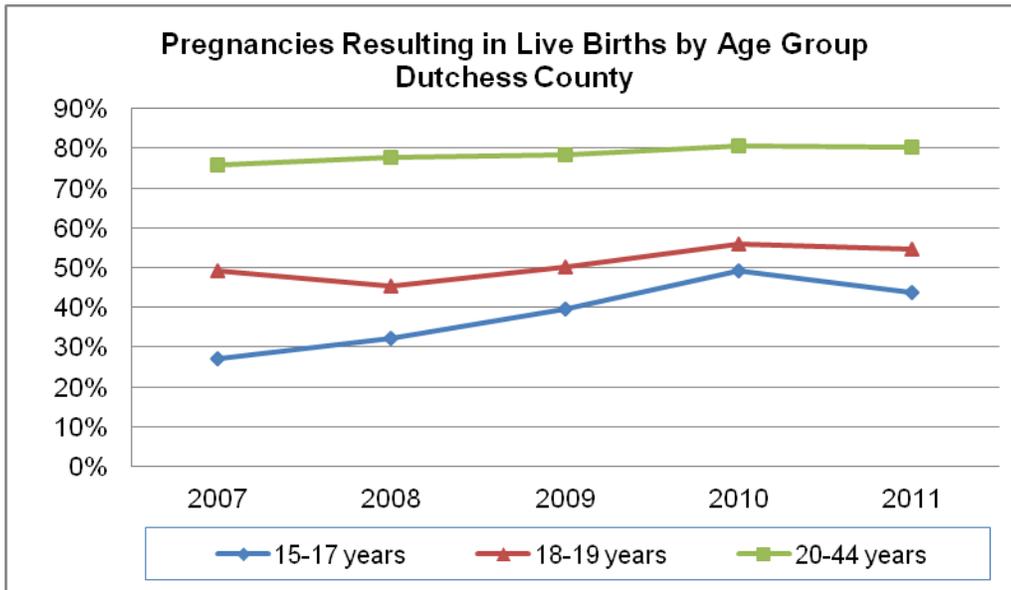
Data Source: NYSDOH Health Indicator Reports

The Healthy People 2020 goal for 18-19 year olds is 105.9 pregnancies per 1,000 females.

Again, County rates are exceeding the goal and continue to decrease.

As expected, the percent of teen pregnancies resulting in live births is lower than that of the rest of the female population.

Figure 10



Data Source: NYSDOH Health Indicator Reports

Racial and ethnic disparities are pronounced. The pregnancy rate among 15-17 year old Non-Hispanic Black and Hispanic teens is four times that of Non-Hispanic Whites.

Table 12

**Teen Pregnancy Rate by Race/Ethnicity
(rate per 1,000 females ages 15-17, race/ethnicity specific)
Dutchess County, 2008-2010**

Non-Hispanic		Hispanic	Total
White	Black		
8.1	34.4	33.4	15.1

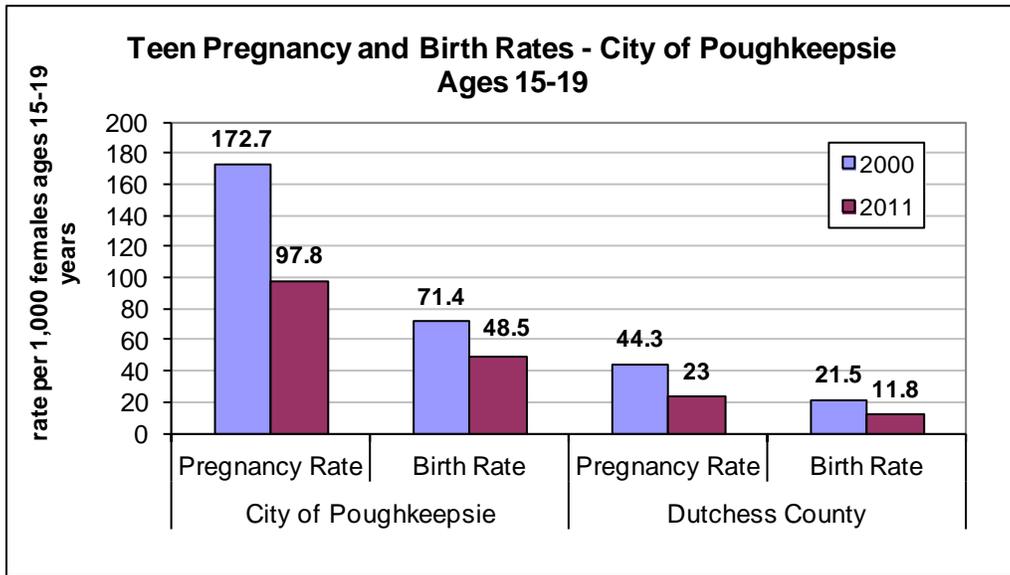
Data Source: NYSDOH Health Indicator Reports

City of Poughkeepsie

The City of Poughkeepsie continues to make up approximately 40% of all teen pregnancies and births in the County and has both the highest concentration of numbers of teen pregnancies and births as well as the highest rates. The City of Beacon, which historically had the second highest teen rates in the County, albeit with much smaller numbers than the City of Poughkeepsie, has experienced a marked decline in its rates.

City of Poughkeepsie rates are reported for ages 15-19 because of small annual numbers. In the last decade the City's teen pregnancy rate has fallen 43.4% compared to 48% for the County. The City's teen birth rate fell 32% compared to 45% for the County. Nonetheless, The City's rates remain disproportionately high. The average numbers of teen pregnancies and birth in the City for the period 2009-2011 were 137 and 64 respectively.

Figure 11

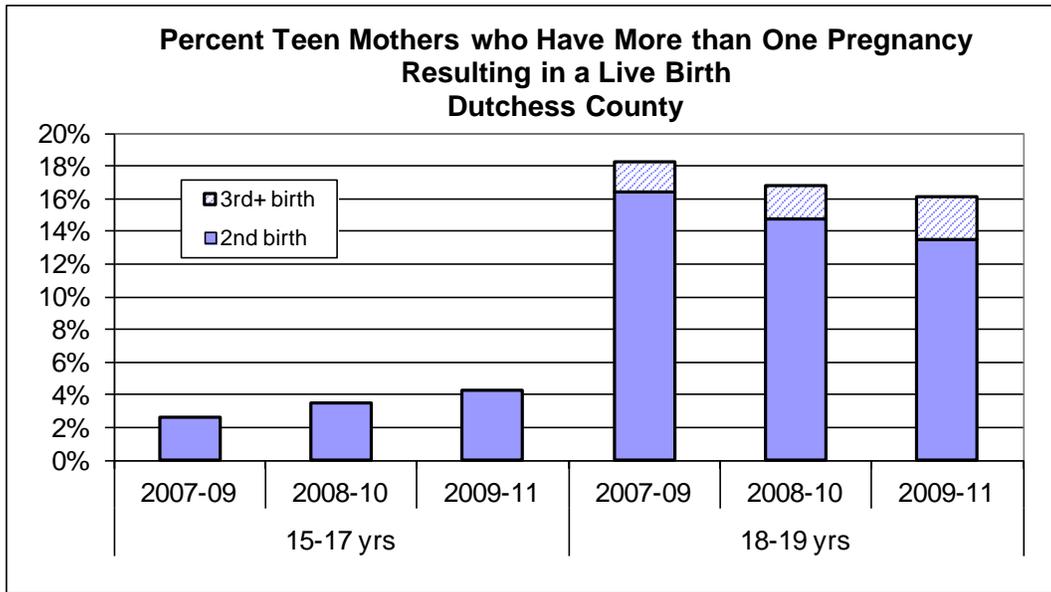


Data Source: NYSDOH Bureau of Biometrics and Health Statistics

Teen Mothers who Have More than One Pregnancy Resulting in a Live Birth

Sometimes referred to as “Repeat Pregnancies”, these are pregnancies occurring after the first teen pregnancy while the mother is still under the age of 20 and resulting in a live birth. The incidence of such births for 15-19 year olds remains around 13% and is accounted for primarily by births to 18-19 year olds. Trends in the younger age group of 15-17 years are difficult to interpret as the numbers are very small, even with three-year averaging. However, “repeat pregnancies” appear to be increasing among 15-17 year olds while decreasing among 18-19 year olds.

Figure 12



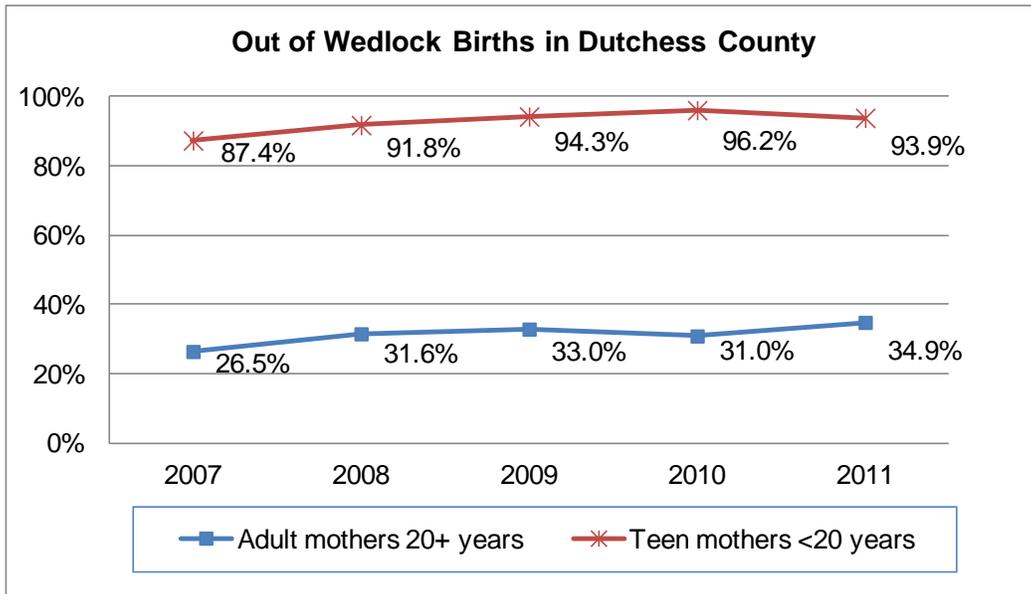
Data Source: NYSDOH Health Indicators Reports

ii. Out of Wedlock Births

Paralleling state and nationwide trends, the rate of County births to unwed mothers continues to increase. The U.S. Census Bureau's American Community Survey (ACS) found that 36% of the 4.1 million women who gave birth in the U.S. in 2011 were unmarried, up from 31% in 2005. The ACS research indicates that states with a higher percentage of out of wedlock births in 2011 tended to have a higher incidence of poverty.

In Dutchess County, there has been a 28% increase in out of wedlock births since 2007 and a 56% increase since 2000. The incidence of teen out of wedlock births remains approximately three times higher than that of adult mothers. The majority of teen mothers are unwed. This translates to an annual average of 135 out of wedlock teen births.

Figure 13



Data Source: NYSDOH Bureau of Biometrics

Racial disparities are also apparent. Among Non-Hispanic Black mothers, almost three quarters of births are out of wedlock compared to Hispanic mothers (50%) and Non-Hispanic White mothers (24%); calculation are based on three year average 2009-2011 (*Data Source: NYSDOH Bureau of Biometrics and Health Statistics*). This pattern is consistent with national statistics; in 2011, almost 68% of new Black mothers were unmarried compared to 26% of Non-Hispanic White mothers.

iii. Unintended Pregnancies

Unintended pregnancies are defined as pregnancies that, at the time of conception, are either mistimed or unwanted. These pregnancies are associated with a range of behaviors that can adversely affect the health of mothers and their babies. These maternal behaviors include delayed entry into prenatal care, inadequate weight gain, cigarette smoking, and use of alcohol and other drugs. Unintended pregnancies are also associated with adverse birth outcomes, such as prematurity, and low birthweight; physical and emotional impact can continue past infancy.

Half of all pregnancies in the U.S each year are unintended, including eight in 10 teen pregnancies. In 2006, the last year for which data are available, the U.S. unintended pregnancy rate was 52/1,000 women aged 15-44, a level significantly higher than that in many other developed countries. Economically disadvantaged women are disproportionately affected by unintended pregnancy and its consequences. In 2006, 56% of all pregnancies in NYS were unintended, compared with 49% nationally. New York's unintended pregnancy rate in 2006 was 65/1,000 women aged 15-44.

Economically, unintended pregnancy costs U.S. taxpayers approximately \$11 billion each year. Estimates are conservative because they are limited to public insurance costs for pregnancy and first-year infant care. By helping women avoid unintended pregnancies, publicly funded family planning services saved taxpayers \$5.1 billion in 2008, nearly \$4 for every \$1 spent (*State Facts About Unintended Pregnancy – New York, Guttmacher Institute, 2012*).

In New York State, in 2006, 65% of births that resulted from unintended pregnancy were publicly funded (compared to 64% nationally). The federal and state governments spent \$749 million on NYS births resulting from unintended pregnancies; half of the cost was paid by the State.

The services provided by family planning centers in New York helped avert 98,000 unintended pregnancies in 2008, which would likely have resulted in 43,600 births and 40,900 abortions. Averting these unintended pregnancies in New York helped save the federal and state governments \$395.9 million in Medicaid costs for pregnancy-related and newborn care in 2008 (<http://www.guttmacher.org/statecenter/unintended-pregnancy/NY.html>).

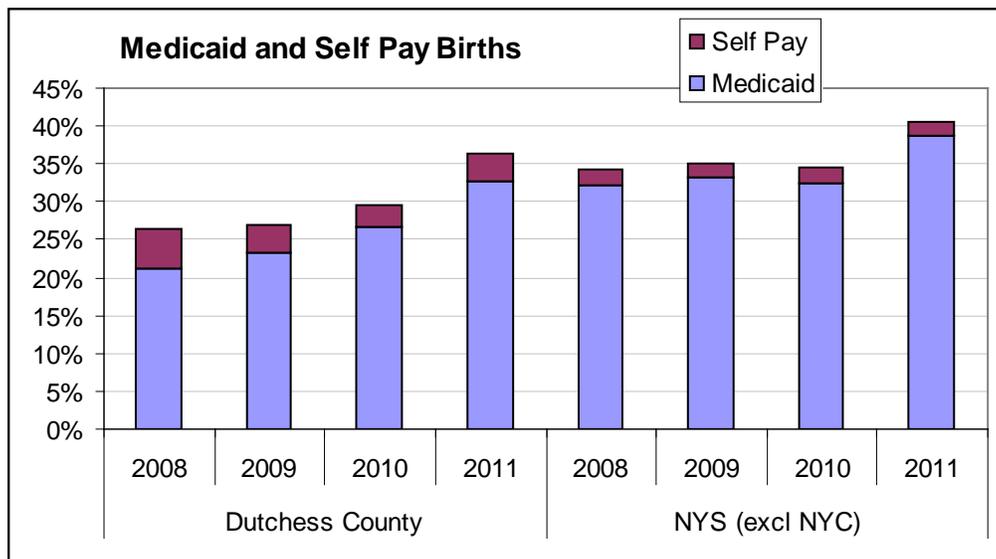
In 2011, in Dutchess County, 28.5% of live births were the result of an unintended pregnancy (compared to 26.7% in NYS). Non Hispanic Black live births were twice as likely to be the result of an unintended pregnancy compared to Non Hispanic White births (*NYDSOH Indicators for Tracking Public Health Priority Areas 2014-2017*)

iv. Medicaid and Self Pay Births

Uninsured and underinsured women are at high risk for non-continuity of care. Health insurance is one of many issues involved in the provision of preconception care which is of paramount importance in addressing healthy lifestyles and behaviors for women of childbearing age.

After staying around 20-23% since 2000, the percent of Medicaid births is rising. Self-pay birth rates are low and more variable. In 2011, Medicaid and self-pay births constituted over one third of all live births in the County (36.5%).

Figure 14



Data Source: NYSDOH Health Indicators Reports

An estimated 17.4% of women of childbearing age (15-44 years) are uninsured in NYS and 29.1% in the U.S. (*U.S. Census Bureau, Current Population Survey 2009-2011 via March of Dimes*). However, health insurance coverage during pregnancy is available to indigent women, regardless of citizenship or legal status, through a variety of programs. In Dutchess County, services are available through Hudson River HealthCare centers. Coverage only extends through the postpartum period and women must then apply for Medicaid or Family Health Plus coverage. Non-citizens are ineligible.

v. Behavioral Risk Factors

There are numerous maternal behavioral factors that can impact the health outcome of infants as well as that of mothers, including tobacco and other forms of substance abuse such as alcohol and drugs, and poor nutrition. Tobacco use during pregnancy is associated with preterm birth, small size for gestational age, and low birthweight; it contributes to the occurrence of spontaneous abortion, stillbirth, fetal death, and sudden infant death syndrome; approximately 5% of infant deaths in the U. S. can be attributed to maternal tobacco use. Use of alcohol during pregnancy is associated with spontaneous abortions, fetal alcohol syndrome, birth defects, and developmental disorders, many of which occur early in gestation before the woman is aware that she is pregnant. Inadequate folic acid intake before pregnancy increases the risk for neural tube defects (NTD) in the infant; NTDs affect an estimated 3,000 pregnancies annually, and 95% of children born with an NTD are born to couples with no history of these birth defects. Obesity before pregnancy and in early pregnancy is associated with fetal and neonatal death, antepartum stillbirth, large-for-gestational-age infants and cesarean section, birth defects, preeclampsia, and hypertensive and thromboembolic disease, and gestational diabetes (*Centers for Disease Control and Prevention*). Having access to the appropriate healthcare services is essential to achieving good maternal child health outcomes.

Smoking

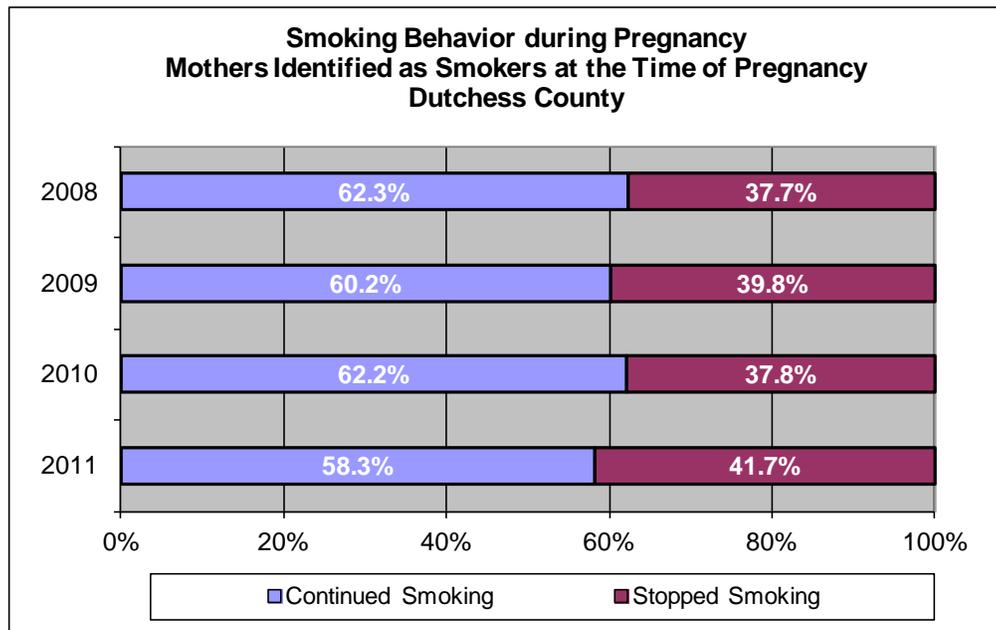
Smoking among non-pregnant women contributes to reduced fertility, and smoking during pregnancy is associated with delivery of preterm infants, low infant birthweight, and increased infant mortality. After delivery, exposure to secondhand smoke can increase an infant's risk for respiratory tract infections and for dying of sudden infant death syndrome. During 2000--2004, an estimated 174,000 women in the U.S. died annually from smoking-attributable causes, and an estimated 776 infants died annually from causes attributed to maternal smoking during pregnancy (*MMWR Surveillance Summary 58(S 504), 2009*). Smoking-attributable costs by a pregnant smoker are estimated at \$880. A 1% decrease in smoking prevalence would save the U.S. \$21 million in direct medical costs in the first year (*Pregnant Smokers – Treatment Strategies, E. Park, Treatment Strategies & Medicaid Reimbursement, New York State Cessation Center Collaborative Statewide Conference Call, 3/4/2009*).

In New York State, approximately 19 % of women of childbearing age smoke; the highest rates are observed in younger women (< 20 years of age), White Non-Hispanic, and lower income. (*Smoking: Behavioral Risk Factor Surveillance System. Behavioral Surveillance Branch, Centers for Disease Control and Prevention, Retrieved August 22, 2013, from www.marchofdimes.com/peristats*)

It should be noted that self-reported unhealthy behaviors are subject to under-reporting. In the case of smoking during pregnancy, “deception rates” as high as 50% have been documented (*Treatment Strategies & Medicaid Reimbursement, NYS Cessation Center Collaborative Statewide Conference Call, March 4, 2009*).

In Dutchess County, approximately 13-15% of mothers self-identify as smokers at the beginning of the pregnancy. The proportion of mothers who stop smoking during pregnancy is slowly rising with minor annual fluctuations and was 41.7% in 2011. The Dutchess proportions are similar to those reported for NYS (excl NYC) in the PRAMS 2000-2008 survey, where 44% of women who smoked three months before pregnancy stopped smoking during pregnancy in 2008.

Figure 15



Data Source: NYSDOH Bureau of Biometrics and Health Statistics

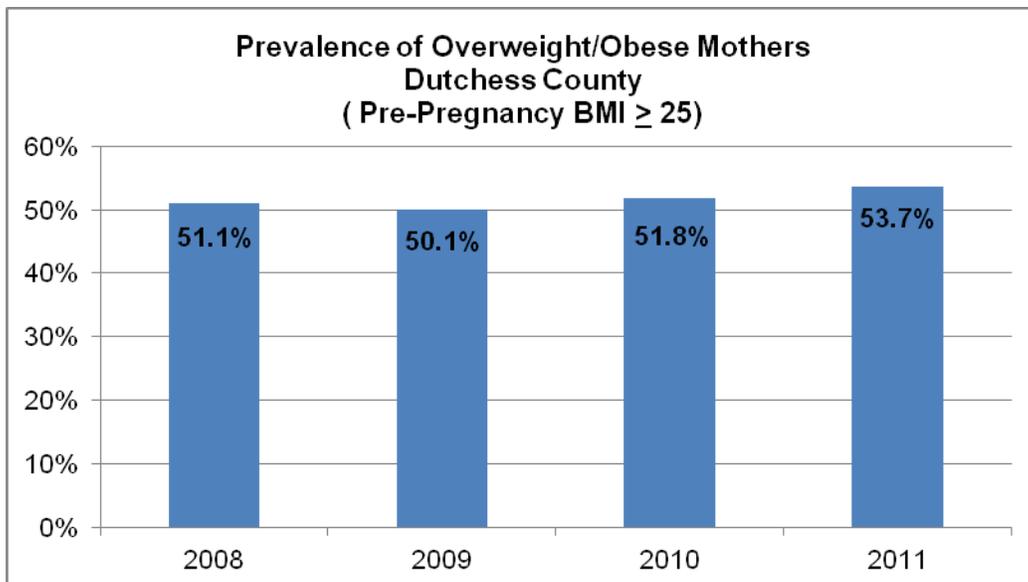
Obesity

Over 30% of women ages 20-39 in the U.S. are estimated to be obese – defined as a Body Mass Index (BMI) 30 or greater (*NHAHES 2005-2006 Report*). Obesity in pregnancy is now considered a common high-risk obstetrical condition which affects approximately one in five women who give birth (*Association between Obesity during Pregnancy and Increased Use of Health Care, Chu et al, NEJM 358(14), 2008*). The rising evidence linking obesity to birth defects and higher risk of pregnancy complications and adverse outcomes make normal pre-pregnancy weight and appropriate weight gain during pregnancy of paramount importance in preconception and prenatal care.

Obesity during pregnancy is also correlated with significantly increased healthcare services utilization (i.e. ultrasounds, medications, prenatal fetal tests) and longer hospital stays, due to the increased incidence of serious pregnancy-related complications, such as high blood pressure, gestational diabetes, and Caesarean deliveries (*Association between Obesity during Pregnancy and Increased Use of Health Care, Chu et al, NEJM 358(14), 2008*).

In Dutchess County, as of 2011, over half of pregnant women are either overweight or obese. The prevalence of overweight/obesity in pregnancy continues to increase.

Figure 16



Data Source: NYSDOH Bureau of Biometrics and Health Statistics

c. Maternal and Fetal Outcomes

The five leading causes of infant deaths (death under one year of age) in the U.S. are birth defects, complications from prematurity and low birthweight, sudden infant death syndrome (after first month of life), maternal complications of pregnancy, and injuries. They account for 57% of all infant deaths (CDC).

Infant mortality, fetal mortality, and preterm birth all represent important health challenges that have shown little recent improvement. There are substantial racial and ethnic disparities in fetal and infant mortality and preterm birth, with Non Hispanic black women at greatest risk of unfavorable birth outcomes. These outcomes are multifactorial and involve interrelated problems with similarities in etiology, risk factors and disease pathways. Preterm birth prevention is critical to lowering the infant mortality rate and to reducing racial and ethnic disparities in infant mortality (*Race and ethnic disparities in fetal mortality, preterm birth, and infant mortality in the United States: an overview, MacDorman MF, Semin Perinatol, 35(4), 2011*).

i. Morbidity

Low Birthweight Births

While the County rates meet the Healthy People 2020 goal of 7.8%, low birthweight birth rates have not declined in the past decade, and, in fact, there has been a 13.6% increase in rates since 2000 (from 6.6%).

Table 13
Low Birthweight Birth Rates - <2500 grams
(per 100 live births)

All Low Birthweight Births	2008	2009	2010	2011
Dutchess County	7.2	7.1	6.6	7.5
NYS (excl NYC)	7.6	7.7	7.7	7.8
Singleton Low Birthweight Births	2008	2009	2010	2011
Dutchess County	5.6	4.9	5.0	n/a
NYS (excl NYC)	5.7	5.6	5.7	n/a

Data Source: NYSDOH Health Indicators Reports

Singleton pregnancies are usually lower risk than multiple gestations. They constitute approximately 70% of all low birthweight births. Low birthweight rates drop noticeably when multiple gestations are excluded.

Premature Births

In the U.S. there is a pronounced and persistent racial/ethnic disparity in the rate of preterm births. Even after decades of research and public health initiatives, this disparity remains relatively unchanged. Factors that “promote” this disparity remain difficult to identify and, at least in part, are likely the result of complex mechanisms originating from social inequities (*Racial Disparities in Preterm Birth, Culhane JF et al, Seminars in Perinatology, 35(4), 2011*).

Table 14
Premature Birth Rates - < 37 Weeks Gestation
(per 100 live births)

	2008	2009	2010	2011
Dutchess County	9.6	10.4	9.5	11.0
NYS (excl NYC)	11.3	11.4	11.0	11.0

The County has met the Healthy People 2020 goal of 11.4% for premature births, but rates have been in a holding pattern in the last decade with a 6.8% increase since 2000.

Data Source: NYSDOH Health Indicators Reports

As reflected in national and state trends, Non-Hispanic Blacks have markedly higher rates than Non-Hispanic Whites and Hispanics.

Table 15
Prematurity - < 37 Weeks Gestation – by Race and Ethnicity – Dutchess County

Health Indicator 2008-2010 (3 year average)	Non-Hispanic			Hispanic	Total
	White	Black	Other		
Premature Births (< 37 Weeks Gestation)	9.3%	16.7%	8.0%	10.8%	10.4%
Low Birthweight Births (< 2500 grams)	6.1%	12.3%	5.9%	6.9%	7.0%

Data Source: NYSDOH Health Indicators Reports

Congenital Anomalies

The Congenital Malformations Registry of the NYSDOH is a repository for case reports on children who are born or reside in NYS and are diagnosed before the age of two years with any structural, functional or biochemical abnormality determined genetically or induced during gestation and not due to birthing events. The most frequently reported anomalies are presented in Table 16. Children reported with more than one malformation may be represented more than once in the table. For the period 2006-2008, Dutchess County averaged 131 congenital anomalies, representing approximately 5% of live births.

Table 16

Most Common Congenital Malformations Diagnosed in Children Before the Age of Two - Dutchess County (2006-2008)

Anomaly	# Cases	Percent
Hypospadias & epispadias	42	18.2%
Obstructive defects of renal pelvis & ureter	37	16.0%
Ventricular septal defect	35	15.2%
Congenital hypertrophic pyloric stenosis	28	12.1%
Undescended testicle	25	10.8%
Ostium secundum atrial septal defect	20	8.7%
Patent ductus arteriosus	12	5.2%
Congenital dislocation of hip	12	5.2%
Varus deformities of feet	11	4.8%
Down syndrome	9	3.9%
Total	231	100.0%

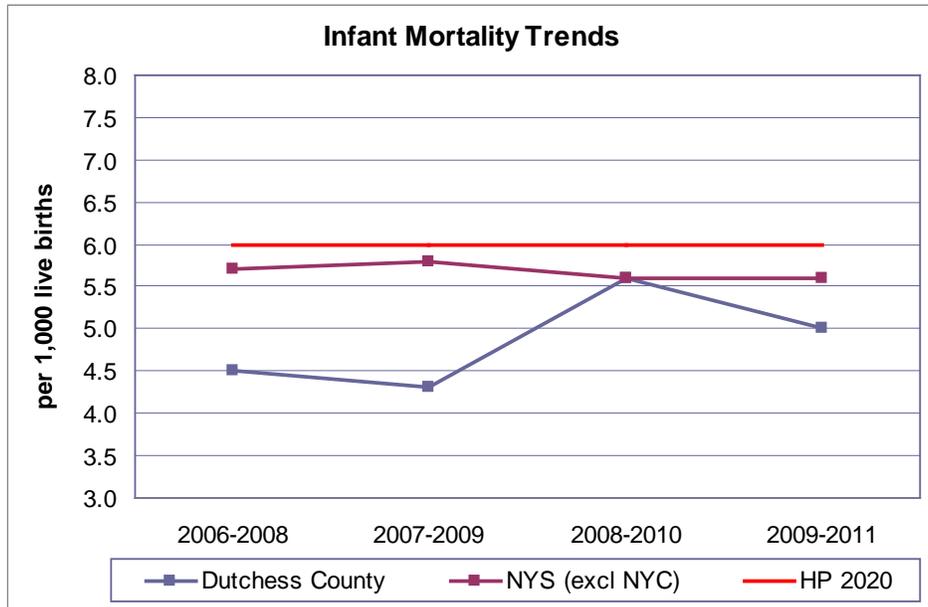
Data Source: NYSDOH Congenital Malformations Registry

ii. Mortality

The World Health Organization defines maternal death as the death of a woman while pregnant or within 42 days of the end of a pregnancy, from any cause related to the pregnancy or its management, but not from accidental or incidental causes. Since 2000, there have been three maternal deaths in Dutchess County, one in 2001, one in 2009, and one in 2011 (*NYSDOH Bureau of Biometrics and Health Statistics*).

Infant mortality rates in Dutchess County meet the Healthy People 2020 goal of 6.0/1,000 live births, but they have remained essentially unchanged in the past decade.

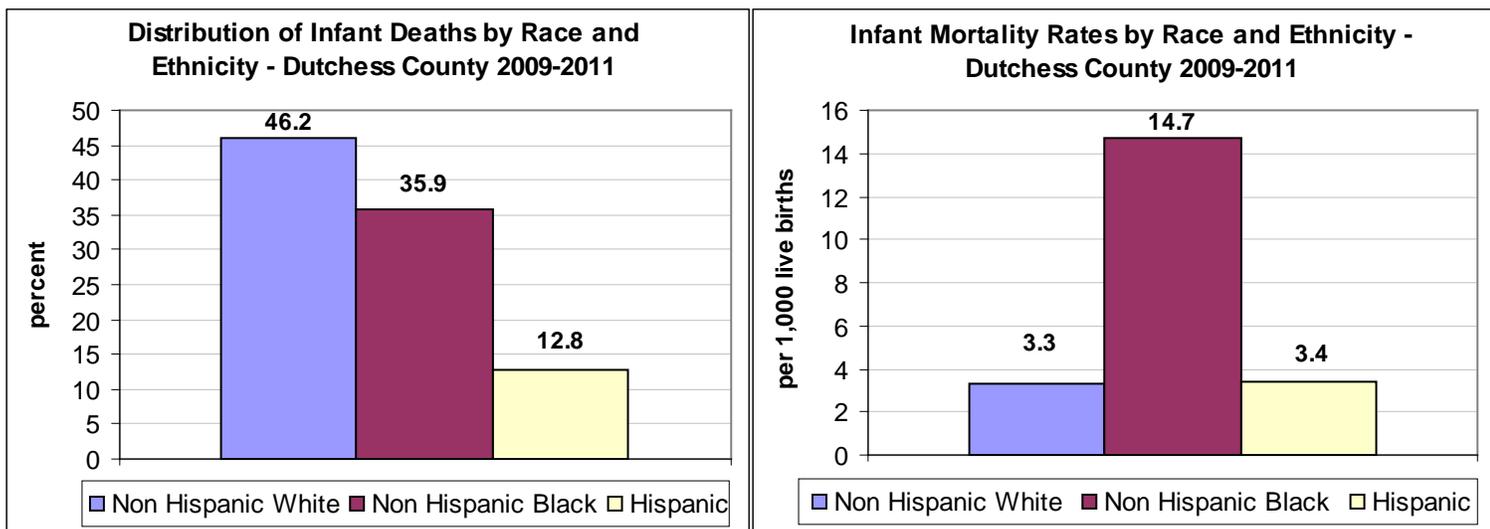
Figure 17



Data Source: NYSDOH Health Indicators Reports

Mirroring natial and state data, Dutchess County racial/ethnic disparities are marked; infant death rates are among Non-Hispanic Blacks are more than four times greater than those of Non-Hispanic Whites and Hispanics (Figure 18).

Figure 18



Data Source: NYSDOH Vital Statistics

d. Prevention

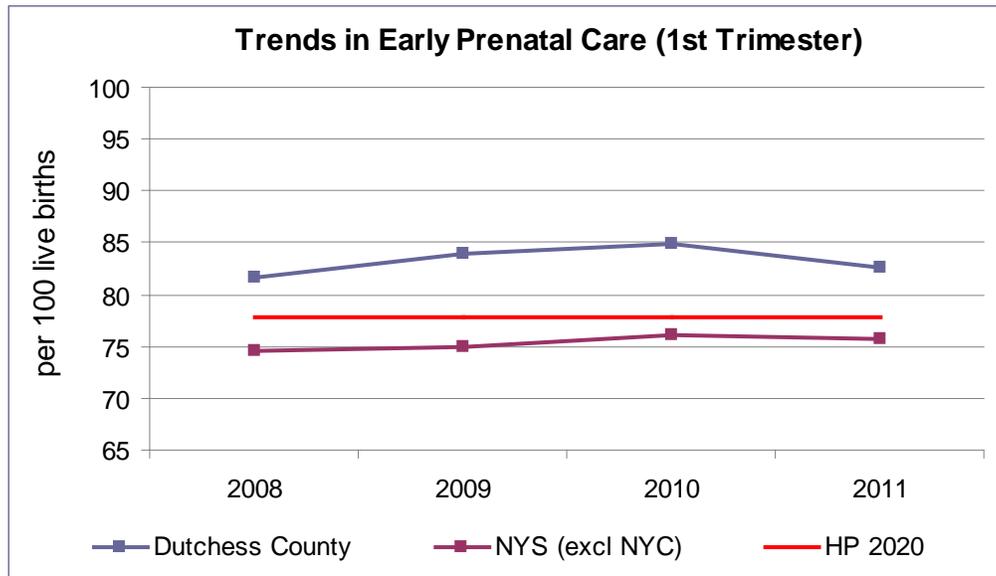
An estimated 17% of women of childbearing age (ages 15-44) are uninsured in NYS (*U.S. Census Bureau Current Population Survey Annual Social and Economic Supplements, 2009-2011 average*). However, healthcare services are available to this population during pregnancy. In NYS, pregnant and indigent women, regardless of their citizenship, are eligible for prenatal care through a variety of programs. In Dutchess County, these women receive care through the Prenatal Care Assistance Program provided through Hudson River HealthCare, a federally funded healthcare facility. However, coverage only extends through the postpartum period, including 18-24 months of family planning services. Women must then reapply for either Medicaid or Family Health Plus coverage. Non-citizens are ineligible to apply.

i. Preconception Care and Prenatal Care

Preconception care is defined as a set of interventions to identify and modify biomedical, behavioral, and social risks to a woman's health or pregnancy outcome through prevention and management. Maternal behaviors known to be related to poor birth outcomes include tobacco use, alcohol use, and inadequate folic acid consumption. Evidence suggests that successful interventions targeting these behaviors prior to pregnancy are associated with improved maternal and child health. Other conditions associated with poor pregnancy outcomes include unintended pregnancy, physical abuse, and high levels of stress. Certain maternal health conditions (e.g., diabetes, hypertension, and obesity), if uncontrolled, can lead to poor infant outcomes and have a long-term negative impact on a woman's health. Uncontrolled diabetes during pregnancy can result in a threefold increase in birth defects and maternal health problems (*CDC*).

Healthy People lowered its goal for early entry into prenatal care to 77.9% in 2020 (down from 90% in 2010). While Dutchess is meeting this goal, trends over the past decade into 2011 show no progress towards increasing rates.

Figure 19



Data Source: NYSDOH Health Indicators Reports

Non-Hispanic Blacks and Hispanics have markedly lower rates of early prenatal care and adequate prenatal care than Non-Hispanic Whites.

Table 17

Prenatal Care (1st Trimester) by Race and Ethnicity – Dutchess County

Health Indicator 2008-2010 (3 year average)	Non-Hispanic			Hispanic	Total
	White	Black	Other		
Early Prenatal Care (1 st Trimester)	87.6%	71.8%	80.9%	76.9%	83.5%
Adequate Prenatal Care (Kotelchuck Index)	76.4%	55.2%	68.4%	62.8%	71.0%

Data Source: NYSDOH Health Indicators Reports

ii. Breastfeeding

For nearly all infants, breastfeeding is the best source of infant nutrition and immunologic protection, and it also provides health benefits to mothers. Babies who are breastfed are less likely to develop disease and infection. Many mothers in the U.S. want to breastfeed but within three months of giving birth, more than two-thirds of breastfeeding mothers are using formula. By six months postpartum, more than half of mothers have given up on breastfeeding, and mothers who breastfeed one-year olds or toddlers are a rare.

Research has also reaffirmed the health risks associated with formula feeding and early weaning from breastfeeding; the risk of sudden infant death syndrome is 56% higher among infants who are never breastfed. Formula feeding is associated with higher risks for major chronic diseases and conditions, such as type 2 diabetes, asthma, and childhood obesity, all three of which have increased among U.S. children over time (*The Surgeon General's Call to Action to Support Breastfeeding, 2011*)

Mothers also benefit from breastfeeding with decreased risk for osteoporosis later in life, easier postpartum weight loss and lower risk of breast, uterine and ovarian cancer. Breastfeeding also has economic advantages: it's cheaper than buying formula and helps avoid medical bills later because it helps equip the baby to fight off disease and infection.

Although breastfeeding in the U.S. lags behind most industrialized countries, rates are rising. Breastfeeding initiation increased from 74.6% in 2008 to 76.9% in 2009 births. Breastfeeding at six months increased from 44.3% to 47.2%; breastfeeding at 12 months increased from 23.8% to 25.5% (*Breastfeeding Report Card 2012, CDC*).

Long-term breastfeeding is difficult to document at the County level. Data are available from the Women Infants and Children (WIC) program, which only covers a segment of lower income mothers. WIC is a special supplemental food program that provides nutritious foods, milk, juice, formula and other items to low income pregnant or breastfeeding women, infants and children up to age five.

The national rate of breastfeeding at six months was 47.2% in 2009. In Dutchess County, breastfeeding rates at six months are increasing among WIC mothers, but are lower than the state average and far below the Healthy People 2020 goal of 60.6% (Table 18). Data for NYS (excl NYC) were not available until 2008-2010. For that period, the percent of breastfed infants was 28.7%. Thus, it may be that Dutchess County rates are more similar to NYS (excl NYC) than to the entire state, as is usually the case.

Table 18

Percent of Infants in WIC who Were Breastfeeding at 6 Months, Low Socioeconomic Status

Period	Dutchess County	New York State	Healthy People 2020
2005-2007	29.4%	39.0%	
2006-2008	32.2%	40.1%	
2007-2009	33.0%	40.6%	
2008-2010	33.7%	39.7% *	

Data Source: NYSDOH Health Indicators Reports

* For the period 2008-2010, the rate for NYS excl NYC was 28.7%

iii. Oral Health

Limited oral health data are available from the Bureau of Dental Health and NYS Oral Health Surveys.

Table 19

3rd Grade Children with Evidence of Tooth Decay

Indicator	Data Years	Dutchess County	New York State
% of children of 3 rd grade children with evidence of untreated tooth decay	2002-2004	32.1%	33.1%
	2009-2011	20.5%	24.0%

Data Source: Bureau of Dental Health data obtained through NYSDOH

Fluoridated water offers significant oral health benefits and low health risks. It is of particular importance in high poverty areas where access to dental care can be a problem. The 3rd grade surveys showed a higher incidence of caries among children of lower socioeconomic status.

iv. Screening for Syphilis and HIV

While NYS mandates the screening of pregnant women and newborns for syphilis, the overall rise in primary and secondary syphilis underscores the importance of getting women into prenatal care, especially in the first trimester. Additional information on congenital syphilis can be found under *Communicable Diseases – Syphilis*.

Since 1999, NYS has required expedited HIV testing of pregnant women in labor or their newborns if the mother was not been tested during pregnancy or no intra-pregnancy test result is available. HIV testing of pregnant women is strongly advised during prenatal care but women at highest risk for HIV often don't get prenatal care or don't have access to ongoing care during their pregnancy.

v. Immunization

Childhood immunization data are presented under *Communicable Diseases – Prevention and Vaccines*.

3. Chronic Diseases

a. Leading Causes of Death and Premature Mortality

Chronic diseases make up the four leading causes of death in Dutchess County and statewide (Tables 20-21). In particular, diseases of the heart (including coronary artery disease and heart attack) and cancer (all forms) are the two most common categories, accounting for 35% and 21% of deaths respectively in Dutchess County in 2011. From 2008-2011 the overall age and sex-adjusted³ annual mortality (death) rate in Dutchess County was comparable with the rest of New York State, excluding New York City. However, the statewide average death rate (excluding NYC) appeared to decline between 2008 and 2011 (Table 21), whereas there was no pattern of change in Dutchess County.

One measure of premature mortality is Years of Potential Life Lost (YPLL), calculated as the number of years lost before age 75. YPLL weights deaths at younger ages more heavily than deaths at older ages; the younger the age at death, the greater the number of years of potential life lost. The number of YPLLs per 100,000 in Dutchess County was just below the statewide average excluding NYC from 2008-2011 (Figure 20). Another measure used in the NYS Prevention Agenda is percent of deaths occurring before age 65 (Table 22). There are significant disparities in premature mortality by race and ethnicity; Non-Hispanic Black residents are twice as likely to die before age 65 as Non-Hispanic White residents, and Hispanic residents are more than twice as likely to die before age 65 as Non-Hispanic Whites. The overall rate of premature mortality in Dutchess County did not differ from the statewide average in 2008-2010. The NYS Prevention Agenda 2017 Objective for premature mortality (overall) is 21.8% or fewer, with additional goals to reduce the disparities between Non-Hispanic Blacks and Whites, and between Hispanics and Non-Hispanic Whites.

³ Age and sex-adjusted rates calculated by NYSDOH as the average of the age-sex-specific death rates of the same group, weighted to a standard population. In this report, the standard population is the United States population as enumerated by the Bureau of the Census on April 1, 2000. Adjusted rates allow for better comparison between regions that have different distributions of ages; e.g., regions that have a larger population of older adults tend to have higher unadjusted mortality rates.

Table 20
Age and Sex Adjusted Leading Death Rates per 100,000 by Year
Dutchess County

2008	2009	2010	2011
Total 670.0	Total 689.6	Total 650.6	Total 698.8
Heart Disease 195.0	Heart Disease 188.7	Heart Disease 198.3	Heart Disease 246.5
Cancer 165.0	Cancer 171.4	Cancer 183.9	Cancer 144.2
CLRD ⁴ 44.5	CLRD 42.7	CLRD 40.7	Stroke 29.6
Stroke 26.0	Stroke 25.0	Stroke 32.9	CLRD 27.9
Unintentional Injuries 24.9	Unintentional Injuries 22.2	Unintentional Injuries 30.3	Unintentional Injuries 26.3
Pneumonia 16.5	Pneumonia 13.6	Pneumonia 15.1	Diabetes 18.6
Diabetes 14.6	Diabetes 14.1	Diabetes 13.1	Pneumonia 11.7
Suicide 8.9	Suicide 7.2	Suicide 12.8	Suicide 11.7
Cirrhosis 2.8	Cirrhosis 5.3	Cirrhosis 8.1	Cirrhosis 7.1
Homicide 2.4	Homicide 3.0	Homicide 4.7	HIV/AIDS 3.2
HIV/AIDS 2.7	HIV/AIDS 1.4	HIV/AIDS 1.0	Homicide 2.2

Data Source: NYSDOH, Vital Statistics

⁴ Chronic Lower Respiratory Disease

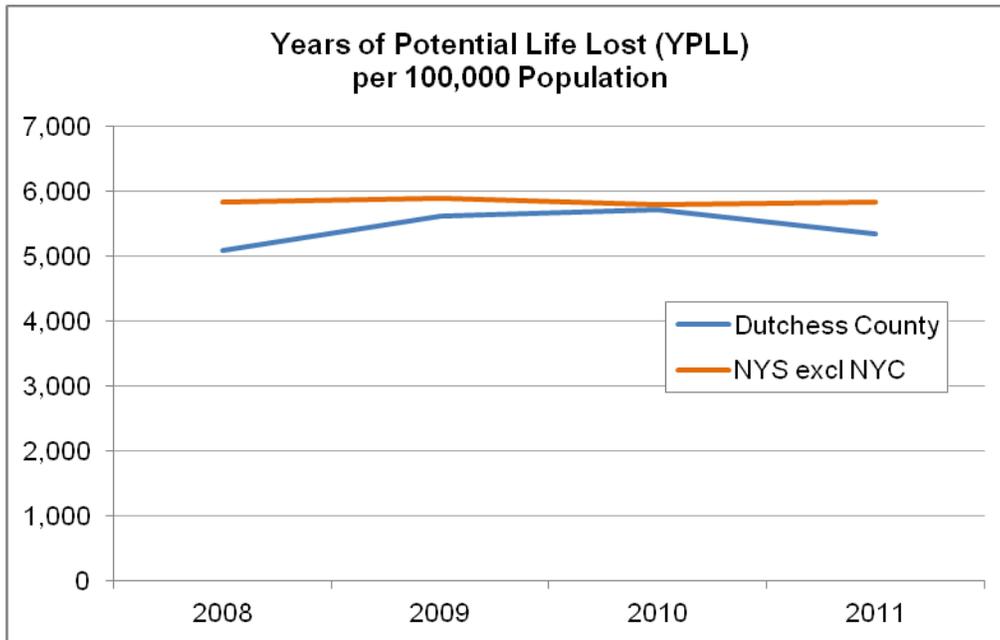
Table 21
Age and Sex Adjusted Leading Death Rates per 100,000 by Year
New York State Excluding NYC

2008	2009	2010	2011
Total 701.5	Total 682.0	Total 672.7	Total 672.6
Heart Disease 201.7	Heart Disease 187.4	Heart Disease 185.3	Heart Disease 183.5
Cancer 172.8	Cancer 167.0	Cancer 165.1	Cancer 161.4
CLRD ⁵ 38.9	CLRD 37.7	CLRD 36.3	CLRD 36.2
Stroke 31.4	Stroke 30.8	Stroke 31.6	Stroke 30.0
Unintentional Injuries 28.1	Unintentional Injuries 23.4	Unintentional Injuries 26.9	Unintentional Injuries 29.6
Pneumonia 16.2	Pneumonia 15.2	Pneumonia 14.8	Pneumonia 15.5
Diabetes 14.7	Diabetes 15.0	Diabetes 13.9	Diabetes 15.5
Suicide 8.0	Suicide 7.0	Suicide 9.1	Suicide 9.7
Cirrhosis 6.5	Cirrhosis 6.0	Cirrhosis 6.8	Cirrhosis 7.0
Homicide 3.0	Homicide 3.2	Homicide 3.3	Homicide 2.7
HIV/AIDS 1.8	HIV/AIDS 1.5	HIV/AIDS 1.4	HIV/AIDS 1.2

Data Source: NYSDOH, Vital Statistics

⁵ Chronic Lower Respiratory Disease

Figure 20



Data Source: NYSDOH, Community Health Indicator Reports

Table 22

Percent of Deaths Occurring Before Age 65 Years by Race/Ethnicity, 2008-2010

	Dutchess County	New York State
Overall	23.8%	24.3%
Non-Hispanic White	21.0%	19.2%
Non-Hispanic Black	42.9%	40.9%
Hispanic	48.1%	41.1%

Data Source: NYSDOH, Prevention Agenda Tracking Indicators

b. Cardiovascular Diseases

Cardiovascular disease (CVD) is a general category of diseases that involve the heart and the circulatory system (arteries, veins, and capillaries). It includes, but is not limited to, coronary heart disease (or coronary artery disease), heart rhythm problems (arrhythmias), cerebrovascular disease (stroke), and heart failure. In addition, some heart disease is related to heart defects that are present at birth or develop as people age.

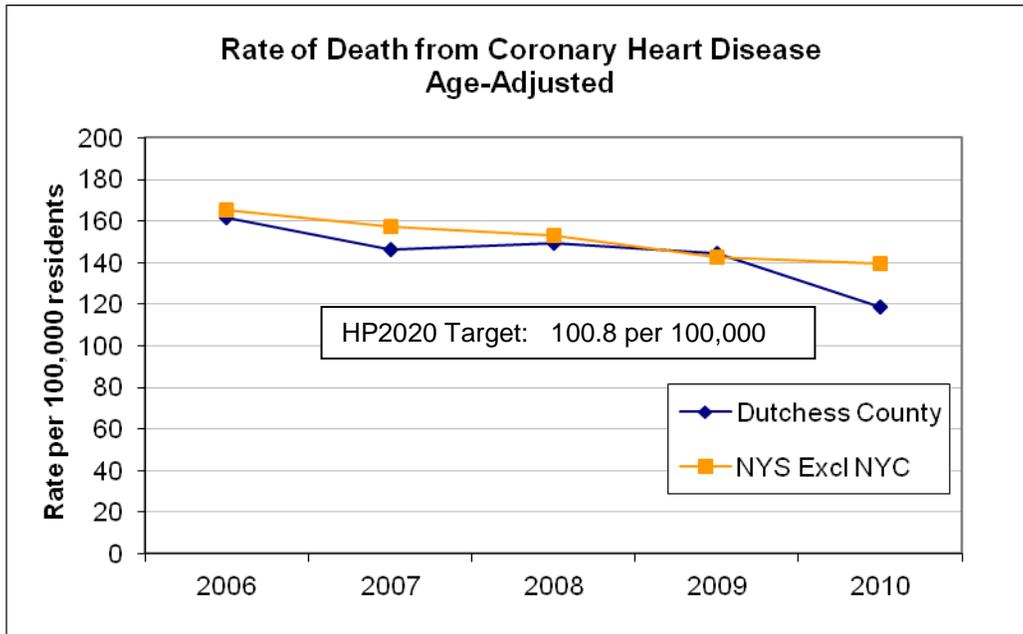
Atherosclerosis, or hardening of the arteries, is the most common cause of cardiovascular disease. The primary risk factors include age, gender, high blood pressure

(hypertension), high cholesterol, smoking, excessive alcohol consumption, family history of heart disease, obesity, and lack of physical activity. These risk factors may also lead to conditions that promote arrhythmias, in addition to stress, drug abuse, excessive use of caffeine, and certain medications or dietary supplements. Infections, including endocarditis and myocarditis, also contribute to heart disease.

i. Coronary Heart Disease (Coronary Artery Disease)

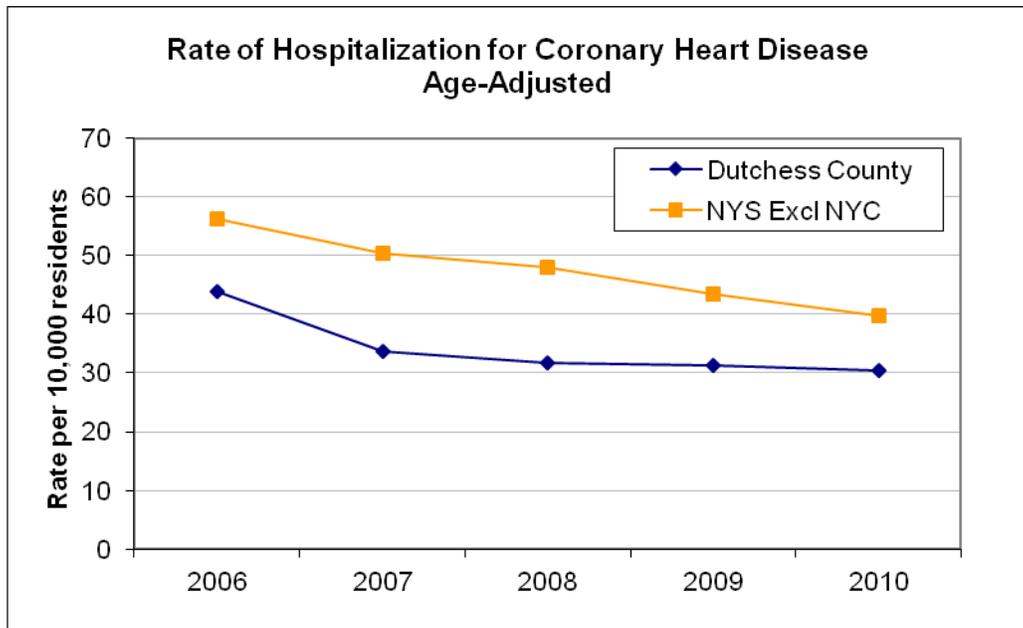
The rates of death (Figure 21) and hospitalization (Figure 22) due to coronary heart disease (thickening or blockage of the major blood vessels of the heart) are continuing a downward trend among Dutchess County residents and the rest of NYS residents. Dutchess County rates are slightly lower than the statewide average excluding NYC. As of 2010, Dutchess County was on track to meet the Healthy People 2020 target goal of 100.8 or fewer deaths per 100,000 population.

Figure 21



Data Source: NYSDOH Community Health Indicators

Figure 22



Data Source: NYSDOH Community Health Indicators

Hispanics had lower rates of death from coronary heart disease in 2008-2010 than Non-Hispanics, both in Dutchess County and statewide. The rate of hospitalization for coronary

heart disease was also lower among Hispanics in Dutchess County, but higher among Hispanics on average statewide, excluding NYC (Table 23).

Table 23
Death and Hospitalization for Coronary Heart Disease by Race/Ethnicity, 2008-2010

	Dutchess County	NYS excl NYC
<i>Deaths (per 100,000)</i>	136.9	145.1
Non-Hispanic White	136.3	143.5
Non-Hispanic Black	154.3	167.6
Hispanic	100.7	100.2
<i>Hospitalizations (per 10,000)</i>	31.1	43.7
Non-Hispanic White	28.8	41.4
Non-Hispanic Black	28.7	42.0
Hispanic	19.8	48.0

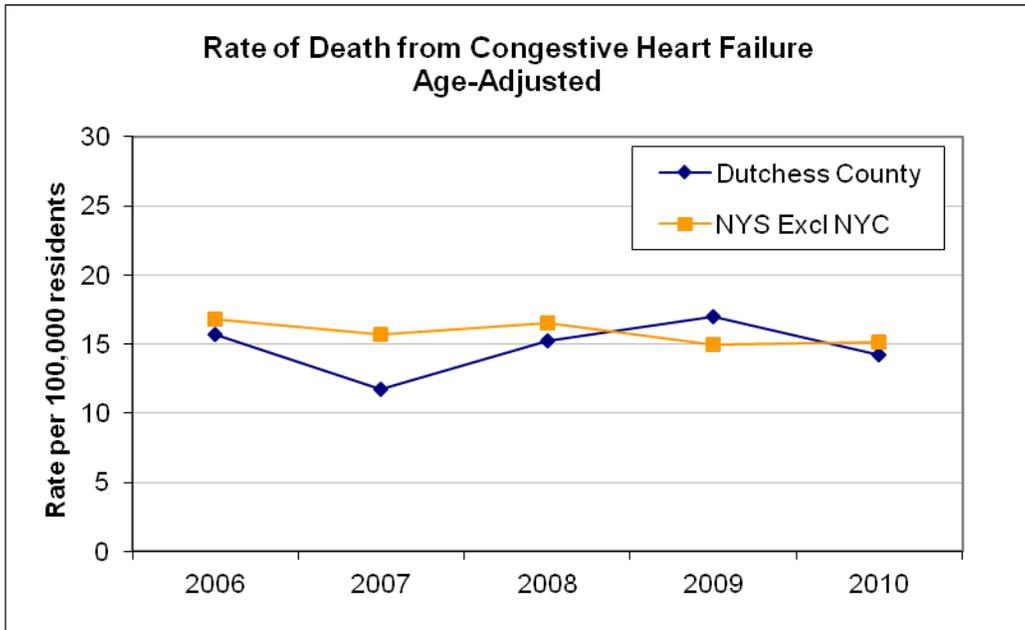
Data Source: NYSDOH Community Health Indicators by Race and Ethnicity

ii. Congestive Heart Failure

Heart failure is characterized by insufficient pumping of the heart muscle, which can be the result of other conditions that damage the heart such as coronary heart disease. Congestive heart failure occurs when blood is not able to circulate properly and pools in other organs and the extremities.

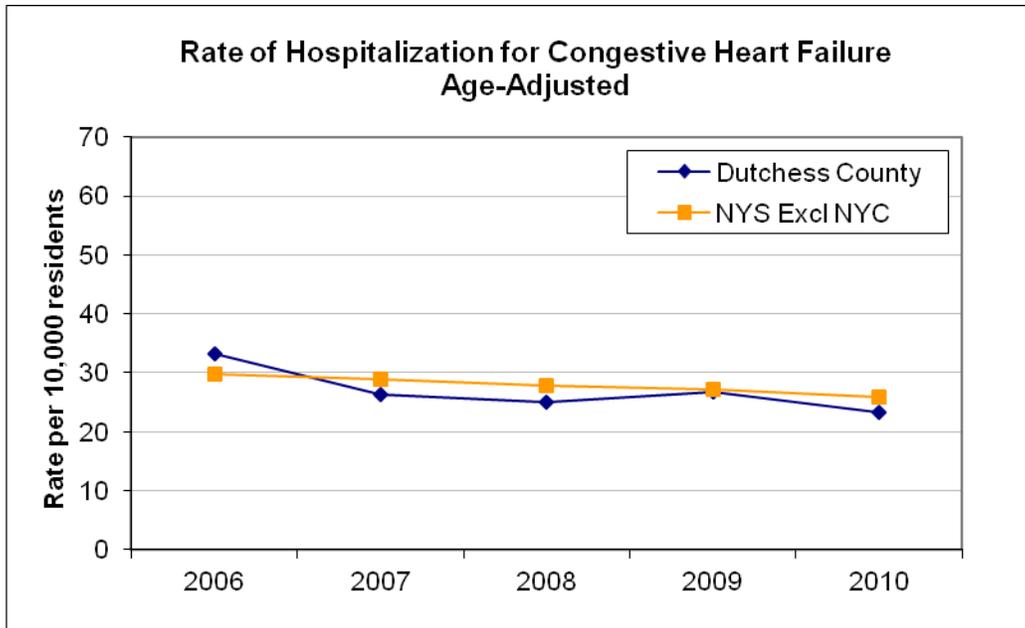
The rates of death from congestive heart failure did not differ between Dutchess County and the rest of NYS excluding NYC (Figure 23), and remained stable between 2006 and 2010. The rate of hospitalizations, however, did appear to decline very gradually (Figure 24). Healthy People 2020 sets age-specific targets for congestive heart failure-related hospitalizations, however county level age-specific rates were not available for comparison at the time of publication.

Figure 23



Data Source: NYSDOH Community Health Indicators

Figure 24



Data Source: NYSDOH Community Health Indicators

Heart failure death rates were highest among Non-Hispanic Whites, and hospitalization rates were higher among Non-Hispanic Whites and Blacks compared to Hispanics (Table 24).

Table 24
Death and Hospitalization for Congestive Heart Failure by Race/Ethnicity, 2008-2010

Measure	Dutchess County	NYS excl NYC
<i>Deaths (per 100,000)</i>	22.0	25.6
Non-Hispanic White	26.8	29.7
Non-Hispanic Black	4.7*	12.2
Hispanic	5.3*	4.8
<i>Hospitalizations (per 10,000)</i>	34.9	41.7
Non-Hispanic White	37.6	42.7
Non-Hispanic Black	34.0	53.8
Hispanic	9.1	23.2

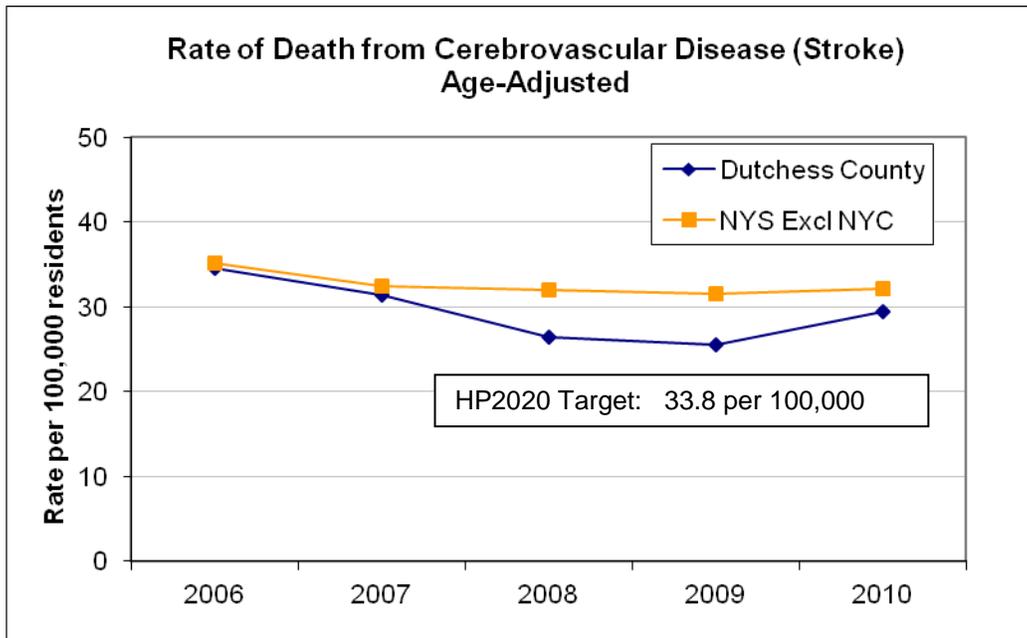
Data Source: NYSDOH Community Health Indicators by Race and Ethnicity
 *Numerator < 20, rate may be unstable

iii. Cerebrovascular Disease (Stroke)

Cerebrovascular disease, or stroke, is caused by the blockage of blood supply to part of the brain, either as a result of a blocked artery (ischemic stroke) or a leaking or burst blood vessel (hemorrhagic stroke).

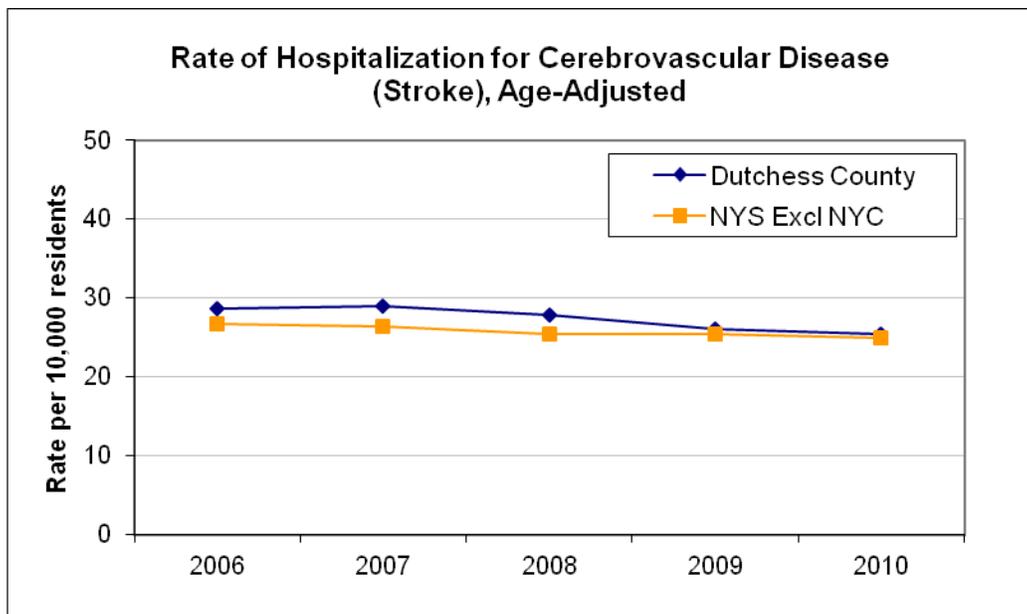
The rates of death from stroke have declined over time, but appeared to level off between 2007 and 2010. Dutchess County residents have slightly lower rates of stroke death than the NYS average excluding NYC (Figure 25), and since 2007 have been lower than the HP2020 target. Hospitalization rates were not different from the statewide average, which experienced a very modest decline from 2006-2010 (Figure 26).

Figure 25



Data Source: NYSDOH Community Health Indicators

Figure 26



Data Source: NYSDOH Community Health Indicators

Non-Hispanic Blacks had the highest rates of stroke mortality and hospitalization from 2008-2010 (Table 25).

Table 25
Death and Hospitalization from Stroke by Race and Ethnicity, 2008-2010

Measure	Dutchess County	NYS excl NYC
<i>Deaths (per 100,000)</i>	27.2	25.3
White, Non-Hispanic	26.6	23.3
Black, Non-Hispanic	32.4	37.7
Hispanic	24.6*	28.5
<i>Hospitalizations (per 10,000)</i>	26.4	31.9
White, Non-Hispanic	24.4	31.2
Black, Non-Hispanic	35.7	39.3
Hispanic	12.0	23.4

Data Source: NYSDOH Community Health Indicators by Race and Ethnicity

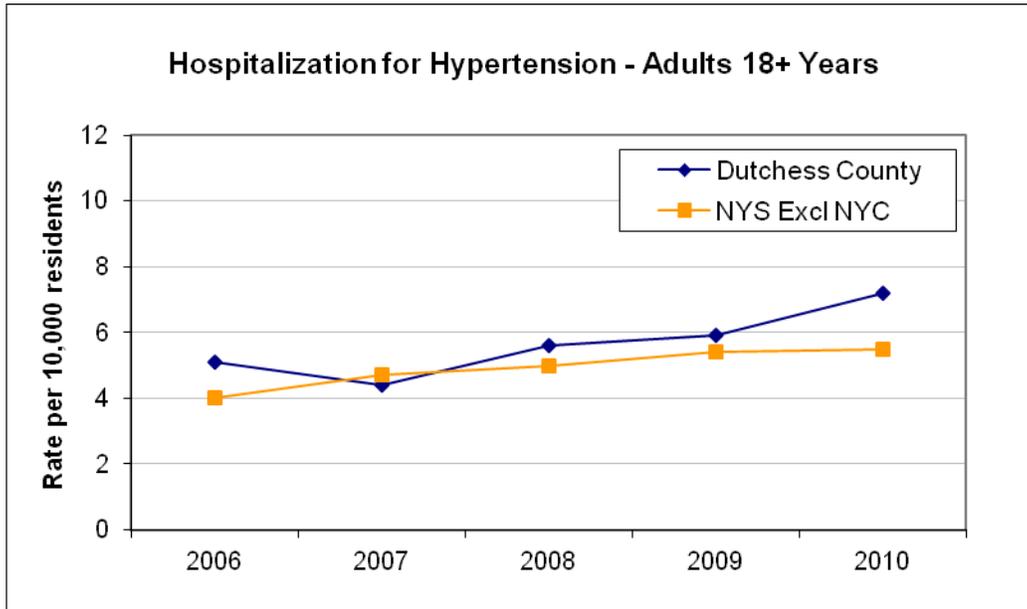
*Numerator < 20, rate may be unstable

iv. Hypertension (High Blood Pressure)

High blood pressure, or hypertension, is a common condition that can lead to cardiovascular disease and death if uncontrolled. Most cases of high blood pressure tend to develop slowly over time, with risk factors including age, race, family history, obesity, lack of physical activity, smoking, high sodium diets, low potassium diets, low vitamin D diets, excessive alcohol consumption, and stress. Underlying conditions including kidney problems, adrenal tumors, birth defects can lead to increased blood pressure, and some medications and illegal drugs (stimulants) can cause very sudden increases in blood pressure.

The rate of hospitalization for hypertension has been increasing since 2006, both among Dutchess residents and NYS residents as a whole, excluding NYC (Figure 27). Data were not available by race or ethnicity at the time of publication.

Figure 27



Data Source: NYSDOH Community Health Indicators

In 2008, 29.1% of Dutchess County adults reported having ever been told by a health professional that they had high blood pressure, which was not significantly different from the statewide average. The Healthy People 2020 target goal is 26.9%.

Table 26

Told by a Health Professional they had High Blood Pressure (Adults 18+ Years)

Group	Dutchess County	New York State
Total (age-adjusted)	29.1%	25.7%
-Male	29.1%	27.7%
-Female	29.1%	23.8%
<i>Age-specific rates:</i>		
-18-34 yrs	*	7.0%
-35-44 yrs	15.4%	14.8%
-45-54 yrs	37.2%	30.3%
-55-64 yrs	49.7%	41.6%
-65+ yrs	58.7%	58.5%

Data Source: EBRFSS 2008-2009

**Data did not meet reporting criteria due to small numbers*

c. Cancer

Cancer is a term for a group of more than 100 diseases in which abnormal cells divide without control and invade other tissues. Although each type of cancer is unique, the development of cancer begins the same way, when the genetic material of a cell changes or becomes damaged, causing excessive cell growth and/or the inhibition of normal cell death. The extra cells may form a mass of tissue called a tumor. *Benign* tumors do not spread to other parts of the body. *Malignant* tumors are cancerous and can shed cancer cells to nearby tissues and other parts of the body to form new tumors (metastasis). Some cancers do not form tumors. For example, leukemia is a cancer of the bone marrow and blood.

Cancer is a complicated multistep process that usually takes decades to reach a malignant state. For instance, epidemiologists observed a sharp increase in lung cancer among women in the 1970's, about 20 to 25 years after cigarette smoking became widespread among women. Known *carcinogens*, or agents capable of causing mutations that can potentially lead to cancer, include certain chemicals (such as the components of cigarette smoke), radioactive materials, and some infectious disease agents such as human papilloma virus, which is associated with cervical cancer. Inherited genetic mutations and other traits can also cause individuals and families to be more susceptible to different cancers. Progress in cancer research, especially over the past 40 years, continues to shed more light on the complex causes and development of cancer, bringing forth new treatments as well as tools to diagnose cancer at an early stage (*National Institute of Health/National Cancer Institute, Understanding Cancer*).

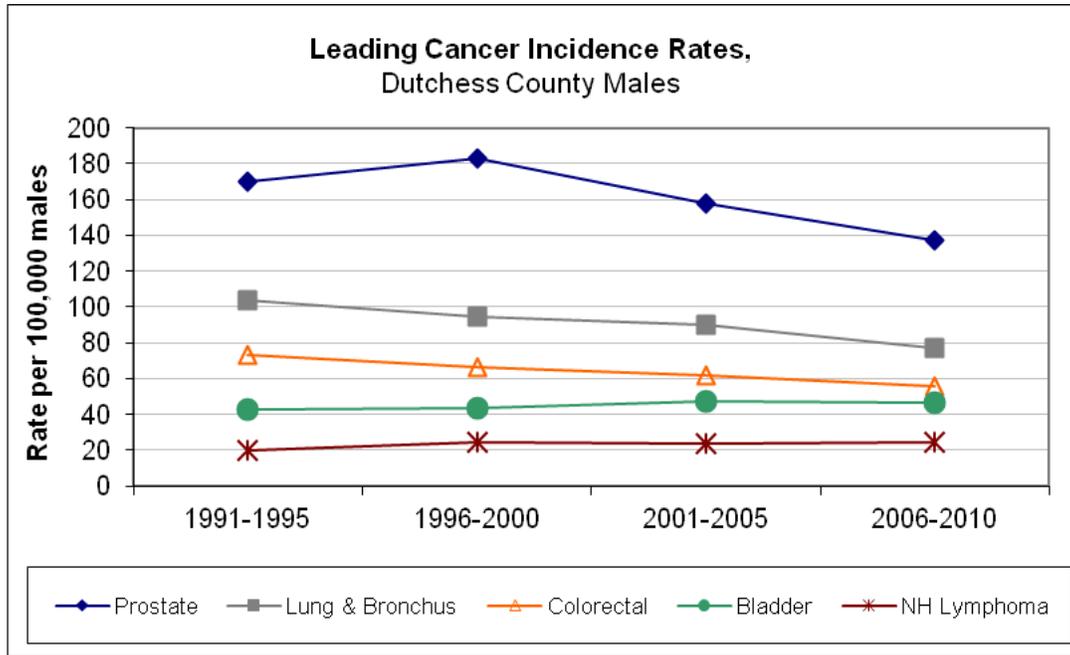
i. Cancer Incidence Trends

Males

The incidence (first time diagnosis) rate of prostate cancer among males in Dutchess County was almost twice as high as the incidence of lung and bronchus cancers, the next most common form of cancer in males. The incidence of prostate cancers peaked in 1996-2000 and declined over the past decade. The incidence of lung cancer in males also declined steadily over

the past two decades. Colorectal cancers were the third most common type of cancer in males, and their incidence rate likewise declined since the early 1990's. Bladder cancer was the fourth leading type of cancer in males, followed by non-Hodgkins lymphoma (Figure 28).

Figure 28

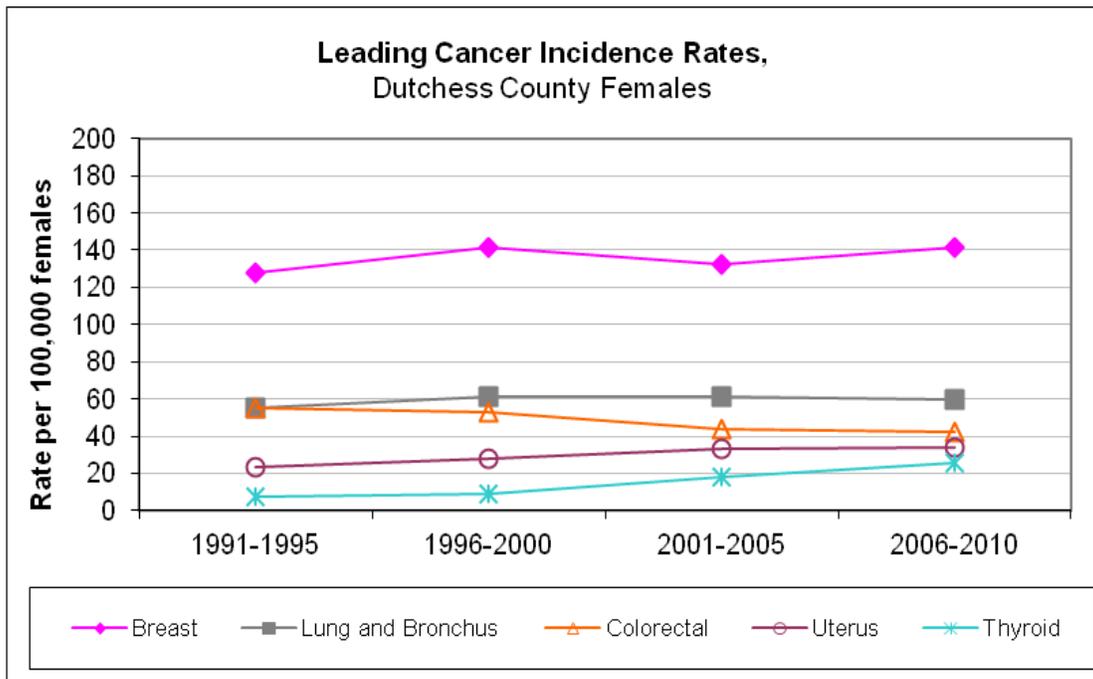


Data Source: NYS Cancer Registry

Females

Among females, breast cancer was the leading cancer incidence, with rates twice as high as lung cancer incidence rates, the next leading form of cancer in females. There was no remarkable trend in the incidence of either breast cancer or lung cancer over the time period 1991-2010. However, the incidence of colorectal cancers, the third leading type of cancer found in females, declined as it did among males. The incidence rates of uterine cancer and thyroid cancer, meanwhile, both increased in females – a trend that has been observed statewide and nationally (Figure 29).

Figure 29



Data Source: NYS Cancer Registry

ii. Cancer Mortality Trends

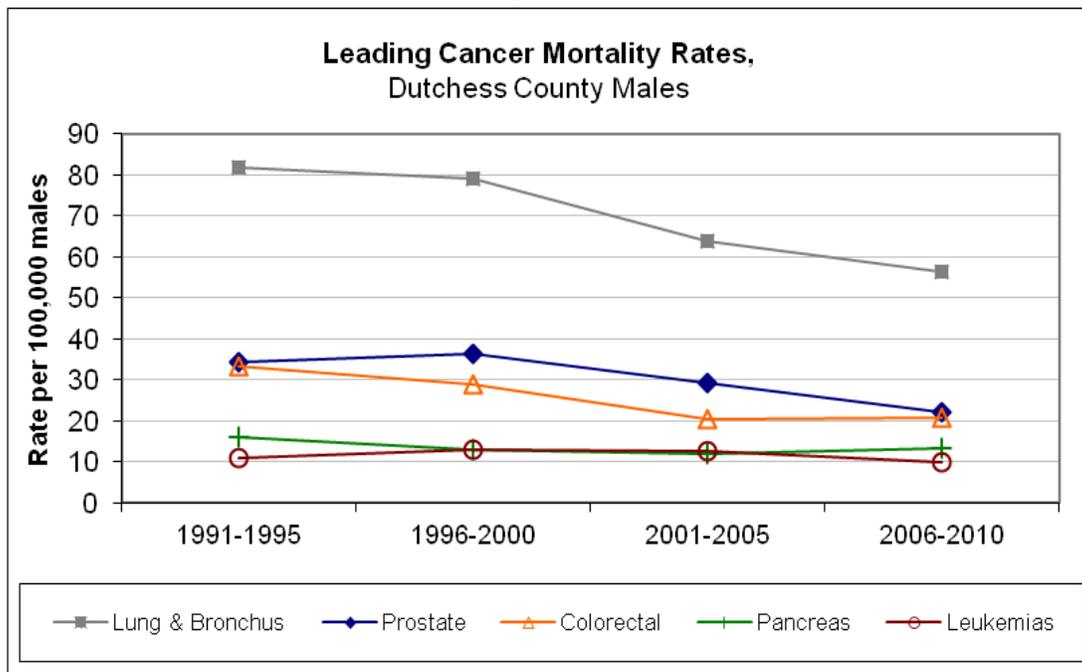
As shown in Table 20, the overall average mortality rate from all cancers from 2008-2011 was 166.1 deaths per 100,000 residents of Dutchess County. The Healthy People 2020 target is 160.6 or fewer deaths per 100,000 residents.

Similar to state and national trends, lung and bronchus cancers were the leading cause of cancer mortality in both males (Figure 30) and females (Figure 31). The rate of lung cancer mortality in Dutchess County males dropped substantially over the past two decades and was on track to reach the Healthy People 2020 target (45.5 deaths per 100,000 males), but was still slightly higher than the rate in females. In males, prostate cancer was the next leading cause of cancer-related death, followed by colorectal cancer, both of which also declined over the time period and were on track to reach the Healthy People 2020 targets (for prostate cancer: 21.2 deaths per 100,000 males and for colorectal cancer: 14.5 deaths per 100,000 population). The

rates of death from pancreatic cancer and leukemias, the fourth and fifth leading causes of cancer mortality in males, did not change from 1991-2010.

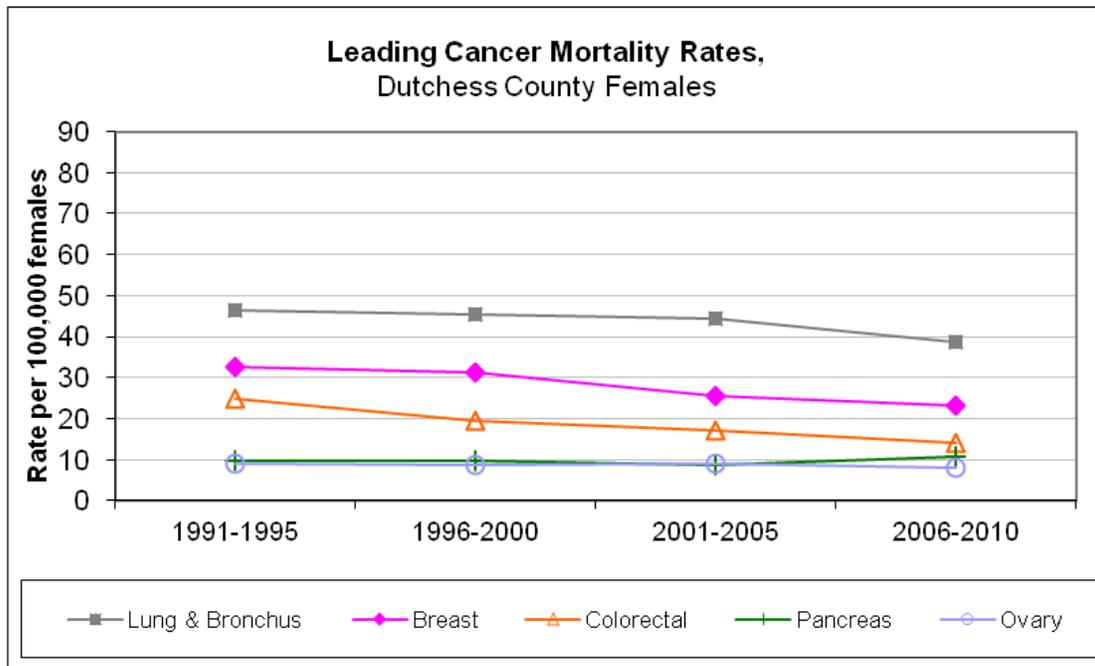
Among females, breast cancer was the second leading cause of cancer mortality after lung cancer, followed again by colorectal cancers and pancreatic cancers, and next by ovarian cancer (Figure 29). Breast cancer mortality rates in females were also on the decline, and consistent with the Healthy People 2020 target of 20.6 deaths per 100,000 females. Colorectal cancer mortality was likewise declining in women, and nearing the 2020 goal of 14.5 or fewer deaths per 100,000 population.

Figure 30



Data Source: NYS Cancer Registry

Figure 31



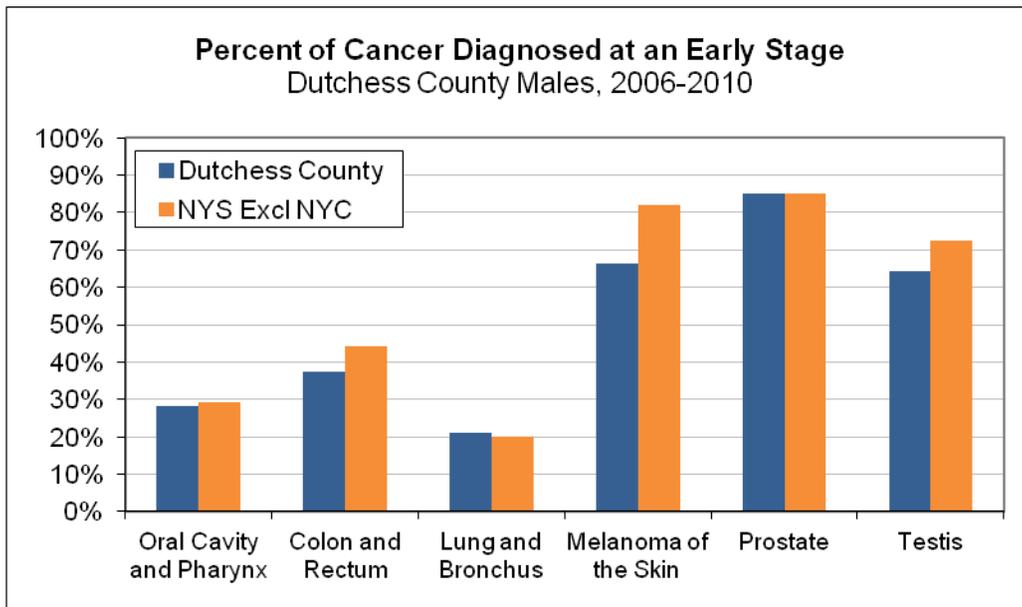
Data Source: NYS Cancer Registry

iii. Early Detection

The earlier cancers are diagnosed, the greater the odds of remission and survival. Screening tools such as colonoscopies, mammograms, Pap smears, and prostate exams have increased the rate at which colorectal, breast, cervical, and prostate cancers are diagnosed early, respectively. Pancreatic cancer is an example of a type of cancer that is relatively rare but has a high mortality rate due to the difficulty of early detection.

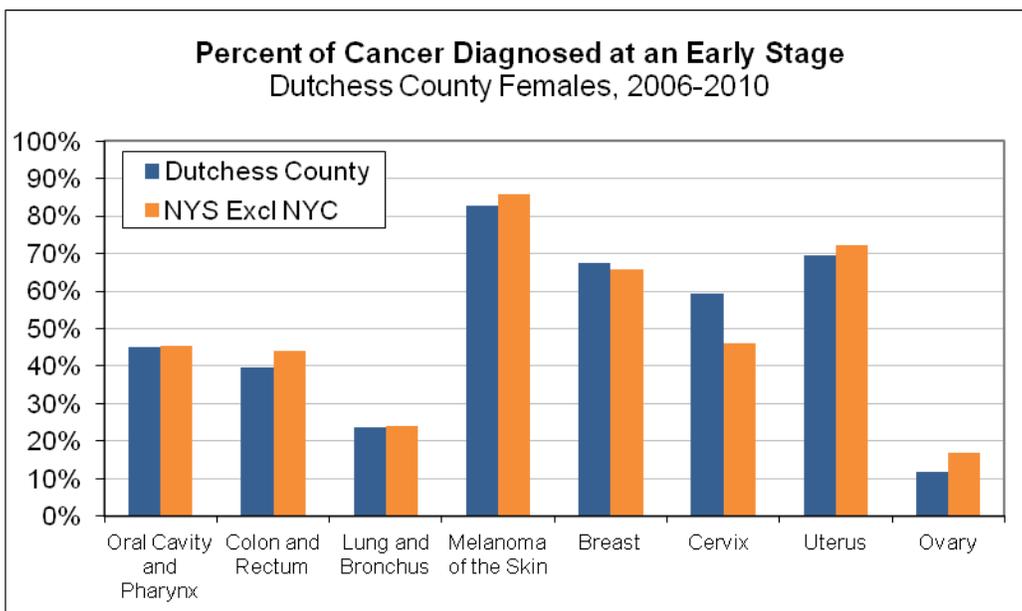
From 2006-2010, Dutchess County males were somewhat less likely to be diagnosed early for colorectal cancers, melanomas of the skin, and testicular cancer compared with the statewide averages for these cancers (Figure 32). Dutchess County females were also slightly less likely to be diagnosed early for colorectal cancers and melanomas, but more likely to be diagnosed early with cervical cancer (Figure 33). However, the reverse was true for cervical cancer from 2001-2005 (*NYS Cancer Registry*), so there may be some random variation due to small numbers.

Figure 32



Data Source: NYS Cancer Registry

Figure 33

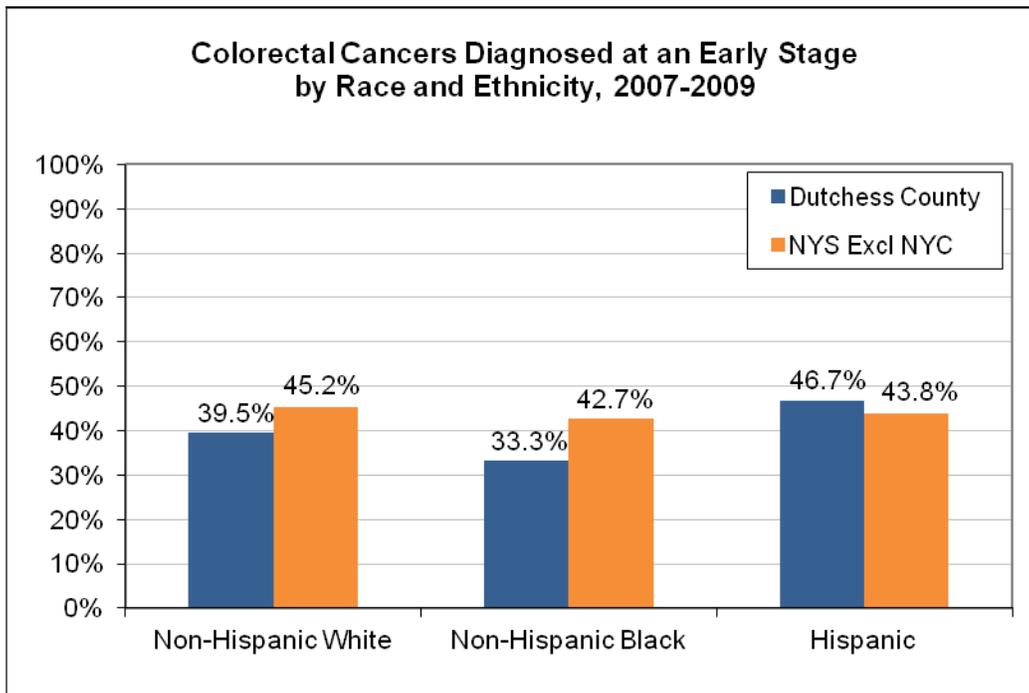


Data Source: NYS Cancer Registry

From 2007-2009, Non-Hispanic Black residents were slightly less likely to receive an early diagnosis of colorectal cancer than were Non-Hispanic Whites and Hispanic residents (Figure 34). Non-Hispanic Black females were significantly less likely to be diagnosed with breast cancer at an early stage compared with Non-Hispanic White females (Figure 35). It should be noted that for both charts, Black and Hispanic cases in Dutchess County totaled less than 20 persons and therefore the percentages may be unstable. Nonetheless, the patterns mirrored the rest of NYS excluding NYC.

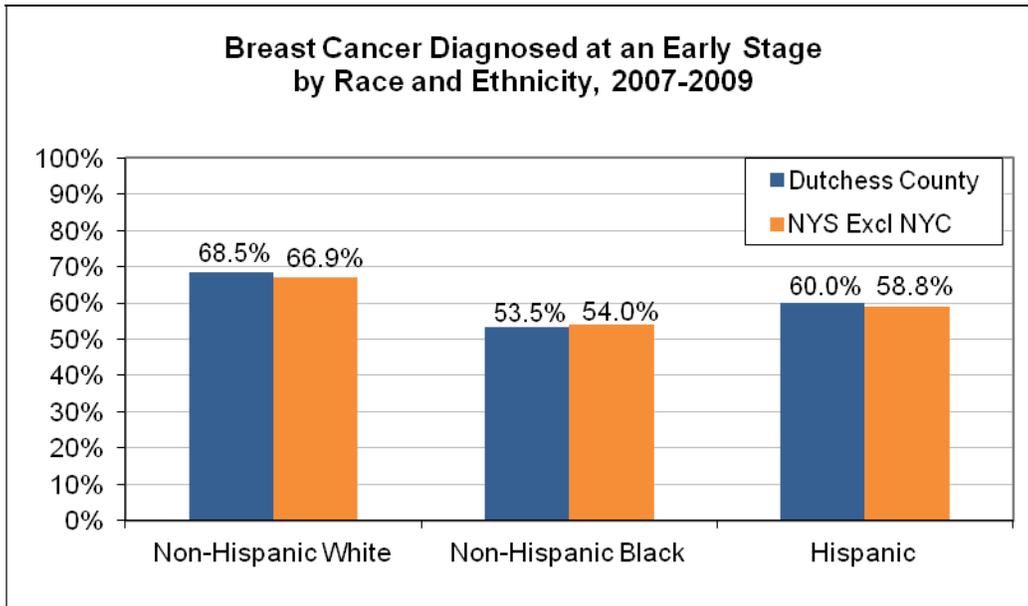
Cancer screening statistics are found in under the topic of *Chronic Disease - Risk Factors and Preventive Care*.

Figure 34



Data Source: NYSDOH Community Health Indicators by Race and Ethnicity

Figure 35



Data Source: NYSDOH Community Health Indicators by Race and Ethnicity

d. Respiratory Diseases

Respiratory diseases are a common cause of illness and are among the five leading causes of death in Dutchess County and New York State. They may be classified either by the part of the lungs and respiratory system involved or by the cause of disease or associated symptoms.

Chronic lower respiratory diseases (CLRD), as categorized by the International Classification of Diseases, include bronchitis, emphysema, asthma, and other chronic obstructive pulmonary diseases (COPD). These conditions are marked by restricted airflow, making breathing difficult.

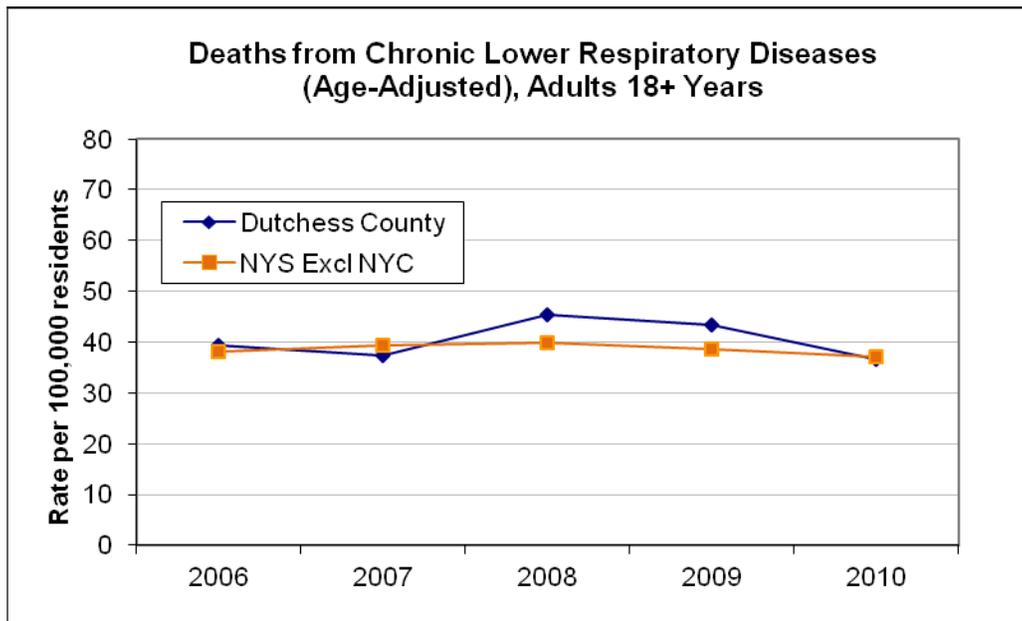
Asthma is diagnosed most commonly during early childhood, and is brought on by inflammation and restriction of the airways (bronchi and bronchioles), causing wheezing, coughing, and shortness of breath. Asthma attacks can be life-threatening. The causes of asthma are not fully understood, but are most likely related to a combination of genetic and environmental factors. There are a variety of known triggers, including airborne allergens like

pollen and dander, respiratory infections, exposure to cold air, allergic reactions to certain foods, and the use of beta-blockers and some pain relievers. Stress and emotional distress may also trigger attacks. Studies suggest that people most at risk for asthma include those who have a close relative with asthma, people who have other allergies, are overweight, smoke or are exposed to secondhand smoke, are exposed to air pollution or certain occupational chemicals, and low birthweight infants (*Mayo Clinic: Asthma*).

i. Chronic Lower Respiratory Diseases in Adults

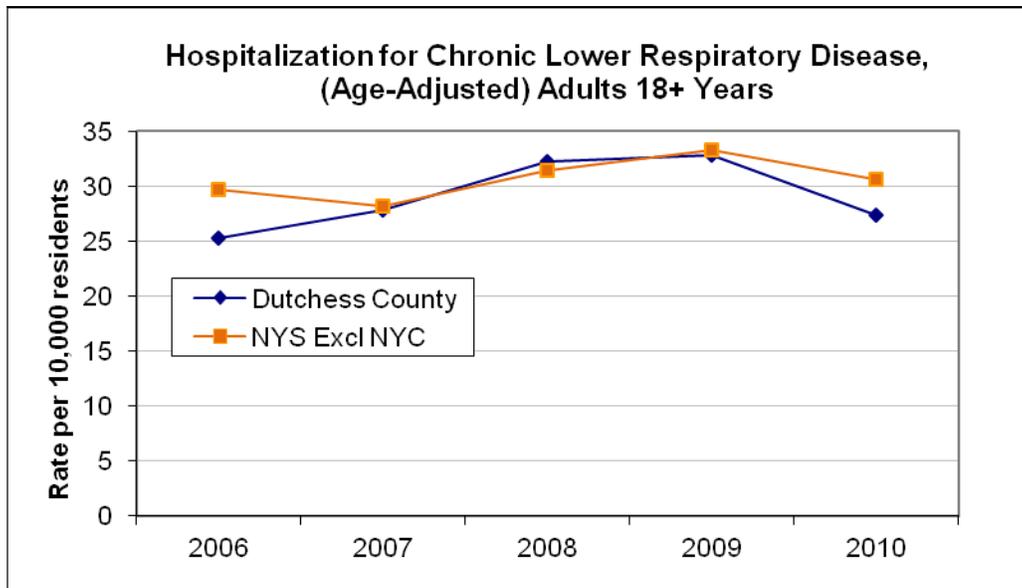
The overall rates of mortality (Figure 36) and hospitalization (Figure 37) from all chronic lower respiratory diseases were similar for Dutchess County residents and statewide residents (excluding NYC), from 2006-2010. There were no remarkable trends during this time period. The Healthy People 2020 goal is calculated specifically for COPD alone in adults 45 years and older, and is therefore not comparable with these data.

Figure 36



Data Source: NYSDOH Community Health Indicators

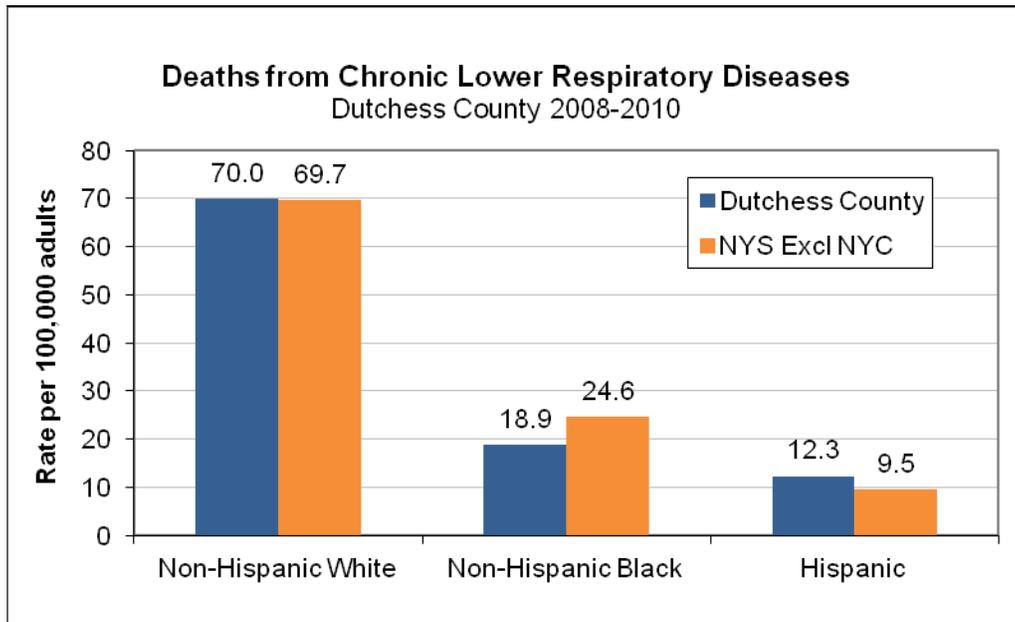
Figure 37



Data Source: NYSDOH Community Health Indicators

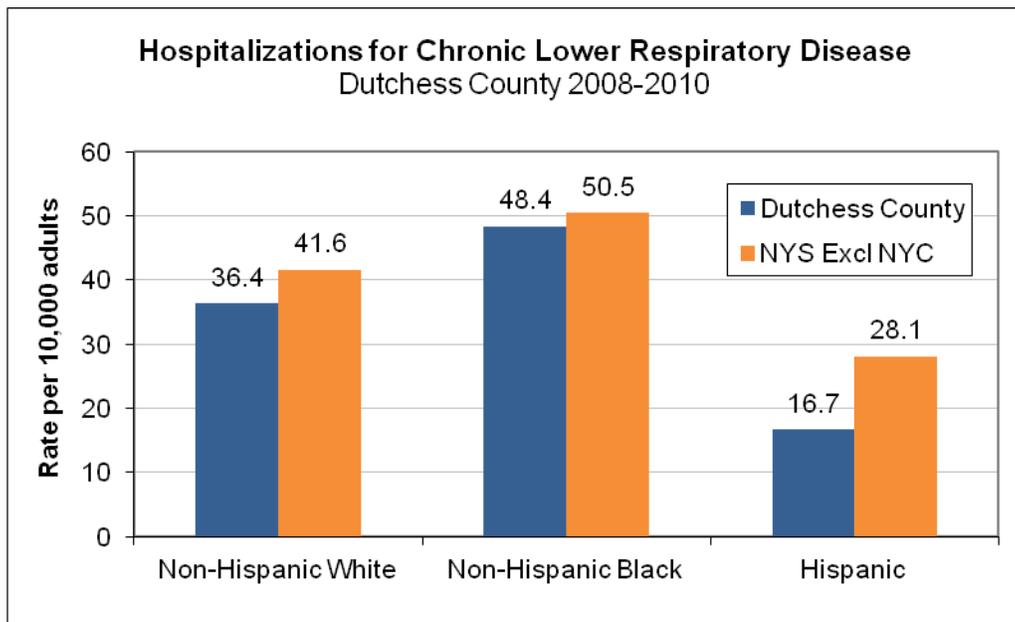
Racial and ethnic disparities in CLRD were not consistent across outcomes. Non-Hispanic White adults had the highest rates of mortality from chronic lower respiratory diseases (Figure 38), while Non-Hispanic Black adults had slightly higher rates of hospitalization (Figure 39) than Non-Hispanic White adults. These patterns were consistent with statewide trends.

Figure 38



Data Source: NYSDOH Community Health Indicators by Race and Ethnicity

Figure 39



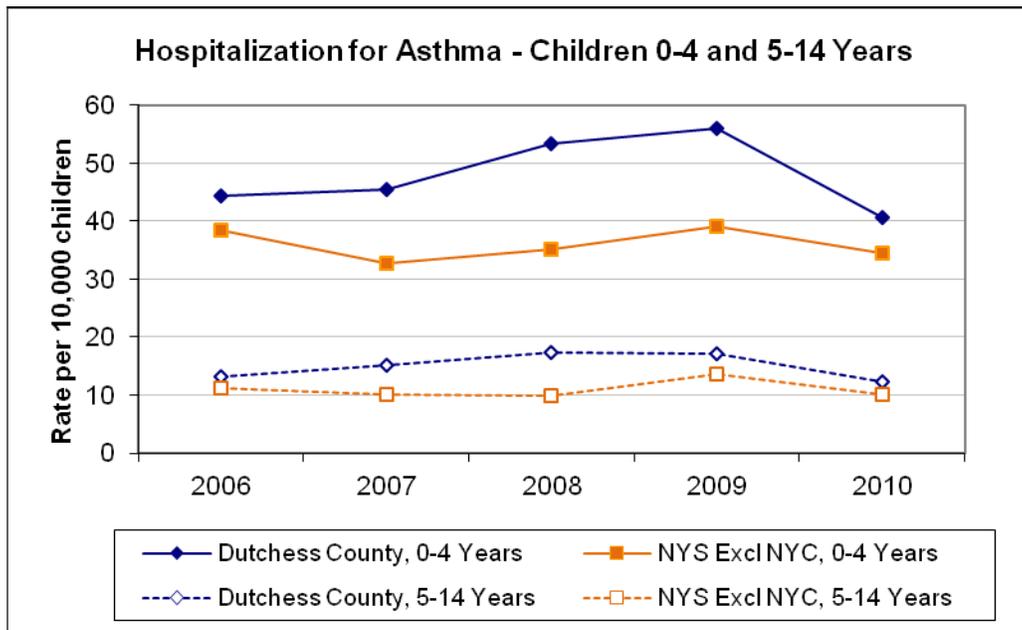
Data Source: NYSDOH Community Health Indicators by Race and Ethnicity

ii. Asthma in Children

The rates of hospitalization for asthma in Dutchess County children tend to be slightly higher than the statewide averages (excluding NYC). Children younger than five years of age have asthma hospitalization rates that are twice as high as children 5-14 years of age. No meaningful trend was observed from 2006-2010 in either age group (Figure 40). Healthy People 2020 published a target of 18.1 or fewer hospitalizations per 10,000 children ages 0-4, which would require significant improvement statewide and in Dutchess County.

There were 84.3 emergency department visits per 10,000 children ages 0-4 years in Dutchess County from 2008-2010, compared to the NYS average (inclusive of NYC) of 221.4 visits per 10,000 young children. The NYS Prevention Agenda 2017 objective is 196.5 or fewer visits per 10,000 children ages 0-4 years, which Dutchess County was already well below.

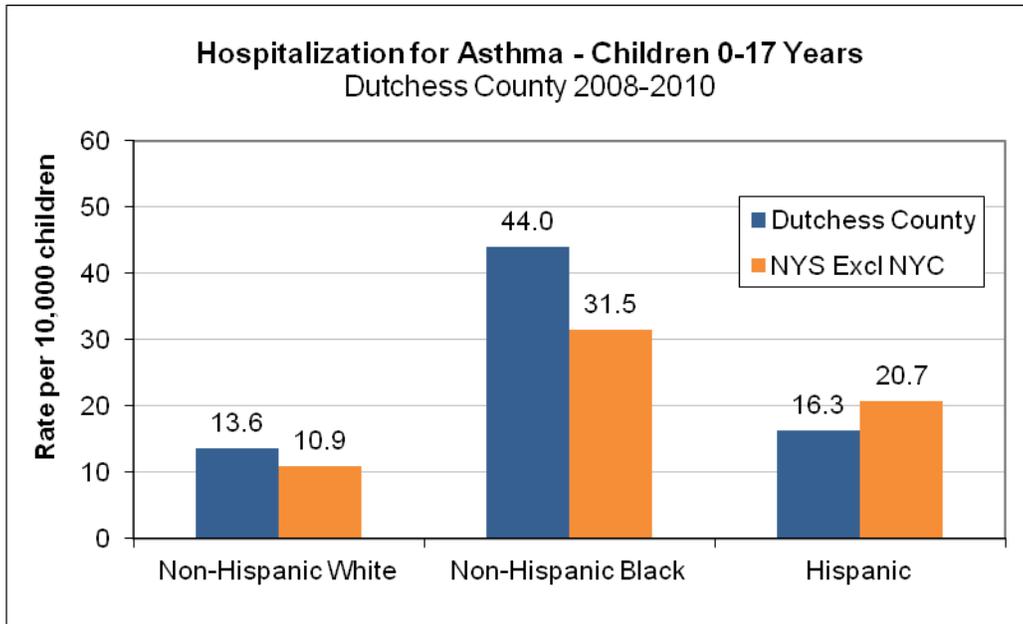
Figure 40



Data Source: NYSDOH Community Health Indicators

Non-Hispanic Black children have the highest rates of hospitalization due to asthma, almost three times higher than Hispanic children and over three times higher than Non-Hispanic White children (Figure 41).

Figure 41



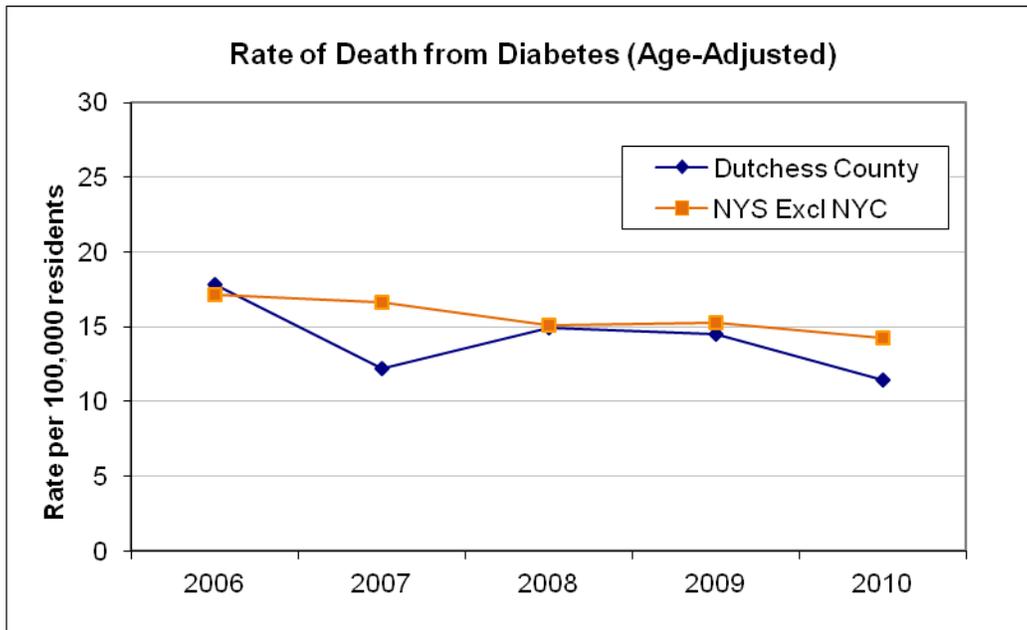
Data Source: NYSDOH Community Health Indicators by Race/Ethnicity

e. Diabetes

There are two forms of diabetes. Type I (*insulin-dependent*) diabetes is usually diagnosed in childhood and occurs when the pancreas is unable to produce the insulin needed for the body to convert sugar into energy, as the result of the immune system attacking its own insulin producing cells. Type II (*non insulin-dependent*) diabetes is usually diagnosed in adulthood and is often associated with excess weight gain and lack of exercise, and occurs when the body becomes resistant to insulin, which causes sugar to build up in the bloodstream.

The rate of deaths from all forms of diabetes appeared to be in a slow decline from 2006-2010, and Dutchess County was not different from the rest of NYS excluding NYC (Figure 42). The Healthy People 2020 target, 65.8 or fewer deaths per 100,000 population, includes all deaths related to diabetes, whereas the data available for this report are based on underlying cause of death and cannot be directly compared with the HP2020 target.

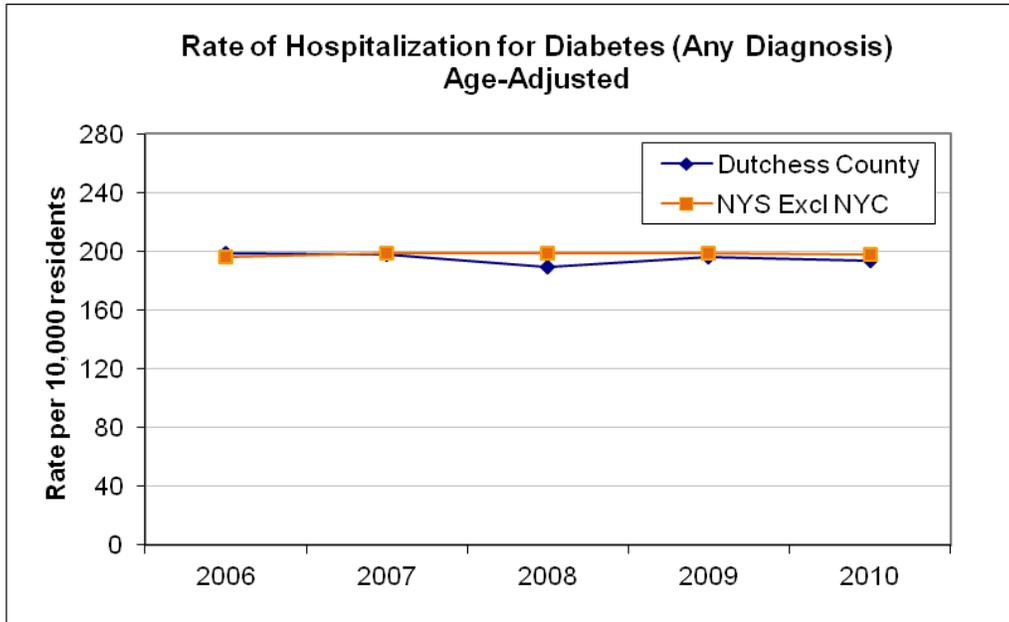
Figure 42



Data Source: NYSDOH Community Health Indicators

The rate of hospitalization for both forms of diabetes, meanwhile, held steady between 2006-2010 (Figure 43) both among Dutchess residents and all NYS residents (excluding NYC). There were approximately 200 admissions for every 10,000 residents each year where diabetes was listed in any diagnostic field, but just under 15 admissions per 10,000 residents where it was the primary diagnosis. This illustrates the frequency of long-term complications related to diabetes, which can impact the cardiovascular system and many other organs.

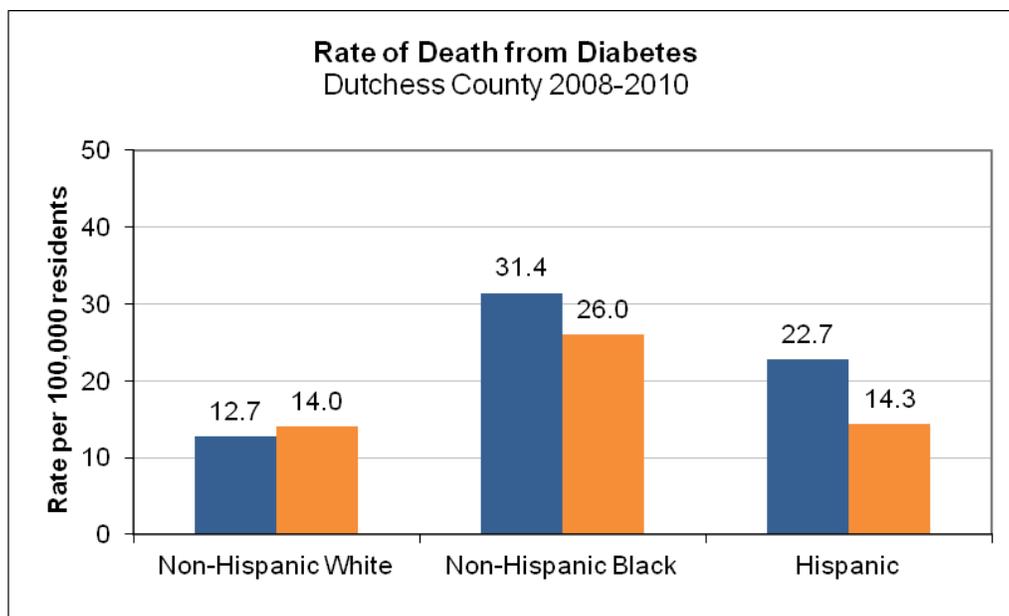
Figure 43



Data Source: NYSDOH Community Health Indicators

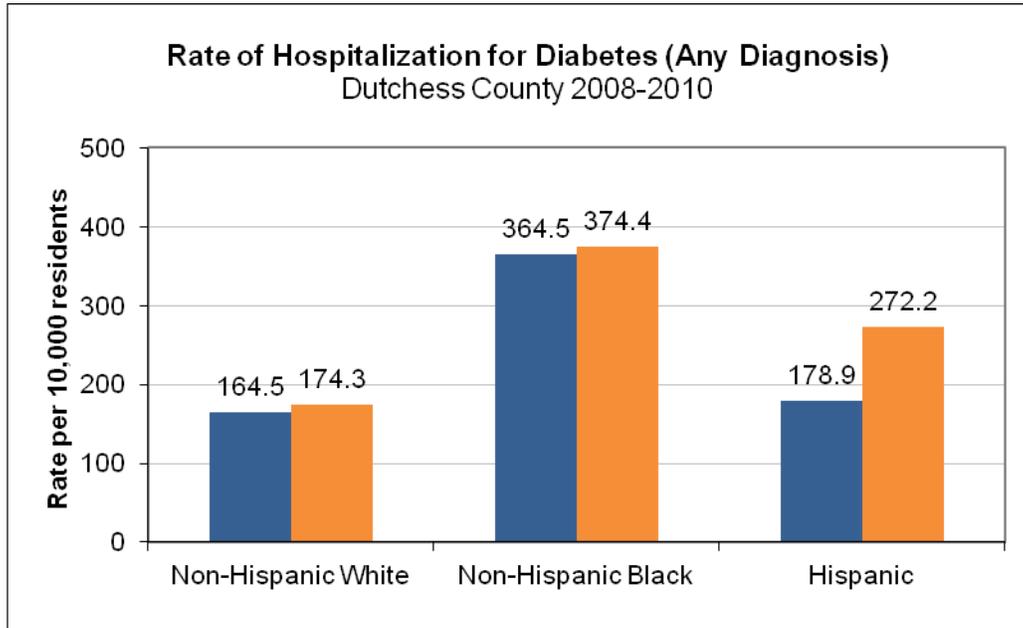
Diabetes mortality and hospitalization rates were both highest among Non-Hispanic Black residents from 2008-2010 (Figures 44 and 44).

Figure 44



Data Source: NYSDOH Community Health Indicators by Race/Ethnicity

Figure 45



Data Source: NYSDOH Community Health Indicators by Race/Ethnicity

f. Chronic Disease Risk Factors and Prevention

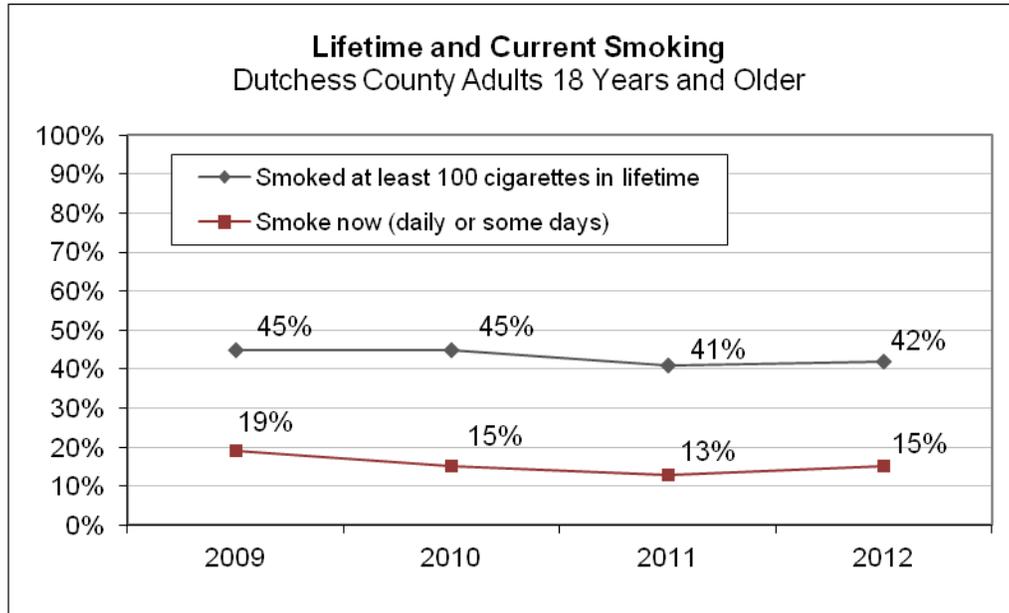
i. Tobacco

Smoking is a well documented risk factor for heart disease, stroke, emphysema, lung cancer and other cancers, and accounts for approximately 1 in every 5 deaths each year in the U.S. (*U.S. Centers for Disease Control and Prevention*). Exposure to secondhand smoke is also associated with increased risk of heart disease and cancer, as well as bronchitis, asthma, ear infections, and pneumonia. Babies born to mothers who smoke are more likely to be premature or have a low birthweight.

The 2008-2009 Expanded Behavioral and Risk Factor Surveillance Survey (EBRFSS) reported the prevalence of current smoking among Dutchess County adults to be 18.4%, compared with 17.0% statewide. From 2009 through 2012, the prevalence of adult smoking in Dutchess County appeared to drop somewhat, and fluctuated between 13 and 15% (Figure 46). The Healthy People 2020 target for (current) smoking in adults is 12.0% or less, which is

retained from the HP2010 goal. The NYS Prevention Agenda 2017 objective is 15.0%, which Dutchess County achieved beginning in 2010.

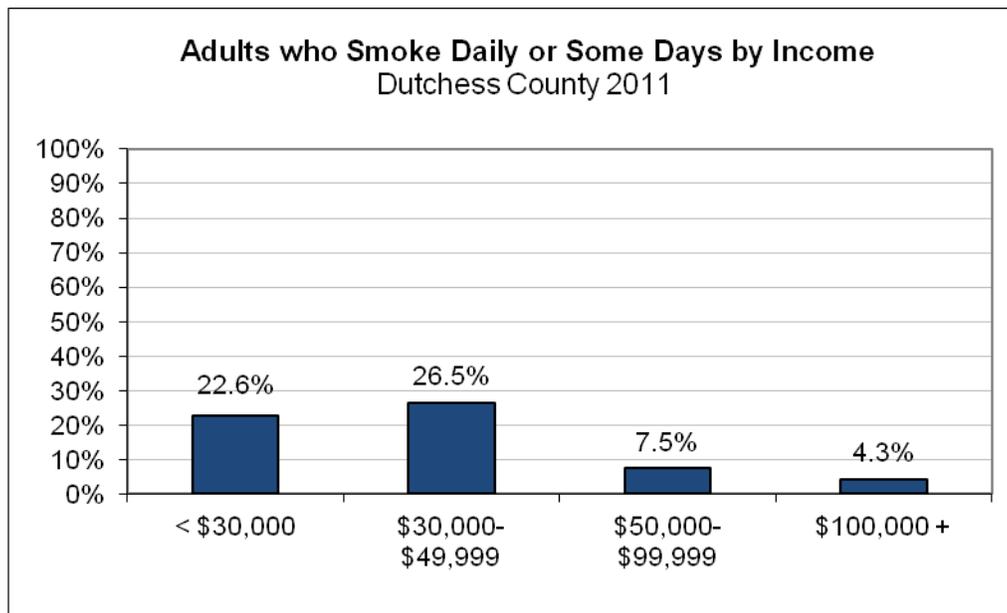
Figure 46



Data Source: SmokeFree Dutchess, NYSDOH Long Island/Hudson Valley Regional Survey

There continues to be a strong socioeconomic disparity in the frequency of smoking, with residents earning under \$50,000 per year being four times more likely to smoke as those earning \$50,000 or more per year (Figure 47).

Figure 47



Data Source: *SmokeFree Dutchess, NYSDOH Long Island/Hudson Valley Regional Survey*

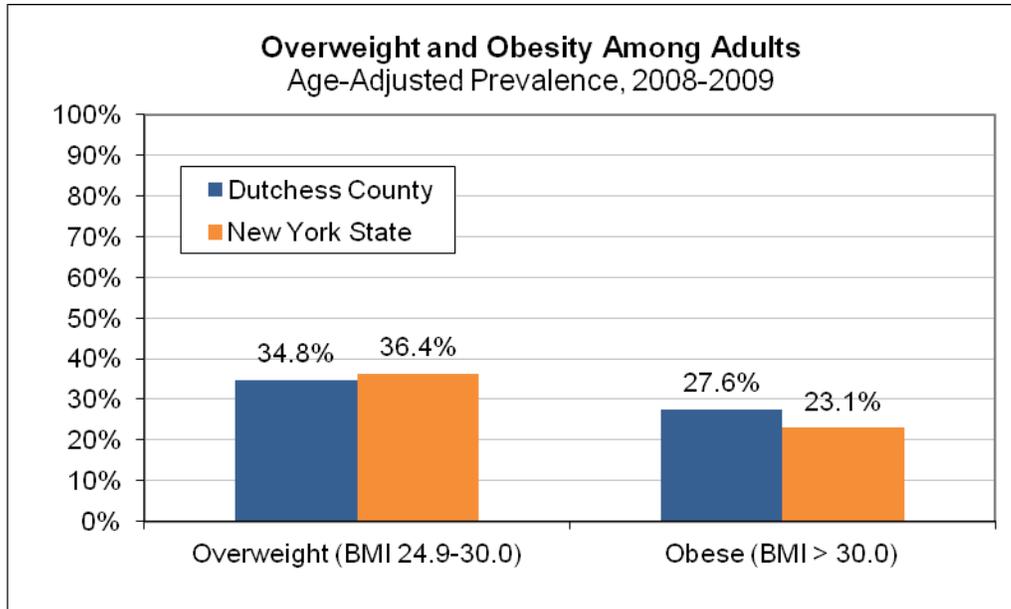
ii. Overweight and Obese Weight Status

Excess body weight can lead to a number of health problems, including Type II diabetes, high blood pressure, heart disease, stroke, cancer, depression, gallbladder disease, reproductive problems, and liver disease (*Mayo Clinic: Obesity*). Body Mass Index (BMI) is calculated from height and weight. Scores below 18.5 are considered underweight, those between 18.5 and 24.9 are considered normal, those between 25.0 and 29.9 are considered overweight, and scores of 30.0 and higher are considered obese. Overweight and obese status in children is determined by percentiles using an age and sex-specific growth chart.

The prevalence of overweight and obese BMIs has increased dramatically over the past 20 years nationally as well as locally. In 2008-2009, the EBRFSS documented that over one-third of adults in Dutchess County and New York State were overweight, and more than an additional 25% of both populations were classified as obese (Figure 48). There were slightly more obese adults in Dutchess County than the statewide average, and the combined prevalence of overweight and obesity (62.4%) was just slightly higher than the statewide average (59.5%).

However, both the New York State average and Dutchess County prevalences of adult obesity were already below the Healthy People 2020 goal of 30.6%.

Figure 48

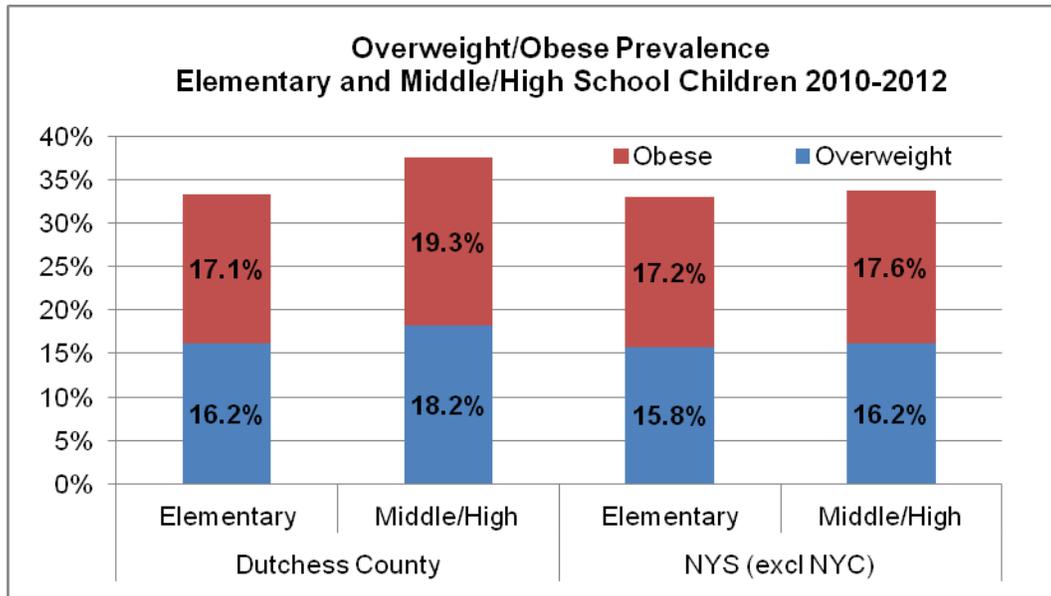


Data Source: Expanded Behavioral and Risk Factor Surveillance System (EBRFSS), 2008-2009

The Student Weight Status Category Reporting System (SWSCR) was established by amendments to New York State Education Law in 2007 to support state and local efforts to understand the extent of and confront the problem of childhood obesity. BMI data are obtained from a 50% sample of all NYS public schools each year. According to the 2010-2012 SWSCR, Dutchess County children had a slightly higher prevalence of overweight and obese BMIs compared with the NYS average excluding NYC (Figure 49). The Healthy People 2020 targets for children aged 6-11 and 12-19 years are 15.7% and 16.1% respectively. This would require over a 10% reduction in the current prevalence of obesity among Dutchess County students. The NYS Prevention Agenda 2017 objective for obesity is 16.7% or less.

Changes in SWSCR data reporting have improved the quality of data collected in 2010-2012. Information on student overweight and obesity from SWSCR is available at Health Data NY: <https://health.data.ny.gov/>.

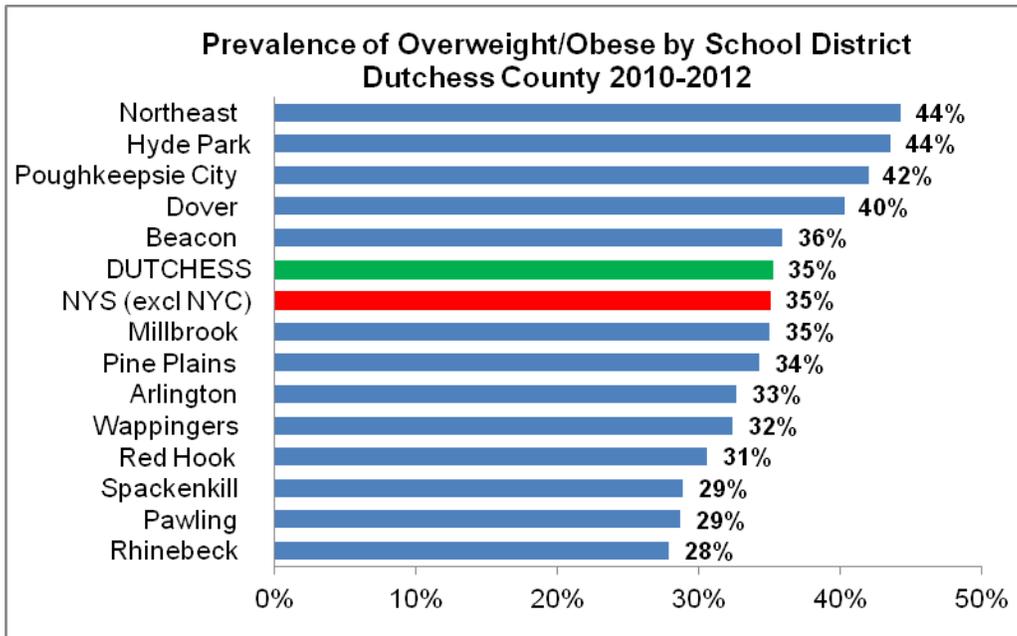
Figure 49



Data Source: *New York State Student Weight Status Reporting System (SWSCR), 2010-2012*

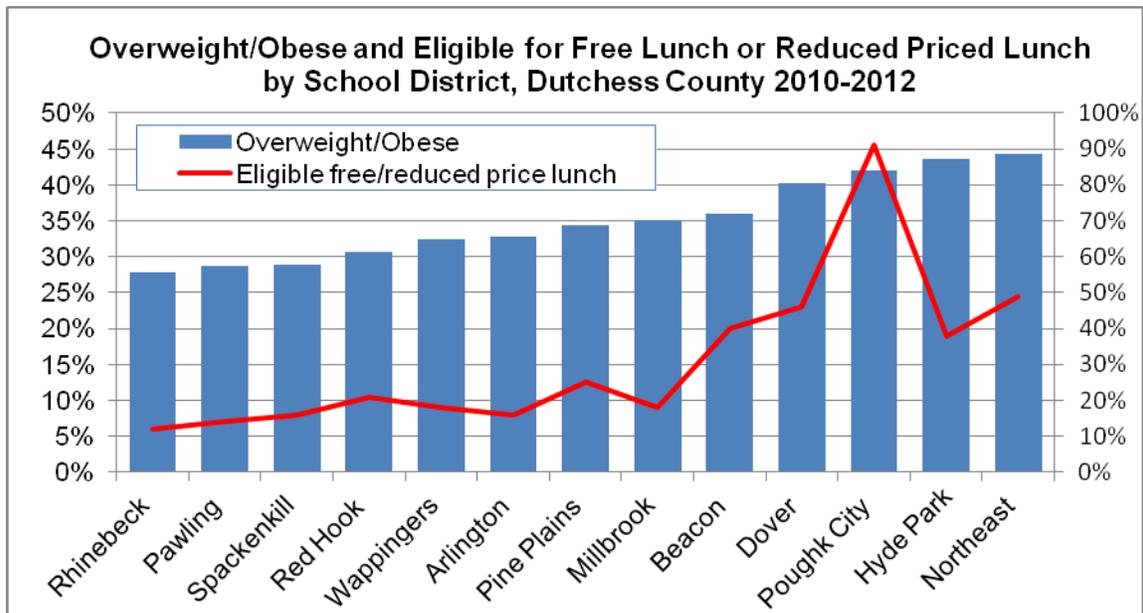
Five school districts exceeded County and state rates - Northeast, Hyde Park, Poughkeepsie City, Dover, and Beacon (Figure 50); these districts also had the highest proportion of children receiving free or reduced cost lunches, demonstrating the relationship between poverty and overweight/obese weight status and (Figure 51).

Figure 50



Data Source: New York State Student Weight Status Reporting System (SWSCR), 2010-2012

Figure 51



Data Sources: New York State Student Weight Status Reporting System (SWSCR), 2010-2012; New York State Education Department Report Cards, 2011-2012

iii. Nutrition and Physical Activity

Studies show that a healthful diet and being physically active decreases one's risk of becoming overweight or obese, as well as the risk of chronic diseases. What defines a healthful diet, however, has changed over time and there is a plethora of nutrition information from many different sources available to the public, which sometimes may be confusing or even contradictory. The 2010 Dietary Guidelines published by the Centers for Disease Control and Prevention and the U.S. Department of Agriculture identify three overarching key principals for healthy eating: 1) maintain a healthy calorie balance through careful attention to calories consumed and by being physically active to expend calories; 2) focus on consuming nutrient-rich foods, such as fruits, vegetables, whole grains, and lean sources of protein; and 3) limit consumption of nutrient-poor foods that are high in fat, added sugars, and refined grains. The 2008 Physical Activity guidelines stress that any activity is better than none, and for most health outcomes, additional benefits occur as the amount of physical activity increases through higher intensity, greater frequency, and/or longer duration (www.health.gov).

The 2008-2009 EBRFSS indicated that fewer Dutchess County residents were sedentary (reported no physical activity) compared with the statewide average (Table 27), already well below the Healthy People 2020 target of 32.6% of adults. Dutchess County residents were similar to the NYS average when it came to consumption of fruits and vegetables. Lower-income residents tended to report less leisure-time physical activity, but there was no income pattern associated with fruit/vegetable consumption, where sufficient data were available.

Table 27
Physical Activity and Nutrition (Age-Adjusted), 2008-2009

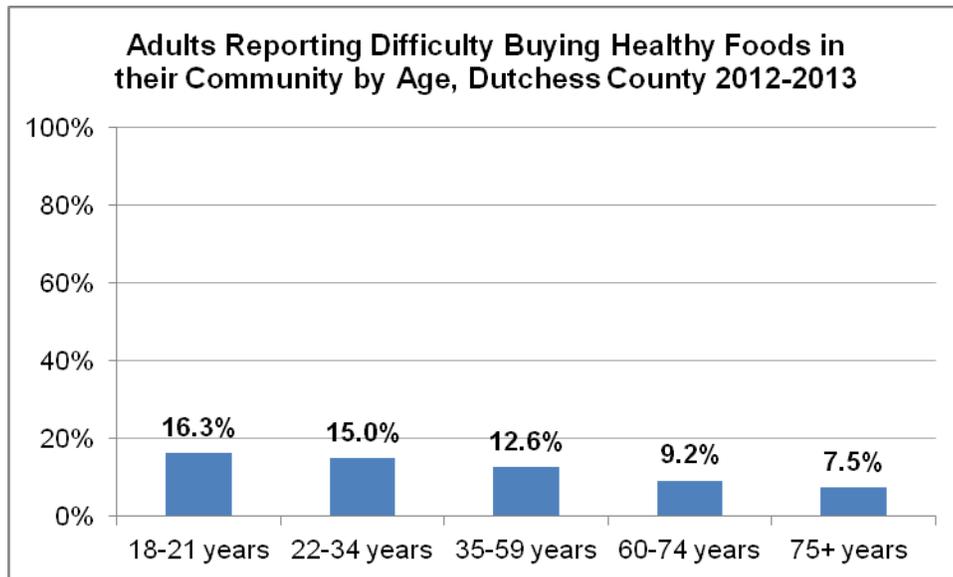
Outcome	Dutchess County	New York State
No leisure-time physical activity ⁶	16.3%	23.7%
<i>By income:</i> < \$24,999	*	37.9%
\$25,000 - \$49,999	18.2%	22.0%
\$50,000 - \$74,999	17.9%	21.6%
>= \$75,000	10.6%	12.6%
Consumption of 5 or more servings of fruits and vegetables per day	27.8%	27.1%
<i>By income:</i> < \$24,999	*	23.9%
\$25,000 - \$49,999	28.2%	32.0%
\$50,000 - \$74,999	*	25.0%
>= \$75,000	25.7%	28.0%

Data Source: EBRFSS 2008-2009, *Data do not meet reporting criteria due to small numbers

According to the *Dutchess County ICA Community Health Survey 2012*, 12.4% of participants had difficulty buying health foods, such as fresh fruits, vegetables, and low-fat milk. Residents of the City of Poughkeepsie were more likely to report having difficulty buying healthy foods (18.8%). Younger adults reported more difficulty than older adults (Figure 52). Hispanics (18.8%) and Non-Hispanic Blacks (16.5%) reported more difficulty than Non-Hispanic Whites (11.2%). Among those who reported difficulty, cost was the predominant reason (86.7%), followed by lack of availability in places where the respondents shopped (31.4%).

⁶ Leisure-time physical activity defined as any physical activity or exercises such as running, calisthenics, golf, gardening, or walking for exercise.

Figure 52



Data Source: Dutchess County ICA Community Health Survey 2012

iv. Routine Preventive Care and Health Screening

According to the 2008-2009 EBRFSS, the proportion of Dutchess County adults having a recent routine physical exam, cholesterol test, and age-appropriate cancer screening was typically consistent with the statewide average for most measures (Table 28). The only significant difference was in the proportion of Dutchess County women ages 35-44 who had a Pap test in the previous three years (97.5%), which was well above the state average (86.9%) and the Healthy People 2020 target of 93.0%. Dutchess County was also on track to achieve the Healthy People 2020 target for colorectal screening (70.5%), and already achieved the breast cancer screening goal of 81.1%. Cholesterol screening rates were also very close to the Healthy People 2020 target of 82.1% of adults.

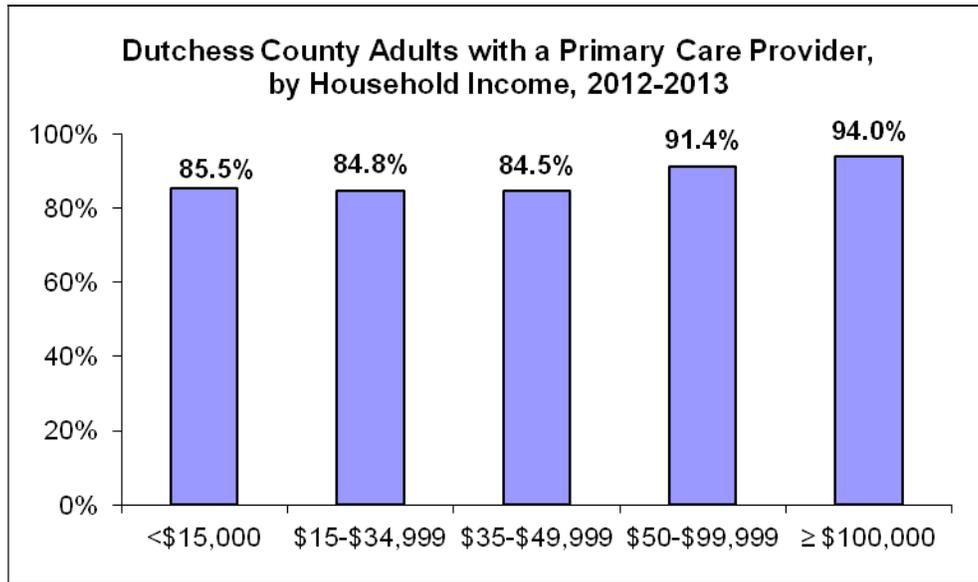
Table 28
Self-Reported Health Exam and Screening Rates, 2008-2009

Health Screening	Age Group	Dutchess County	NYS
Routine physical exam within past 1 year	18+	66.4%	72.7%
Routine physical exam within past 2 years	18+	82.5%	85.7%
Had blood cholesterol checked in past 5 years	18+	79.2%	79.9%
Dental visit within past year	18+	72.3%	71.1%
Colonoscopy/sigmoidoscopy within past 10 years	50+	66.7%	64.6%
Colonoscopy/sigmoidoscopy ever	50+	69.1%	66.6%
Mammogram within past 2 years	40+	82.4%	79.7%
Pap test within past 3 years	18+	86.0%	82.7%
	35-44	97.5%	86.9%
Prostate Specific Antigen Test within past 2 years	40+	56.3%	59.8%
	65+	84.0%	83.3%

***Data Source:** EBRFSS 2008-2009*

Overall, 88.9% of Dutchess County adults reported having a primary care provider in 2012, although adults in lower-income households were less likely to have a primary care provider (Figure 53) (*Dutchess County ICA Community Health Survey 2012*).

Figure 53



Data Source: Dutchess County ICA Community Health Survey 2012

4. Communicable Diseases

Communicable diseases consist of illnesses caused by specific disease-causing organisms and typically spread from human to human. While many infectious diseases require reporting to the NYSDOH, a number do not. Required 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, healthcare facilities, state institutions and any other individuals/locations providing healthcare services are also required to report communicable diseases. A complete list of reportable diseases can be found on the NYSDOH website under Communicable Disease Reporting. Unless otherwise specified, all of the diseases discussed in this section are reportable.

a. Sexually Transmitted Diseases

Sexually transmitted diseases (STDs) include more than 25 infectious organisms that are transmitted primarily through sexual contact. They can greatly impact reproductive health and are increasing in certain populations even though they are easily preventable.

Many cases of chlamydia, gonorrhea, and syphilis remain undiagnosed and unreported, and data on several additional STDs — such as human papillomavirus (HPV), herpes simplex virus, and trichomoniasis — are not routinely reported to CDC. Additionally, accurate assessment of incidence can be affected by changes in screening practices and testing technology.

Chlamydia trachomatis infections are the most commonly reported notifiable disease in the U.S. They are among the most prevalent of all STDs. Gonorrhea is the second most commonly reported notifiable disease in the U.S. There is strong evidence that both gonorrhea and syphilis infections facilitate the transmission of HIV infection.

Although an individual's sexual behavior can increase the risk of acquiring STDs, social determinants of health, such as socioeconomic status, may contribute to the burden of such diseases in a community.

Additional information on sexually transmitted diseases can be found in the CDC's *STD Surveillance Report 2011*, which is the primary reference for this section unless otherwise noted.

i. Chlamydia

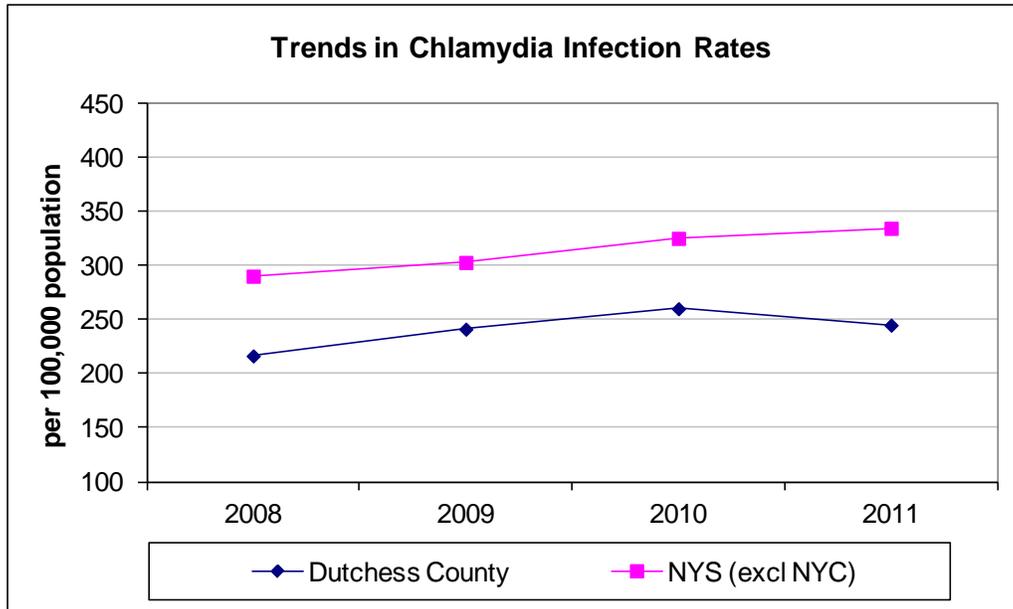
Chlamydia infections are the most commonly reported notifiable disease in the U.S. and they are among the most prevalent of all sexually transmitted infections. Gonorrhea is the second most commonly reported notifiable sexually transmitted disease.

Mirroring national and state trends, Dutchess County incidence rates are high across age groups, genders, and race and ethnicity, with particularly high rates among females, younger individuals, and Non-Hispanic Blacks and Hispanics of any race.

True rates may be impacted by increases in resistance to drugs of choice, changes in treatment options, changes in screening practices, use of diagnostic tests with differing test performance, and changes in reporting practices. Despite annual fluctuations, County level chlamydia infection rates continue to rise, as are national and state rates. In 2011, the County incidence rate of 245.1/1,000 population translated to 729 new cases. Note that national rates are far higher than County rates as are rates for NYS (including NYC) – 457.6/100,000

population and 530.3/100,000 population respectively in 2011 (*CDC: STD Surveillance Report 2011, NYSDOH Communicable Disease Information System*).

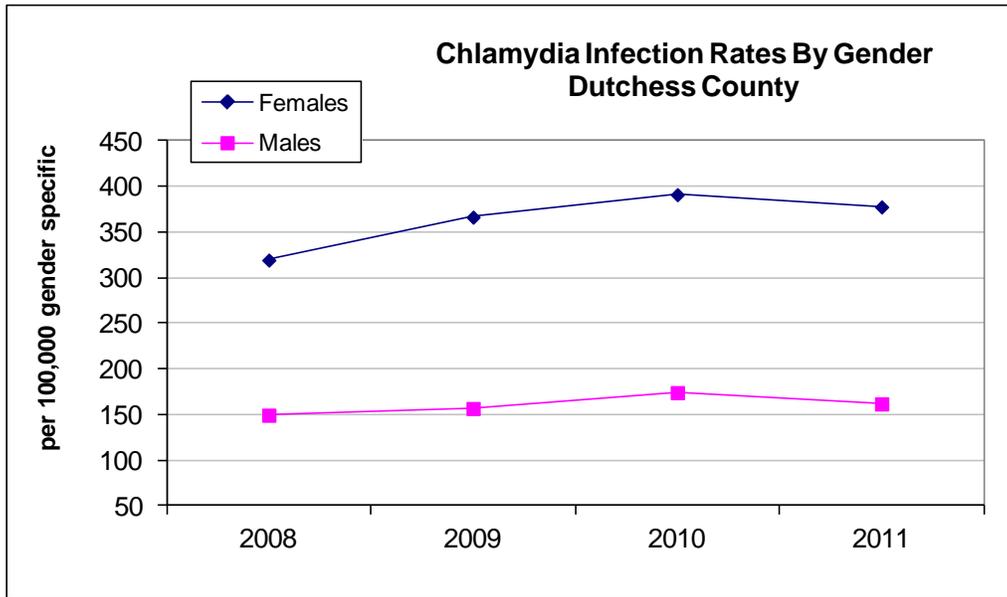
Figure 54



Data Source: NYSDOH Communicable Disease Information System

Females constitute on average 70% of all cases and also have higher infection rates than males (Figure 55). This likely reflects a greater number of females than males being screened for chlamydia; the lower rate among males suggests that many of the sex partners of infected females are likely not being diagnosed or reported. However, with the advent of highly sensitive nucleic acid amplification tests (NAATs) that can be performed on urine, chlamydia infection is increasingly being diagnosed in symptomatic and asymptomatic men (*CDC: STD Surveillance Report 2011*). In Dutchess County, the gap between genders remains fairly constant. Since 2001, when Chlamydia first became notifiable, the male infection rate has increased 84% and that of females 76% (*NYSDOH Communicable Disease Information System*).

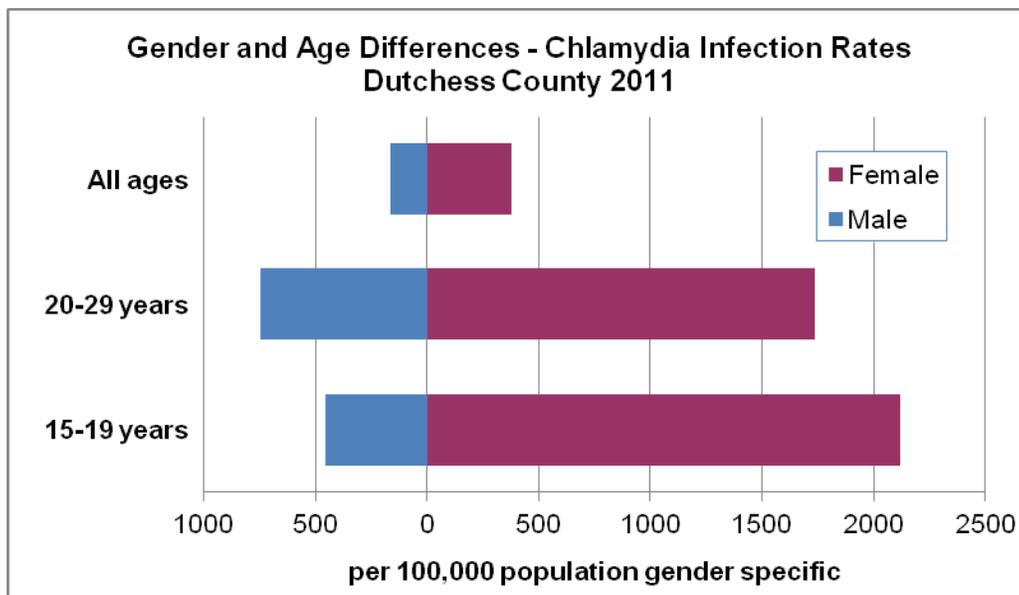
Figure 55



Data Source: NYSDOH Communicable Disease Information System

There are also marked age-related differences in infection rates; approximately 85-88% of all chlamydia infections occur among individuals 15-29 years of age. Additionally, young females have by far the highest incidence rates

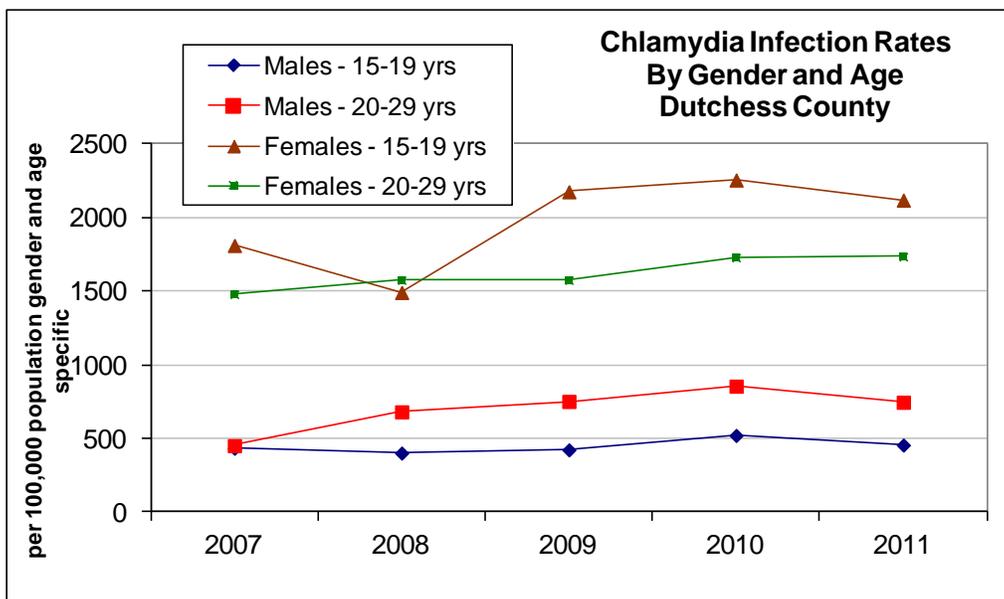
Figure 56



Data Source: NYSDOH Communicable Disease Information System

The highest rate increases are occurring among 20-29 year old females, followed by males in the same age group.

Figure 57



Data Source: NYSDOH Communicable Disease Information System

As stated in the CDC's *STD Surveillance Report 2011*, race and ethnicity are often missing from STD patient data. In 2011, 43% of chlamydia case reports were missing this information in NYS and 45% were missing these data in Dutchess County. While it is possible to analyze data at the national level without adjusting for missing data due to large numbers, this is not the case at the county level. Thus, one can only state that county level data suggest that greater than half of all new cases of chlamydia occur in Non-Hispanic Blacks.

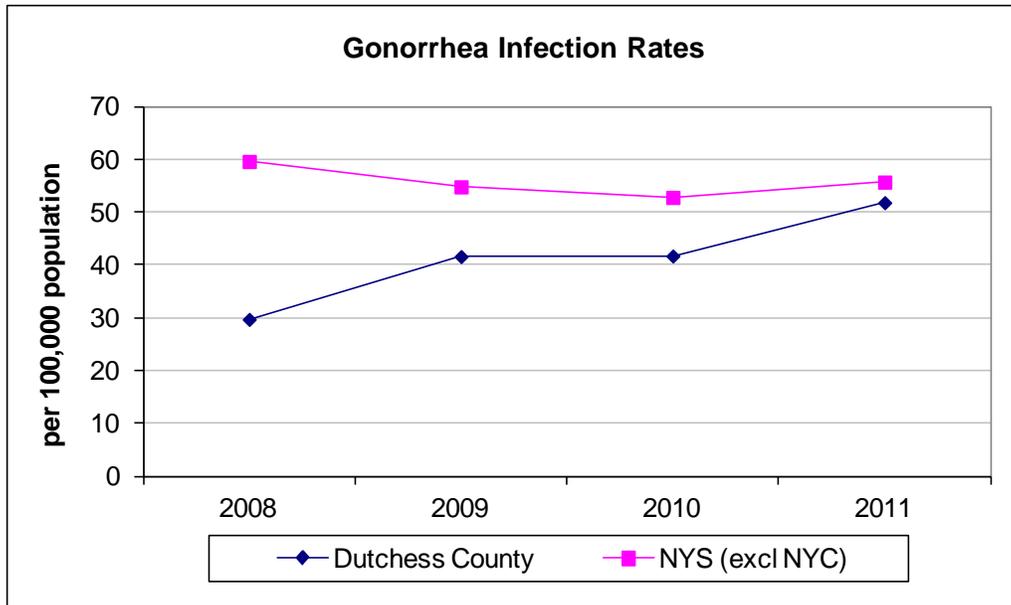
ii. Gonorrhea

Gonorrhea is the second most commonly reported notifiable disease in the U.S. *Neisseria gonorrhoeae* has progressively developed resistance to each of the antibiotics used for treatment. The combination of persistently high gonorrhea morbidity in some populations and threat of cephalosporin-resistant gonorrhea reinforces the need to better understand the epidemiology of this disease.

Dutchess County gonorrhea rates progressively declined over the last decade but this trend has now reversed; as of 2009, rates are rising in Dutchess County while NYS (excl NYC)

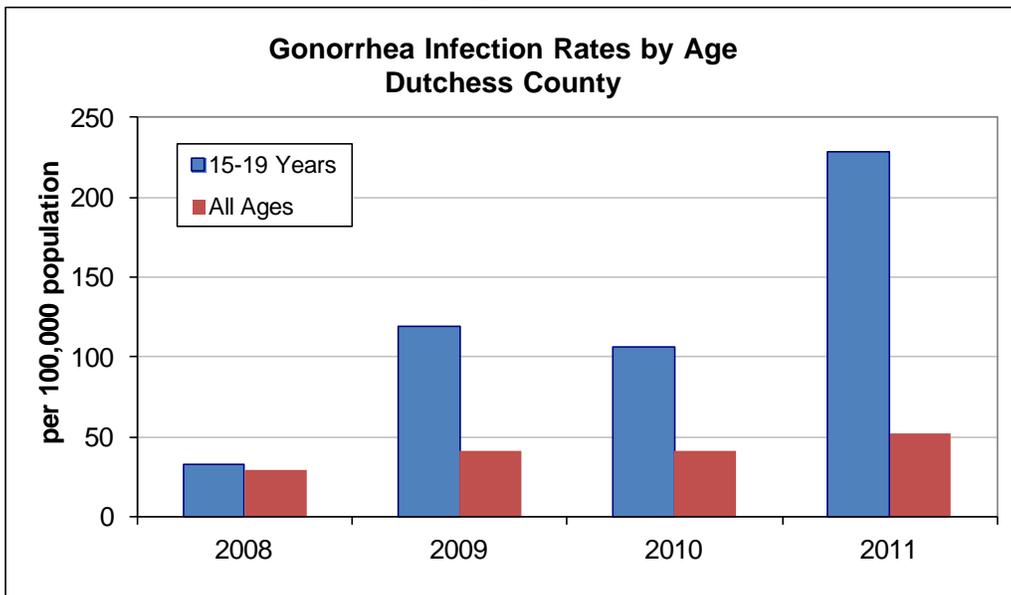
rates are continuing in an overall downward trend. Nationally, although rates are at near historic lows, 2011 is the second consecutive year of increases. National and NYS (incl NYC) rates are much higher than those of Dutchess and NYS (excl NYC) – 104.2/100,000 population and 106.9/100,000 population respectively in 2011 (Figure 58). Gender differences are small but, as in the case of chlamydia, younger individuals are at markedly greater risk (Figure 59).

Figure 58



Data Source: NYSDOH Communicable Disease Information System

Figure 59



Data Source: NYSDOH Communicable Disease Information System

The number of cases is markedly lower than that of chlamydia. In 2011, this translates to 41 cases among 15-19 year olds and 154 cases for all ages, with an average of 32 and 133 cases respectively for the period 2009-2011.

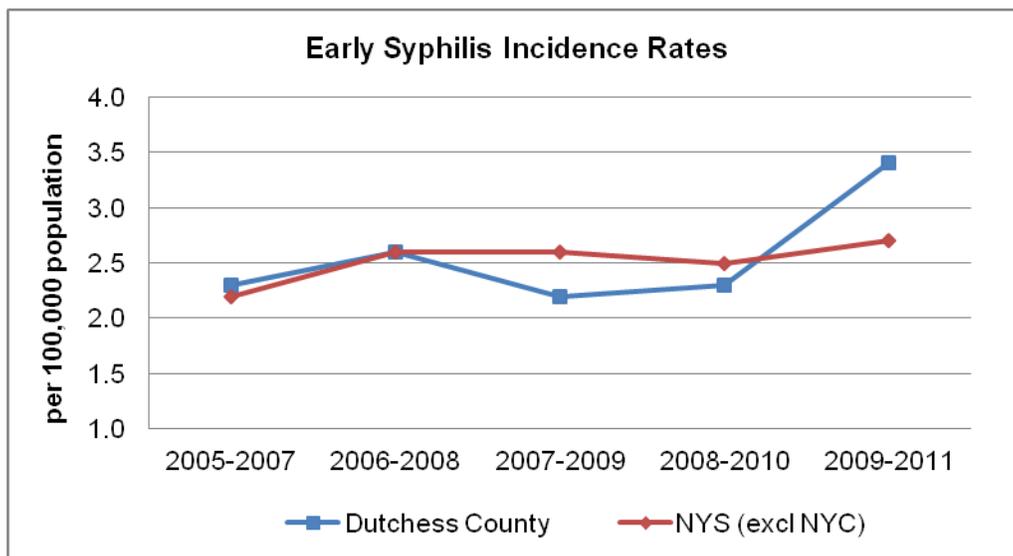
The same data limitations regarding race and ethnicity encountered with chlamydia apply to gonorrhea. Incomplete data suggest that Non-Hispanic Blacks constitute three quarters of all new cases in Dutchess County.

iii. Syphilis

Syphilis is a genital ulcerative disease which causes major complications if untreated. It also carries significant morbidity and mortality risk in women and infants (*see Special Populations – Women and Children under Sexually Transmitted Diseases*).

Early syphilis consists of early latent, primary and secondary syphilis. Following a substantial increase in rates from 2000-2002 to 2004-2006, rates plateaued in both Dutchess County and NYS (excl NYC) through 2008-2010. The most recent data period of 2009-2011 shows a rate increase in Dutchess County. Because the number of cases is so small, three year averaging is used to minimize distortion resulting from annual fluctuations. Trending interpretation should not limit itself to a single period change. The 2009-2011 incidence rate is based on a total of 28 cases compared to 20 cases in 2008-2010.

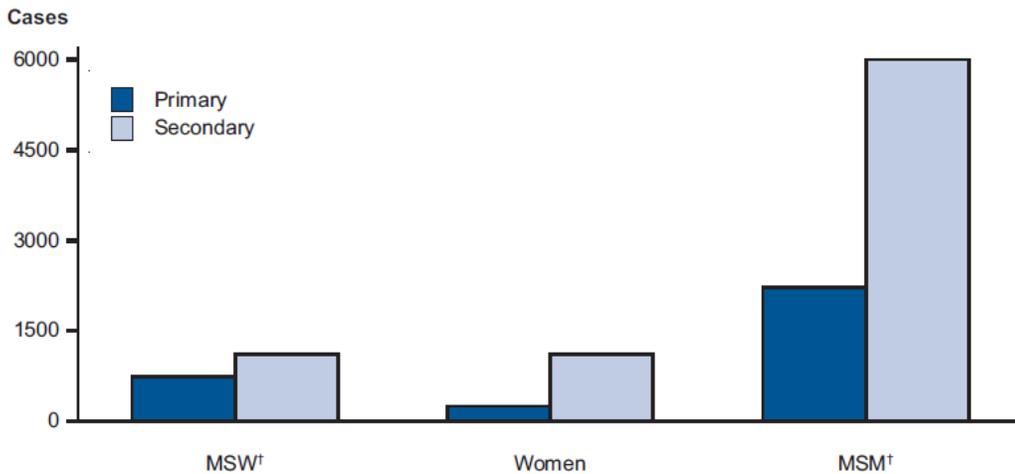
Figure 60



Data Source: NYSDOH Communicable Disease Information System

Young men constitute the highest risk population, predominantly men-who-have-sex-with men (MSM). Nationally, increases persist among the MSM population, and cases are characterized by high rates of HIV co-infection and high-risk sexual behaviors.

Figure 61
Primary and Secondary Syphilis
Reported Cases* by State and Sexual Orientation
United States 2011



Data Source: CDC STD Surveillance Report 2011

* Of the reported male cases of primary and secondary syphilis, 17.0% were missing sex of sex partner information.

† MSW = men who have sex with women only; MSM = men who have sex with men.

The male to female ratio is marked and may be correlated with the MSM population. For the period 2009-2011, this translates to an annual average of eight cases among males and 1.3 cases among females.

Table 29
Early Syphilis Male to Female Ratio

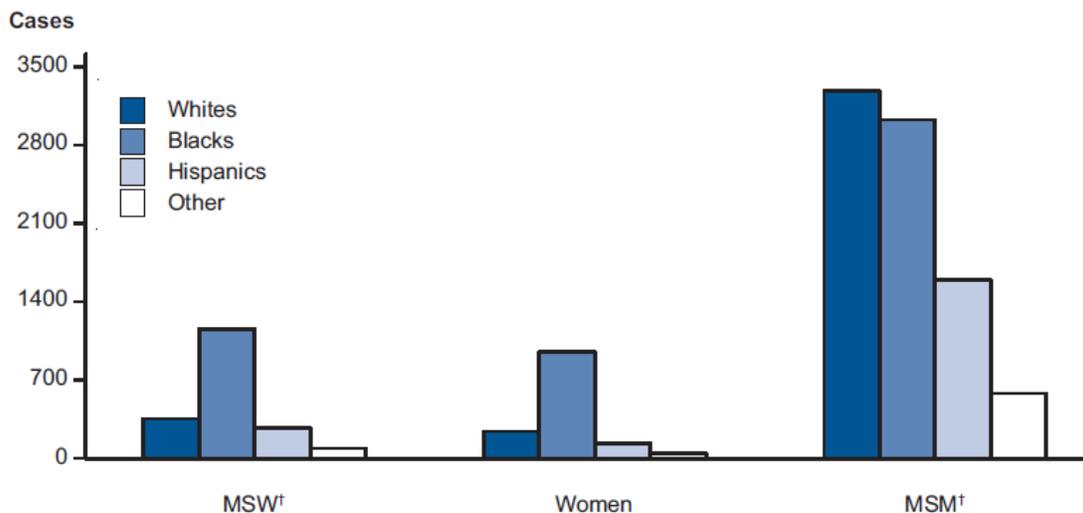
	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011
Dutchess County	15	3.6	8.5	19.0	6.0
NYS (excl NYC)	5	6.6	6.8	6.6	7.5

Data Source: NYSDOH Communicable Disease Information System

Due to the very small number of cases, particularly among Hispanics, it is difficult to make definitive statements regarding racial/ethnic disparities in Dutchess County. Figure 62 presents national data.

Figure 62

**Primary and Secondary Syphilis
Reported Cases* by Sex, Sexual Behavior, and Race/Ethnicity
United States, 2011**



Data Source: CDC STD Surveillance Report 2011

* Of the reported male cases of primary and secondary syphilis, 17.0% were missing sex of sex partner information; 2.4% of reported male cases with sex of sex partner data were missing race/ethnicity data.

† MSW = men who have sex with women only; MSM = men who have sex with men.

iv. Special Populations – Women and Children

Women and infants are particularly vulnerable to STD morbidity. Both gonorrhea and chlamydia infections are a major cause of Pelvic Inflammatory Disease (PID) in the U.S. PID can lead to serious complications in women, such as infertility, ectopic pregnancy and chronic pelvic pain. Infections can result in poor pregnancy outcomes, such as neonatal pneumonia (chlamydia) which requires prenatal detection and treatment for prevention and neonatal ophthalmia (gonorrhea).

There are no reported cases of PID in Dutchess County attributable to chlamydia (2001-2011) or to gonorrhea (1992-2011). PID hospitalization rates appear to be declining slightly both at the county and state levels.

Table 30
PID Hospitalization Rate
(per 10,000 women ages 15-44 years)

		2005-2007	2006-2008	2007-2009	2008-2010
Dutchess County	# of cases	50	49	45	36
	rate	2.7	2.7	2.5	2.1
NYS (excl NYC)	rate	4.1	3.7	3.4	2.5

Data Source: NYSDOH Community Health Indicator Reports

Chlamydia and gonorrhea infections are being diagnosed in pregnant women, particularly younger females. While data are available, the percent of infected females with unknown pregnancy status can vary from 10-30%. These individuals are excluded from data analysis, thereby reducing the denominator and potentially increasing the rates.

Table 31
Percent of Chlamydia Cases Diagnosed in Pregnant Women
Dutchess County

Age Group	2006-2008	2007-2009	2008-2010	2009-2011
15-19 year olds	21.6%	23.7%	20.7%	18.3%
20-29 year olds	23.8%	24.3%	22.5%	20.4%

Data Source: NYSDOH Communicable Disease Information System

Approximately one fourth of 15-19 and 20-29 year old females with chlamydia infections are pregnant. For the period 2009-2011, this translates to an annual average of 29/157 pregnancies in 15-19 year olds and to 45/220 pregnancies in 20-29 year olds. We do not have data on whether these pregnancies resulted in live births or if treatment was provided.

The pattern is similar for pregnant females with gonorrhea. For the period 2009-2011 this translates to 10/46 pregnancies in 15-19 year olds and 27/98 pregnancies in 20-29 year olds.

Table 32

**Percent of Gonorrhea Cases Diagnosed in Pregnant Women
Dutchess County**

Age Group	2006-2008	2007-2009	2008-2010	2009-2011
15-19 year olds	18.5%	23.3%	21.6%	21.7%
20-29 year olds	20.3%	14.5%	21.4%	27.6%

Data Source: NYSDOH Communicable Disease Information System

Syphilis infection during pregnancy can result in fetal death or an infant born with physical and mental developmental disabilities. Most cases of congenital syphilis are easily preventable if women are screened for syphilis and treated early during prenatal care. However, untreated early syphilis in pregnant women results in perinatal death in up to 40% of cases and, if acquired during the four years preceding pregnancy, can lead to infection of the fetus in 80% of cases. The Healthy People 2020 target for congenital syphilis is 9.6 cases per 100,000 live births.

In 2013, Dutchess County reported its first confirmed case of congenital syphilis since 2007. The 2007 case was epidemiologically linked to the epidemic among men-who-have-sex-with-men. The five other cases in the past 10 years were primarily among foreign-born mothers who received little or no prenatal care and entered the country near the end of the pregnancy; in some cases the linkage was not determined.

Another infectious disease of growing importance to women’s reproductive health is human papillomavirus (HPV), a highly prevalent infection, particularly among young sexually active females. While the majority of infections resolve within one year, persistent infections with specific types of HPV viruses are causally related to cervical cancer. Please see *Genital Human Papillomavirus (HPV) and Prevention and Vaccines for additional information.*

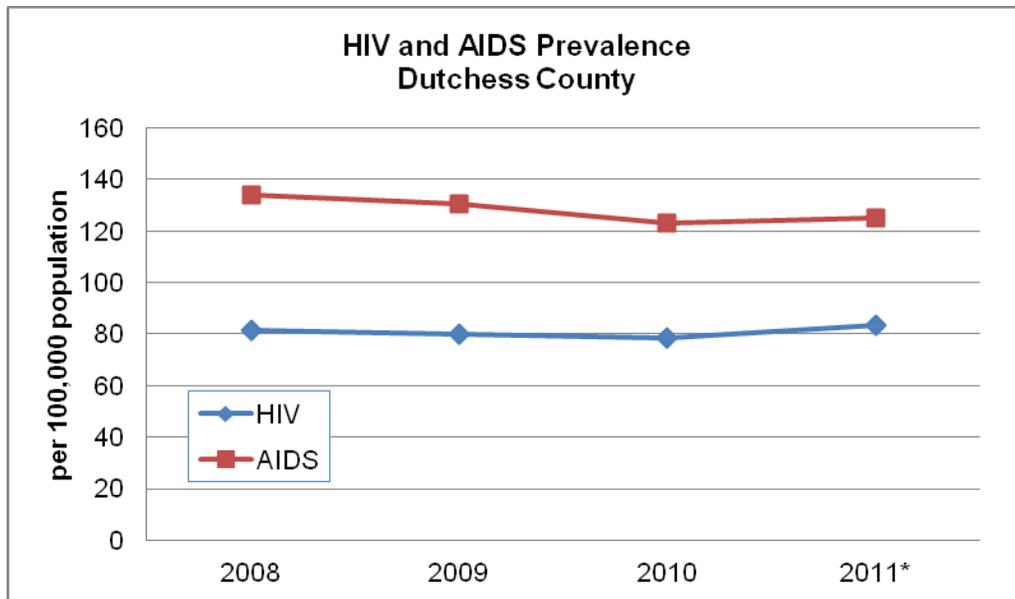
v. HIV and AIDS

The Human Immunodeficiency Virus (HIV) causes Acquired Immunodeficiency Syndrome (AIDS) - the final stage of HIV infection. HIV attacks the human immune system which loses the ability to fight infections. When someone has one or more specific infections, certain cancers, or a very low count of T cells, he or she is considered to have AIDS. It can take years for a person infected with HIV, even without treatment, to reach a stage when the virus has weakened the immune system and the body has a difficult time fighting infection.

HIV/AIDS data are usually tabulated with and without State prison inmate data. All HIV/AIDS data in this report **EXCLUDE** prison inmates. Inmate residence refers to residence at the time of diagnosis, and it usually applies to the location of the prison where the inmate was first diagnosed with HIV. Additionally, the prison inmate population is transient for any given prison location, and we do not receive notice of inmates leaving the prison system.

The rates of individuals living with HIV and AIDS (prevalence) remain fairly stable.

Figure 63



Data Source: NYSDOH AIDS Institute, Bureau of HIV/AIDS Epidemiology

* 2011 data provisional as of September 9, 2013

The characteristics of individuals most at risk for HIV/AIDS in Dutchess County are those recognized among populations with HIV/AIDS. Prevalence is higher among males, heterosexuals, individuals ages 40-59 years, and White and Black races.

Table 33
Living with HIV and AIDS Cases by Gender, Age, Race/Ethnicity
Dutchess County, through December 2010
(excl State prison inmates)

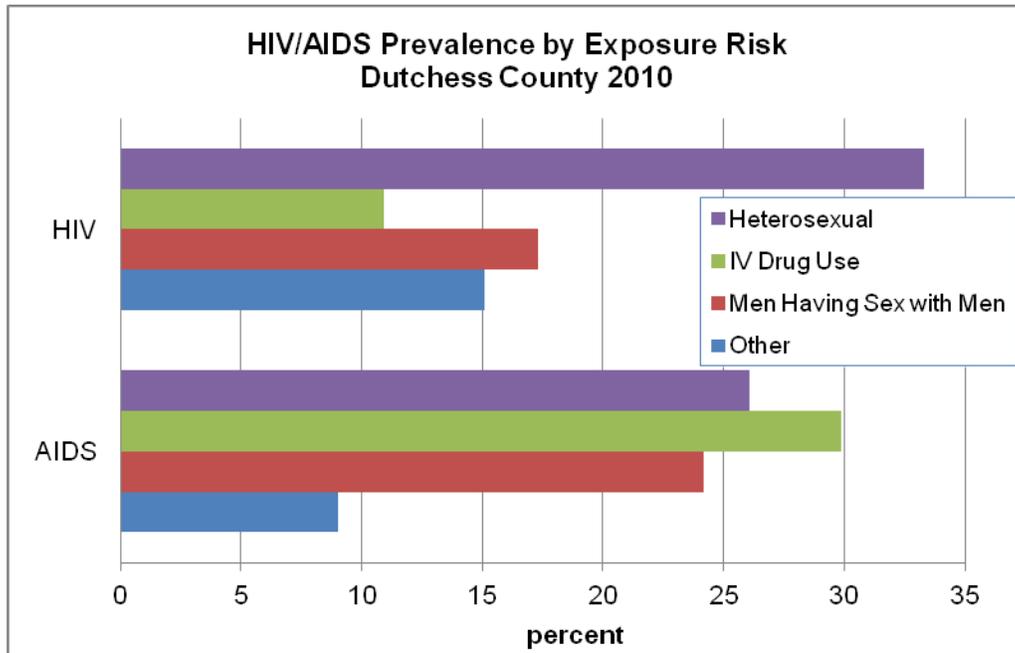
Characteristic		Living HIV (not AIDS) Cases		Living AIDS Cases	
		Number	%	Number	%
Total		231	100.0	368	100.0
Gender	Male	137	59.3	246	66.8
	Female	94	40.7	122	33.2
Age at Diagnosis	0-19	7	3.0	5	1.4
	20-24	11	4.8	8	2.2
	25-29	17	7.4	7	1.9
	30-39	33	14.3	28	7.6
	40-49	70	30.3	119	32.3
	50-59	71	30.7	148	40.2
	60+	22	9.5	53	14.4
Race/Ethnicity	White	96	41.6	119	32.3
	Black	81	35.1	142	38.6
	Hispanic	32	13.9	81	22.0
	Multi Race/Other	22	9.5	26	7.1

Data Source: NYSDOH Bureau of HIV/AIDS Epidemiology and AIDS Institute: New York State HIV/AIDS County Surveillance Report (Excludes state prison inmates) for cases diagnosed through December 2010

Notes: Data are as of March 2012

The most prevalent exposure risk for HIV is heterosexual contact (33% of cases) whereas intravenous drug use accounts for 30% of AIDS cases (Figure 64).

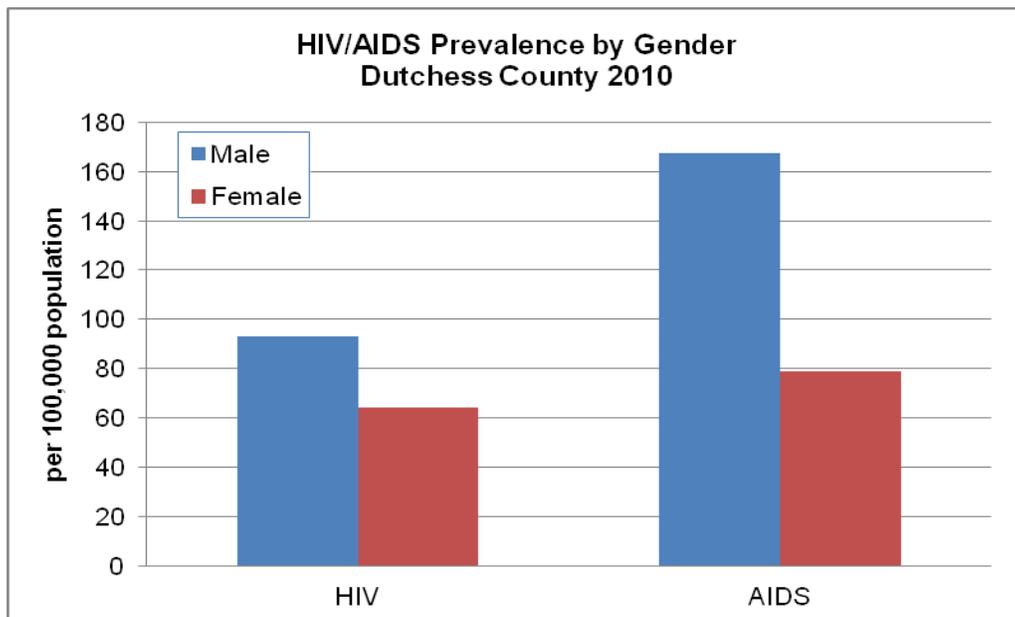
Figure 64



Data Source: NYSDOH AIDS Institute, Bureau of HIV/AIDS Epidemiology

Prevalence rates are the most accurate way to gauge the impact of the disease among population sub-groups. Males have a higher prevalence of both diseases.

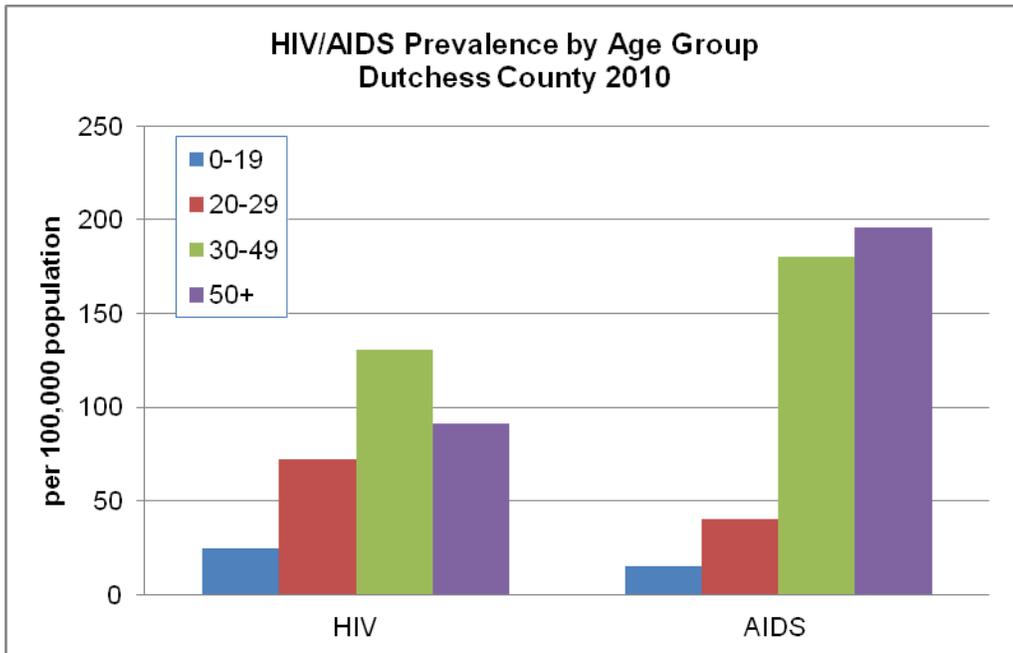
Figure 65



Data Source: NYSDOH AIDS Institute, Bureau of HIV/AIDS Epidemiology

Individuals ages 30-49 have the highest prevalence rates for both diseases.

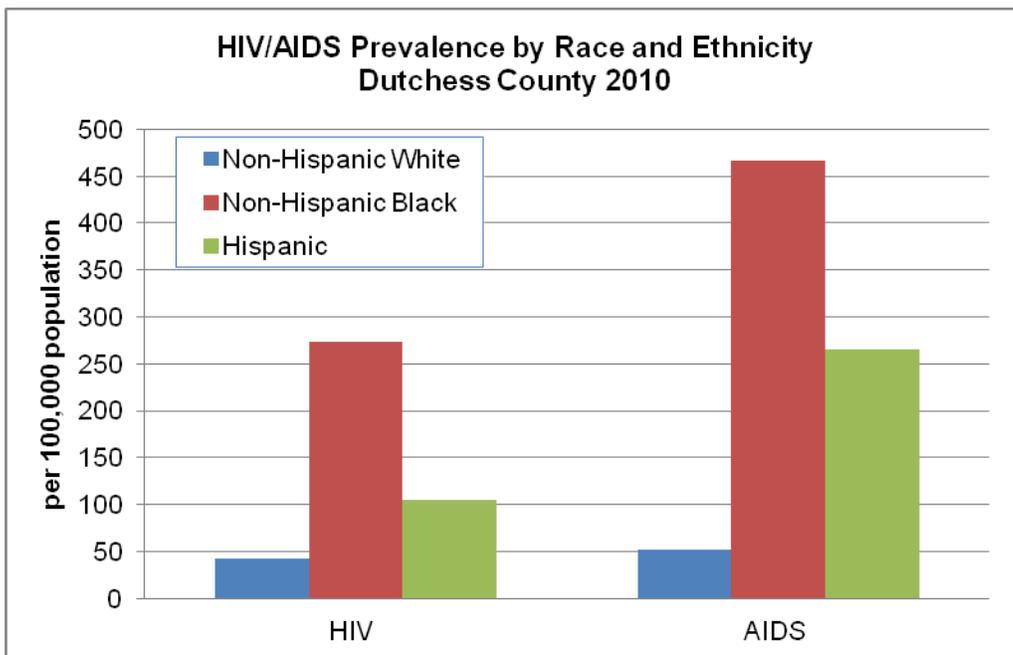
Figure 66



Data Source: NYSDOH AIDS Institute, Bureau of HIV/AIDS Epidemiology

Non-Hispanic Blacks have the highest prevalence rates for both diseases.

Figure 67



Data Source: NYSDOH AIDS Institute, Bureau of HIV/AIDS Epidemiology

HIV incidence remains relatively unchanged but the AIDS case rate appears to be decreasing.

Table 34
Average Annual Newly Diagnosed HIV and AIDS Cases *
Dutchess County

Disease	2008-2010		2009-2011**	
	#	Rate per 100,000 population	#	Rate per 100,000 population
HIV	15	5.2	17	5.8
AIDS	14	4.8	7	2.3

Data Source: NYSDOH AIDS Institute, Bureau of HIV/AIDS Epidemiology

* Incidence rates are by year of diagnosis

** 2011 data provisional as of September 9, 2013

vi. Genital Human Papillomavirus (HPV)

HPV is the most common sexually transmitted infection and is not reportable. There are more than 40 HPV that can be transmitted by sexual contact. Most people who become infected with HPV do not know they have it, never develop symptoms or health problems, and the majority of infections go away by themselves within two years. However, sometimes HPV infections persist and can cause a variety of serious health problems, including:

- Genital warts (warts on the genital areas)
- Recurrent respiratory papillomatosis (RRP), a rare condition in which warts grow in the throat
- Cervical cancer
- Other, less common, but serious cancers, including genital cancers (cancer of the vulva, vagina, penis, or anus), and a type of head and neck cancer called oropharyngeal cancer (cancer in the back of throat, including the base of the tongue and tonsils).

Vaccination against HPV was introduced in 2006 and was recommended for females at that time. In 2010, vaccination was also recommended for boys. Please see *Prevention and Vaccines* for additional information.

b. Other Communicable Diseases

i. Tuberculosis

Tuberculosis (TB) is caused by a bacterium called *Mycobacterium tuberculosis*. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body such as the kidney, spine, and brain. TB is spread through the air from one person to another. If not treated properly, TB disease can be fatal. For people whose immune systems are weak, especially those with HIV infection, the risk of developing TB disease is much higher than for people with normal immune systems.

In NYS (excl NYC), the number of TB cases decreased 9.1% from 243 cases in 2010 to 221 cases in 2011. Three counties - Nassau, Suffolk, and Westchester - reported over half of these TB. Tuberculosis is a reportable communicable disease. The number of cases in Dutchess County remains very low but the rates remain shy of the Healthy People 2020 goal of 1.0/100,000 population. There were 23 cases reported for the period 2008-2011 at a rate of 2.1/100,000 population – compared to 2.3/100,000 population for NYS (excl NYC).

ii. Hepatitis

Hepatitis A, B and C are reportable diseases. Hepatitis A is an acute liver disease caused by the hepatitis A virus, lasting from a few weeks to several months. It does not lead to chronic infection. It is transmitted via ingestion of fecal matter, even in microscopic amounts, from close person-to-person contact or ingestion of contaminated food or drinks. Hepatitis B is a liver disease caused by the Hepatitis B virus. It ranges in severity from a mild illness, lasting a few weeks (acute), to a serious long-term (chronic) illness that can lead to liver disease or liver cancer. Contact with infectious blood, semen, and other body fluids from having sex with an infected person, sharing contaminated needles to inject drugs, or from an infected mother to her newborn. Hepatitis C is a liver disease caused by the Hepatitis C virus. Hepatitis C infection sometimes results in an acute illness, but most often becomes a chronic condition that can lead to cirrhosis of the liver and liver cancer. Transmission occurs through contact with the blood of an infected person, primarily through contaminated needles or other equipment to inject drugs and being born to an infected mother. Vaccines are available for Hepatitis A and B but not C.

The incidence rates for all three infections are very low in Dutchess County, making trending analysis difficult.

Table 35
Hepatitis Rates, 2008-2011

Infection	Dutchess County		New York State (excl NYC)
	# of Cases	Rate per 100,000 population	Rate per 100,000 population
Hepatitis A	11	1.01	0.5
Hepatitis B - Acute	8	**0.74	0.5
Hepatitis C - Acute	*	**0.37	0.4

Data Source: NYSDOH Communicable Disease

* Small numbers suppressed for confidentiality reasons

** Rates generated from numerator values ≤ 10 and should be interpreted with caution

iii. Pertussis

Pertussis (whooping cough) is highly contagious and most commonly affects infants and young children and can be fatal, especially in babies less than one year of age. Pertussis experiences frequent outbreaks and tends to peak every three to five years.

For the period 2008-2011, the incidence of Pertussis in Dutchess County was 2.8/100,000 population compared to 5.3/100,000 population in NYS (excl NYC); this translates to a total of 31 cases. In 2012, the County experienced a Pertussis outbreak among school age children; three quarters of all 141 cases occurred among children ages 5-19.

iv. Measles, Mumps, Rubella

For the most recent data period of 2008-2011, Dutchess County had no cases of measles or rubella and had eight cases of mumps (*NYSDOH Communicable Diseases*).

v. Influenza and Pneumonia

Haemophilus influenza is notifiable but other types of influenza, such as influenza A and B, are not. The majority of seasonal influenza epidemics are caused by influenza A and B viruses. H1N1 and H3N2 are currently the most common influenza A subtypes circulating among humans.

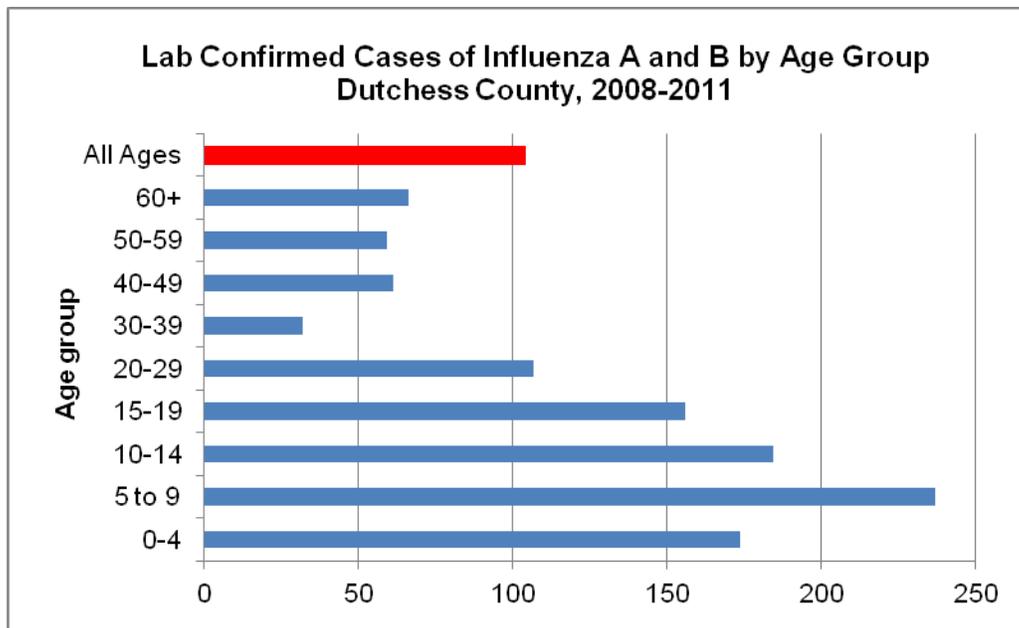
Influenza-associated pediatric mortality is notifiable; in Dutchess County, only one case of influenza-associated pediatric death has occurred (in 2010) since 1992 (the earliest year for which data are available) (*NYSDOH Communicable Diseases*).

The most common bacterial cause of pneumonia is *Streptococcus pneumoniae* (pneumococcus) (a notifiable disease) and the most common viral causes are influenza, parainfluenza, and respiratory syncytial viruses. Other common bacterial and viral causes of pneumonia in the U.S. include *Staphylococcus aureus* and adenovirus. Not all are notifiable.

Children under the age of five and individuals 65 years of age or older are at a higher risk, as are pregnant women and people with certain underlying health conditions. People who smoke cigarettes or have asthma are also at increased risk.

Confirmed cases of influenza A and B for the last four years of reported data show much higher rates among the very young. The pattern is similar to that of NYS although state rates are overall higher and NYS has a much higher rate for ages 0-4 years.

Figure 68

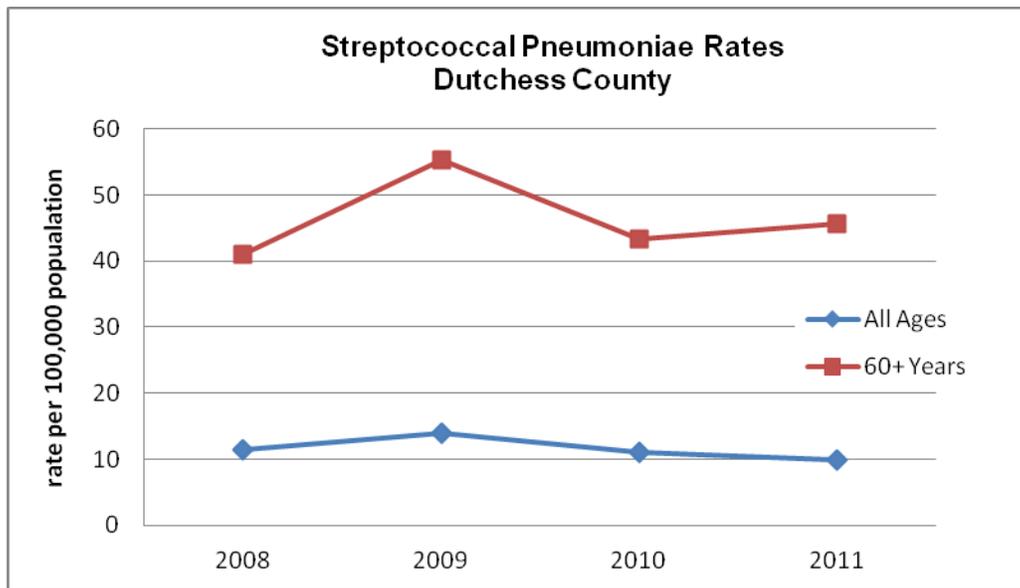


Data Source: NYSDOH Communicable Disease

The incidence of Haemophilus influenza is very low. For the period 2008-2011, the Dutchess County rate was 1.2/100,000 population (13 cases) compared to 1.6/1,000 for NYS.

The incidence of reported confirmed cases of Strep pneumonia remains fairly constant and underscores the vulnerability of the older population who constitutes on average 60% of all cases (average annual number of cases 19 for the period 2008-2011).

Figure 69



Data Source: NYSDOH Communicable Disease

c. Prevention and Vaccines

Currently there are vaccines available to protect children and adults against at least 17 diseases, which cause serious afflictions such as paralysis, loss of hearing, infertility and even death. The vaccines include Diphtheria, Hepatitis A, Hepatitis B, Haemophilus Influenzae Type B, Human Papillomavirus (HPV), Influenza, Measles, Meningococcal, Mumps, Pertussis, Pneumococcal, Polio, Rotavirus, Rubella, Shingles, Tetanus, and Varicella.

i. Influenza and Pneumonia

Table 36

Influenza and Pneumonia Immunization by Age Group: 2008-2009

Flu Vaccine	Dutchess County	New York State
18-49 years	29.7%	31.6%
50-64 years	43.6%	46.1%
> 65 years	70.1%	75.1%
Pneumonia Vaccine		
18-49 years	12.9%	14.6%
50-64 years	18.5%	23.0%
> 65 years	67.1%	65.7%

Data Source: EBRFSS 2008-2009

In addition to the pneumococcal vaccine, there are several vaccines that prevent infection by bacteria or viruses that may cause pneumonia. These vaccines include *Haemophilus influenzae* type b (Hib), Pertussis, Varicella (chickenpox), Measles, and Influenza (flu) vaccine.

ii. Childhood Immunization

Children are required to receive a series of immunizations in order to enter the school system unless they have a medical or religious exemption. The required vaccines are administered according to an age-specific protocol and include: diphtheria, polio, measles, rubella, mumps, Hepatitis B, tetanus, Pertussis, tdap, pneumococcal, *Haemophilus influenzae*, varicella.

Table 37

Immunization Rates - Dutchess County

Grades	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Kindergarten	97%	97%	96%	98%	95%
Total of All Grades	93%	97%	98%	97%	98%

Data Source: NYS School Immunization Survey

iii. HPV Vaccine

There are two FDA approved vaccines (Cervarix and Gardasil) that protect against HPV infection and the health problems that HPV infection can cause. Both vaccines are highly effective in preventing infections with HPV types 16 and 18, two high-risk HPVs that cause about 70% of cervical and anal cancers. Gardasil also prevents infection with HPV types 6 and 11, which cause 90% of genital warts.

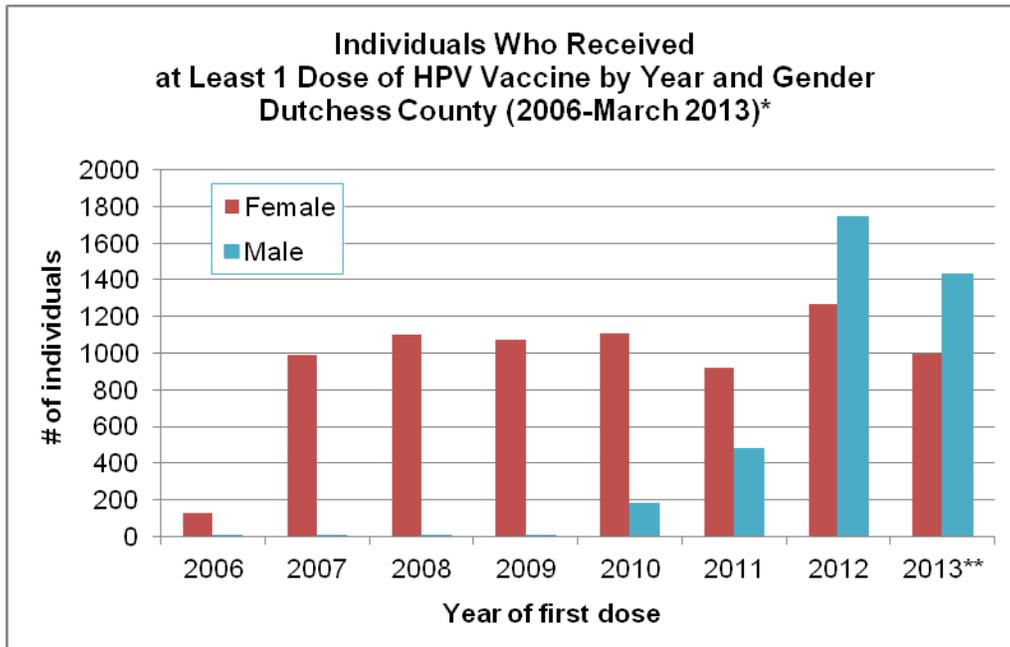
Cervarix and Gardasil protect against cervical cancers in women. Gardasil also protects against genital warts and cancers of the anus, vagina and vulva. Only Gardasil is available for males. The vaccines offer the best protection to youth who receive all required doses and have time to develop an immune response before being sexually active with another person. This is why HPV vaccination is recommended for preteen girls and boys at age 11 or 12 years.

Vaccination is also recommended for gay and bisexual men (or any man who has sex with a man), and for men and women with compromised immune systems (including people living with HIV/AIDS) through age 26, if they did not get fully vaccinated when they were younger (CDC).

County level HPV vaccination data cover different time periods for females and males as recommendations were made in 2006 for females and in 2010 for males.

The number of females vaccinated has not increased very much over time despite going on nine years of vaccine availability, and it decreased in 2011. While male vaccination did not start until 2010, there has been a dramatic rise in the number of individuals vaccinated from 2011 to 2012, and, to date, 2013 suggests a continued increase. For both 2012 and 2013 to date, males are surpassing females (Figure 70).

Figure 70



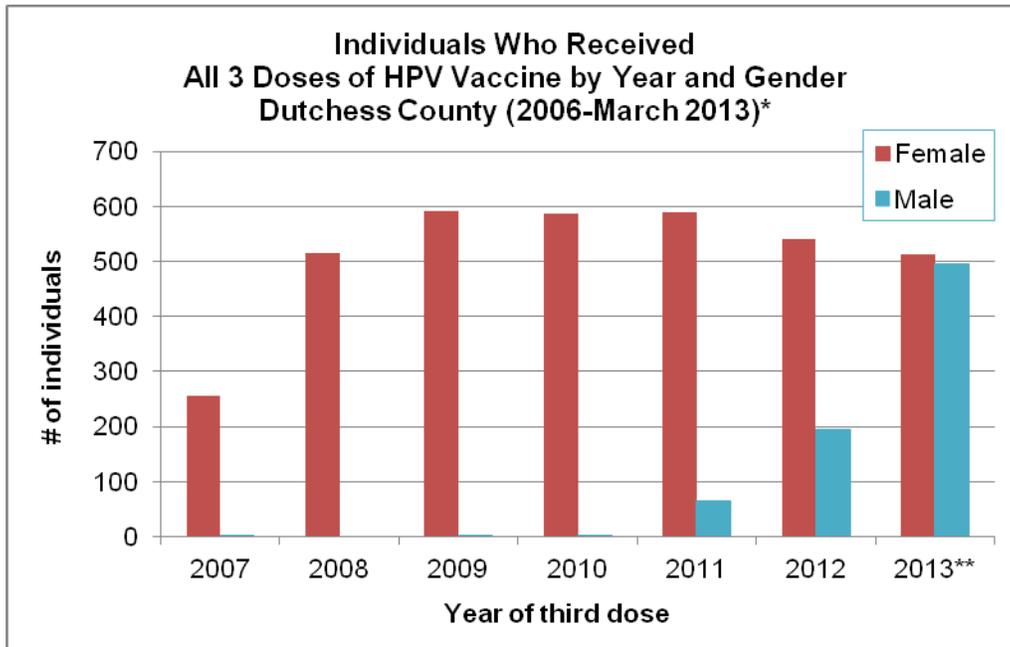
Data Source: NYS Immunization Information System

* Vaccination recommended in 2006 for females and in 2010 for males

** 2013 Data only through March 2013

Females are more likely than males to have received all three required doses (Figure 71) but only slightly over half of females who received at least one dose were fully vaccinated (54%). After peaking in 2009, the numbers plateaued and somewhat decreased in 2012. Only 29% of males were fully vaccinated. Due to the short time frame for male vaccinations, the male percentage should be interpreted with caution.

Figure 71



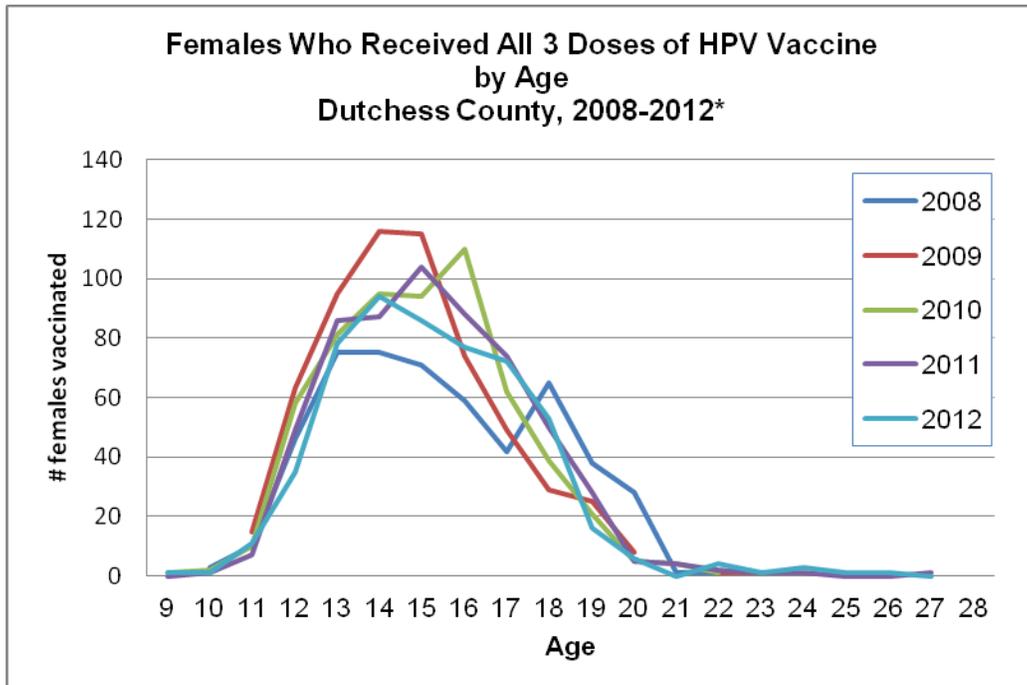
Data Source: NYS Immunization Information System

** Vaccination recommended in 2006 for females and in 2010 for males*

*** 2013 Data only through March 2013*

Females are fully vaccinated at an earlier age than males, ranging from 13 to 16 years with a peak around 14-15 years while males have a broader range, from 13-19 years with peaks around 13-14 and 17-18 years (Figures 72 and 73). Again, due to the shorter timeline for males, the apparent trend should be interpreted with caution. Data for 2013 are not included as the age distribution may change by the end of the year.

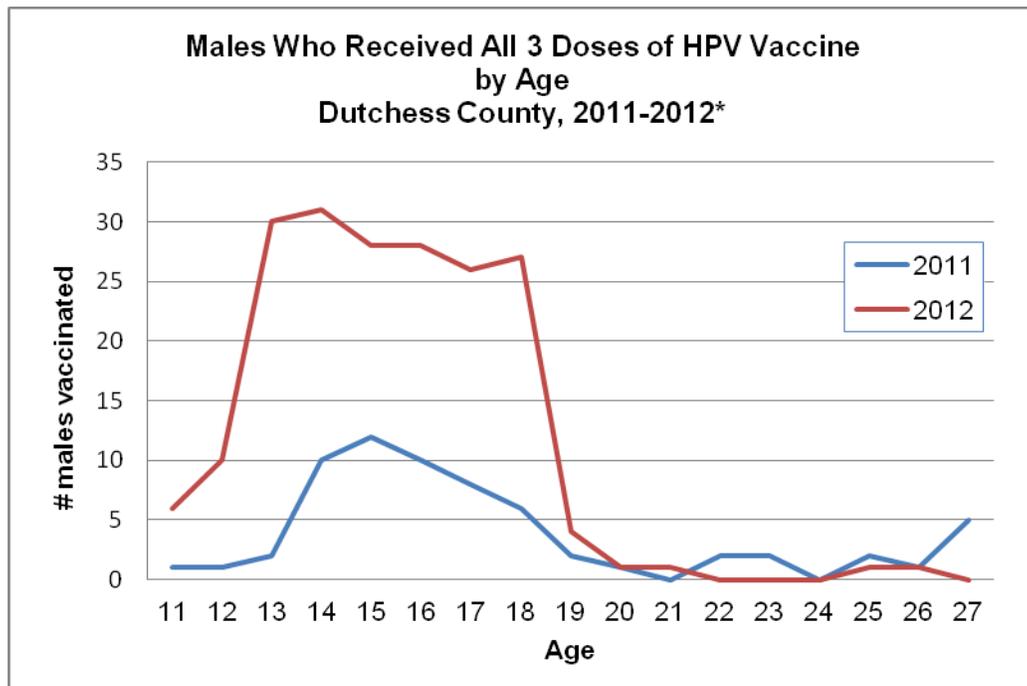
Figure 72



Data Source: NYS Immunization Information System

* Vaccination recommended in 2006 for females. 2006-2007 are not included due to scarcity of data

Figure 73



Data Source: NYS Immunization Information System

* Vaccination recommended in 2010 for males. 2011-2012 represent two full years of data

The County 3-dose immunization rate for females ages 13-17 was 17% in 2011 and 21% in 2012 (*Immunization Information System*). Male data are insufficient to compute meaningful rates at this time. The NYS rate for females in 2011 was 26% (*NYSDOH*), and nationally 32% in 2010.

Unfortunately, vaccination rates in teenage girls remain much lower in the U.S. than in other developed countries (80%). Nationally, within only four years of introducing the vaccine, the prevalence of HPV infections in girls aged 14-19 years has decreased by 56%. Health officials and physicians are concerned because vaccination rates did not increase at all between 2011 and 2012, despite evidence that the vaccine is safe and effective. This resistance to the HPV vaccine may be due in part to the stigma attached to vaccinating children against a sexually transmitted disease before they are sexually active, and because the purpose of the vaccine is misunderstood.

According to a 2010 CDC survey of females, the top five reasons given for non-vaccination were: vaccine not needed (19%), vaccine not recommended by the physician (14%), vaccine safety concerns (13%), lack of knowledge about the vaccine or the disease (13%), and daughter not sexually active (10%). A recent JAMA Pediatrics article reports that cost is a major barrier for many parents; additionally, even though parents reported that the recommendation from their healthcare provider is the key factor in their decision, many didn't get the recommendation (*Barriers to Human Papillomavirus Vaccination Among US Adolescents: A Systematic Review of the Literature, Holman et al. JAMA Pediatrics November 2013, published online*).

HPV vaccines have been shown to be highly effective at prevention. However, they should not replace Pap tests because they do not protect against all HPV types that can cause cancer (*National Cancer Institute, CDC*).

5. Environmental Health and Safety

a. Land Protection and Transportation Planning

i. Land Protection

Characterized in the past by a rural land use pattern of compact city, village, and hamlet centers surrounded by expansive farmland and natural countryside, Dutchess County has gradually been changed by suburban development patterns. In order to limit the fragmentation of communities and ecosystems, Dutchess County created a model Greenway Compact program in 2000. Since then, 29 out of the 30 municipalities have joined the Compact. They have cross-referenced into their zoning and subdivision regulations special land use guidelines included in the Dutchess County Greenway plan, Greenway Connections. One of the primary policies of Greenway Connections is to “focus development more efficiently in and around traditional centers and avoid overdevelopment of the rural surroundings.” As a complement to the historic centers, the County has mapped “greenspaces,” environmentally sensitive lands, working farms, and biodiverse networks. A *Centers and Greenspaces* initiative encourages local municipalities to identify both priority greenspaces for permanent protection and priority growth centers, with specific illustrations of what new construction could look like within walking distance of traditional centers. Seven municipalities have participated in this exercise. Particular attention is also being paid to key sites with express bus and regional rail access, in what is known as transit-oriented developments. Plans for areas around the train stations in Poughkeepsie, Beacon, Amenia, and Dover have been proposed.

Complementing the *Centers and Greenspaces* planning principles is a program which preserves and protects the most threatened and ecologically valuable open space and farmland, through the Dutchess County Partnership for Manageable Growth Open Space and Farmland Protection Matching Grant Program. This program was initiated by the County Executive and the County Legislature in 2000 to protect the county’s natural resources. Farmland is secured through the purchase of development rights, leaving the acreage protected by agricultural conservation easement in private ownership and on the tax rolls. Protection of open space (vacant, environmentally or culturally sensitive lands) involves the purchase by

municipalities or not-for-profit organizations of lands that must be accessible to the public for passive recreation. As of August 2013, the County has appropriated a total of \$6.6 million in serial bonds to fund the Open Space and Farmland Protection Program. Overall municipal funding appropriations for open space and farmland protection now total more than \$10 million, including \$5.2 million committed to specific acquisitions, while State grant awards total \$8.8 million. Since the program's inception, Dutchess County has completed twenty open space and farmland acquisitions, protecting 2,765 acres of productive farmland and 476 acres of public open space at a cost to the County of \$5.93 million for acquisitions costing a total of \$23.3 million, or a County share of 25%. In partnership with NYS, municipalities, local land conservancies, and private sources, the County has secured Peach Hill in the Town of Poughkeepsie, Stone Church in the Town of Dover, Carnwath Farms in the Town of Wappinger, the Rhineson property in the Town and Village of Rhinebeck, Locust Grove in the Town of Poughkeepsie, and the Forbus Butternut Park in the City of Poughkeepsie. A pending project will secure public parkland at Hiddenbrooke in the City of Beacon. The County has also purchased agricultural conservation easements in the Towns of Red Hook, Beekman, East Fishkill, Pine Plains, North East, and Union Vale.

ii. Transportation Planning

While the County's population grew 14% over the last two decennial census periods, total vehicle miles traveled more than doubled. According to the 2009-2011 American Community Survey, in Dutchess County most people (76.4%) drive alone to work. An estimated 8.5% carpool, 4.3% take mass transit, 4.4% walk, and 5.2% telecommute (work from home) (Table 38). The NYS Prevention Agenda 2017 objective for the state, including the City of New York, sets a goal of 49.2% of commuters using alternative forms of transportation (including public transportation, carpooling, biking, walking, and telecommuting). Dutchess County already exceeds the goals for walking and biking, but falls short of the public transit goal.

Table 38**Method of Commuting to Work (Workers 16 Years and Older)**

Method	Dutchess County	New York State	Healthy People 2020 Target
Drive alone	76.4%	54.1%	--
Carpool (car, truck or van)	8.5%	7.0%	--
Public transportation	4.3%	26.7%	5.5%
Walk	4.4%	6.4%	3.1%
Other (e.g. bike)	1.1%	1.8%	0.6% (bike trips)
Work from home/telecommute	5.2%	3.9%	5.3%

Data Source: U.S. Census Bureau, American Community Survey 2009-2011

As the designated Metropolitan Planning Organization (MPO) for Dutchess County, the Poughkeepsie-Dutchess County Transportation Council (PDCTC) is responsible for carrying out a cooperative and comprehensive multimodal transportation planning process for the County, to include the development and promotion of accessible pedestrian walkways and bicycle transportation facilities. Since 2010, the PDCTC, in partnership with the Dutchess County Department of Planning and Development, has completed sidewalk studies in the Village of Rhinebeck and Town of Hyde Park resulting in sidewalk repair projects and the construction of new crosswalks and sidewalks in these communities; in addition, the PDCTC recently initiated such a study for the Pine Plains Town Center. The Council is currently updating the 1996 Bicycle and Pedestrian Plan. The intent of the new Plan is to establish a vision for walking and bicycling, a set of project priorities, and design guidelines to serve as a resource for local municipalities. The update is a recommendation of *Moving Dutchess* – the Council’s Metropolitan Transportation Plan that was approved in 2011. The Council has been working with a Bicycle-Pedestrian Advisory Committee (BPAC) which includes representatives from local agencies, municipalities, stakeholder groups and the public. Current efforts include identifying and prioritizing improvements for walking and bicycling, documenting current levels of cycling and walking (the National Bicycle-Pedestrian Documentation Project), and summarizing results from a recent survey.

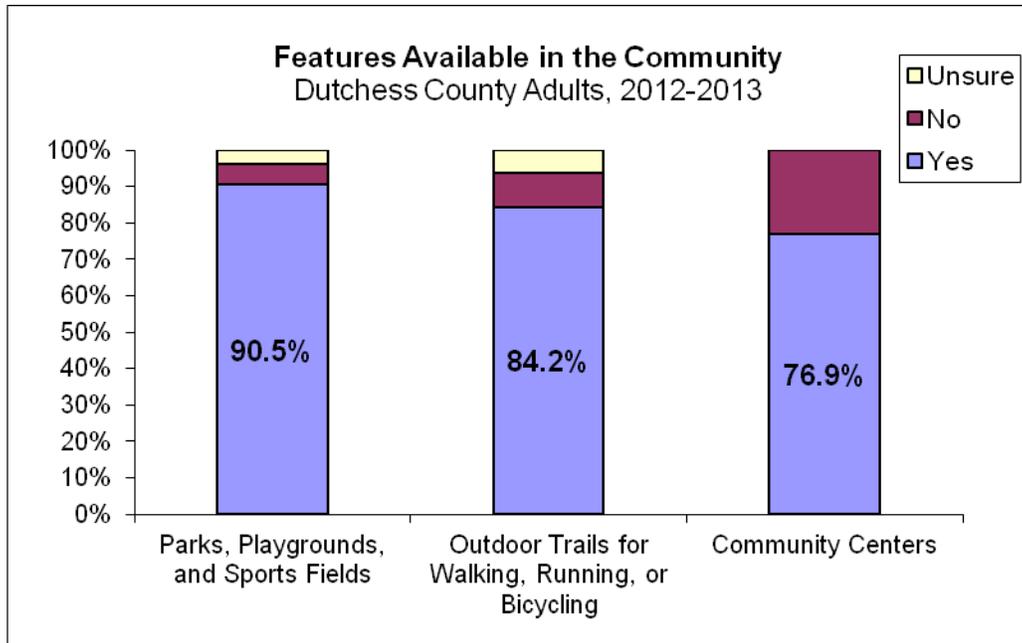
Dutchess County has developed two major rail trails, the Harlem Valley Rail Trail and the Dutchess Rail Trail. Both are parts of regional trail networks, with the Harlem Valley Rail Trail soon to be extended into Columbia County, and the Dutchess Rail Trail connecting to the Walkway Over the Hudson State Historic Park. It is estimated that 100,000 people use the Dutchess Rail Trail, and 50,000 use the Harlem Valley Rail Trail each year (Dutchess County Parks Department). Additionally, over the two program years of 2012 and 2013, approximately 25% of all Community Development Block Grants were awarded to pedestrian related infrastructure improvements with another 33% of the grants going to improvements at municipal parks.

Dutchess County Planning & Development, through partnerships with the Department of Health, Public Works, local communities, and land trusts, facilitates trail creation by offering trail mapping services to communities and neighborhood groups. The Department provides maps of potential trail locations that land owners and communities use to negotiate and formalize access easements for public trails, and offers free download of maps of public and private trail systems within the County (www.dutchess.gov). Launched in 2013, the Healthy Community Trail Map Series currently features more than 40 trail maps that are easily accessible by clicking on an interactive map of Dutchess County municipalities, or by searching for the trail name. Dutchess County actively promotes walking and bicycle activities, through ongoing partnerships with community groups. Partnerships with the National Park Service and the Town of Hyde Park have resulted in the “Hyde Park Healthy Trails Walkabout”, where walking is encouraged through the award of embroidered patches to people hiking at least five of the many trails located within the Town and the Roosevelt-Vanderbilt National Historic Sites. Bicycle Safety Rodeos and the free distribution of bicycle helmets are two activities of the Dutchess County Traffic Safety Board, a coalition of law enforcement, education, health and service agencies and individuals.

iii. Use of Parks and Trails

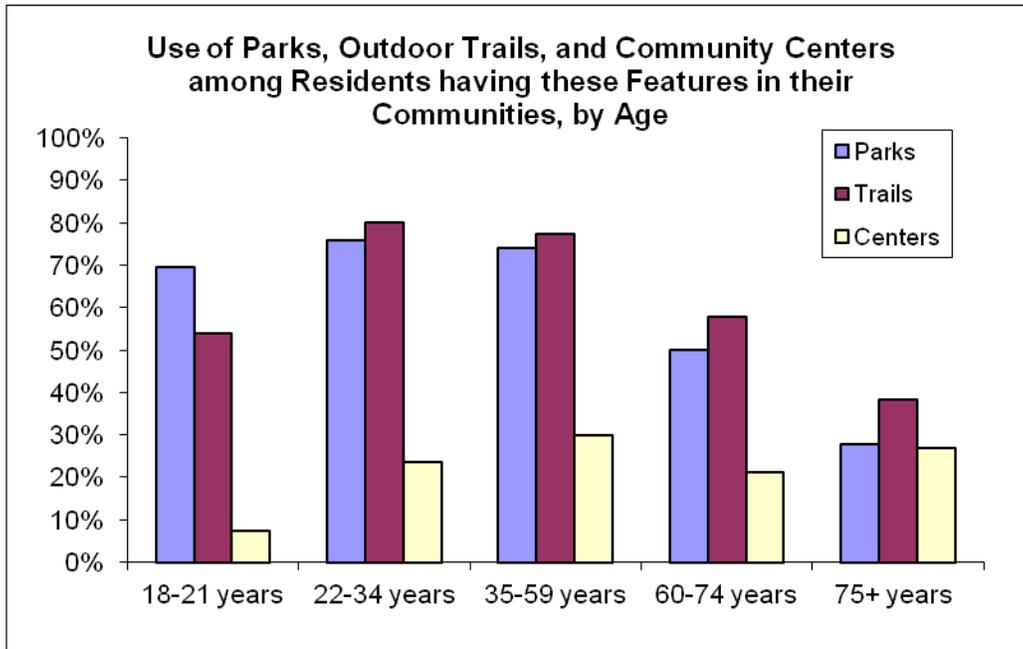
In 2012, 90.5% of Dutchess County residents reported that parks, playgrounds, and sports fields were available in their community (Figure 74). A large majority, 84.2%, also reported that outdoor trails were available in their community. Just over three-quarters of residents were aware of community centers. Most residents reported using their community parks, although usage declined after age 59 (Figure 75). The most frequent trail users were 22-59 year olds.

Figure 74



Data Source: Dutchess County ICA Community Health Survey 2012

Figure 75



Data Source: Dutchess County ICA Community Health Survey 2012

b. Water Quality

i. Public Water Supplies

The monitoring and assessment of water quality in the County by the Department of Health is managed through a number of programs which are described below. The combined assessments captured from these monitoring efforts enables trend information on the water quality in our County, and the identification of emerging problems, the determination of whether pollution control programs are working, and response to emergencies such as floods and spills.

The Department currently regulates approximately 684 public water supplies (PWS). These supplies include municipal water systems, residential public water systems, motels, restaurants, camps, schools, daycares, etc. that either meet the definition of a public water supply as defined by the NYS Sanitary Code or are a facility under permit. Samples are taken regularly at these sites to analyze for bacteria, inorganic compounds, and organic compounds. The frequency and number of samples taken at each supply is dependent on which PWS

definition is applicable to that supply. DCDOH staff work closely with owners and operators to assure compliance with NYS Part 5 rules and regulations that apply to PWS. Some PWS require the oversight of the supply by a Certified Water Operator. All Certified Water Operators are approved by the NYSDOH and must meet specific qualifications for the size and complexities of the PWS they will be certified to operate. From 2008-2010, an average of 1,278 site visits were conducted each year by the DCDOH, including routine sanitary surveys, complaint investigations, construction certifications, and other sampling visits. On average, there were 346 public health violations cited and 340 public health violations closed per year.

Adequate separation between water supplies and sewage disposal systems is a core component in the protection of water quality. The Environmental Engineering section of the DCDOH Environmental Health Services division is responsible for the review and approval of the arrangements for water supply and sewage disposal. The types of plans reviewed by the engineers include: individual lots, realty subdivisions, commercial projects, and municipal water and sewer. The engineers are also involved in change of use requests and sewage disposal system modifications, all of which have potential of impacting on-site or neighboring water supplies if sewage disposal systems are used beyond their design capacity.

In addition, the DCDOH Division of Environmental Health Services is copied on Spill Reports from the NYSDEC. These reports identify complaints received or "spills" reported to the NYSDEC. These spills are investigated by the NYSDEC and when it believes there could be an impact to wells on the property in question or neighboring properties, it requires well sampling. In addition to the NYSDEC assessing location impact of such spills, the Dutchess County Department of Health staff reviews the spill reports and conducts a search for any PWS that may be impacted due to the spill report. If a PWS is in the area, DCDOH will assess the significance of the spill report and may request sampling of the PWS or for the supply to sample at an increased frequency.

The Environmental Health Services Division also provides assistance to the public by advising them on what water quality results mean and how they can address water quality issues they may be facing. Individuals often reach out to the department via *Your Dutchess Direct* or by calling the department.

Since 2008, Dutchess County's public water supplies have not been fluoridated. The NYS Prevention Agenda 2017 objective is for 78.5% of all state residents served by community water systems to have optimally fluoridated water.

ii. Private Wells

Dutchess County's Comprehensive Private Well Testing Initiative was launched on September 6, 2007. The goal of this project was to collect information about Dutchess County private well water source quality that serve single-family, owner-occupied residences, type of water supply focusing on water quality that was not already monitored by our public water supply program. In the first phase, volunteers were recruited over a four week enrollment period. From the pool of applicants, 125 wells that serve single-family, owner occupied residences were randomly selected. A private contract laboratory collected and analyzed water samples for bacteria, organic and inorganic chemicals.

The second phase, which began in the fall of 2008, was carried out in a similar manner. An additional 125 wells serving single-family, owner-occupied residences were randomly selected from the original pool of applicants, and a private contract laboratory collected and analyzed water samples for bacteria, organic and inorganic chemicals. Some local municipalities have created laws that require testing of wells during real estate transactions. The DCDOH Environmental Health Services division coordinates with the Town of East Fishkill, the Town of Fishkill, and Town of Wappinger to post the results of such testing on the County website. The Department of Health also reviews the results of these tests and notifies residents of results that may pose a public health impact.

c. Air Quality

i. Air Quality Index

The U.S. Environmental Protection Agency (EPA) calculates a daily Air Quality Index (AQI) for five major air pollutants regulated by the Clean Air Act: ground-level ozone, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide. For each of these pollutants, EPA has established national air quality standards to protect public health. AQI values are classified in six categories ranging from Good to Hazardous. Annual AQI summaries are available for all counties based on daily air monitoring. Although the AQI is based on five different pollutants, some counties (including Dutchess County) do not have monitors for all five pollutants. The Dutchess County AQI is based on sampling for ground-level ozone, which is a major component of smog and associated with adverse respiratory outcomes. Between 2009-2012, there was only one day that was classified as Unhealthy, and an average of two days per year classified as Unhealthy for Sensitive Groups, and approximately 14 days per year classified as Moderate (Table 39).

Table 39
Number of Days with AQI Values > 50, by Category
Dutchess County 2009-2012

Year	Moderate (51-100)	Unhealthy for Sensitive Groups (101-150)	Unhealthy (151-200)	Very Unhealthy (201-300)	Hazardous (301-500)
2009	14	1	0	0	0
2010	16	4	0	0	0
2011	13	1	1	0	0
2012	12	2	0	0	0

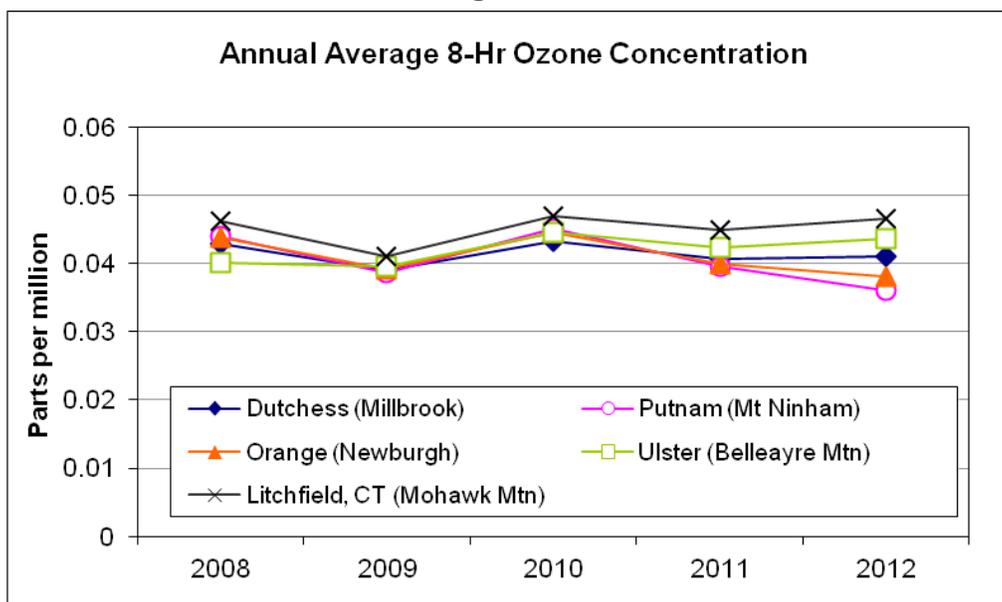
Data Source: US Environmental Protection Agency, NYS Dept of Environmental Conservation

ii. Trends by Pollutant

Ozone

Ground-level ozone is a criteria air pollutant that is formed in the presence of sunlight when nitrogen oxides and volatile organic compounds react, and is a major component of smog. Ozone levels are highest in the summer months. Exposure to ground level ozone can trigger respiratory symptoms and can worsen asthma, bronchitis, and emphysema. Dutchess County's ozone monitor is stationed in the town of Millbrook at the Institute of Ecosystem Studies, a suburban/rural setting in the center of the county. Over the past five years, the annual average ozone concentration consistently paralleled measurements taken in surrounding counties, with no overall increase or decrease (Figure 76). Dutchess County's values were typically at or below the regional average of the five counties. In 2012 there were three measurements that exceeded the EPA's ozone regulatory standard of 0.075 parts per million.

Figure 76

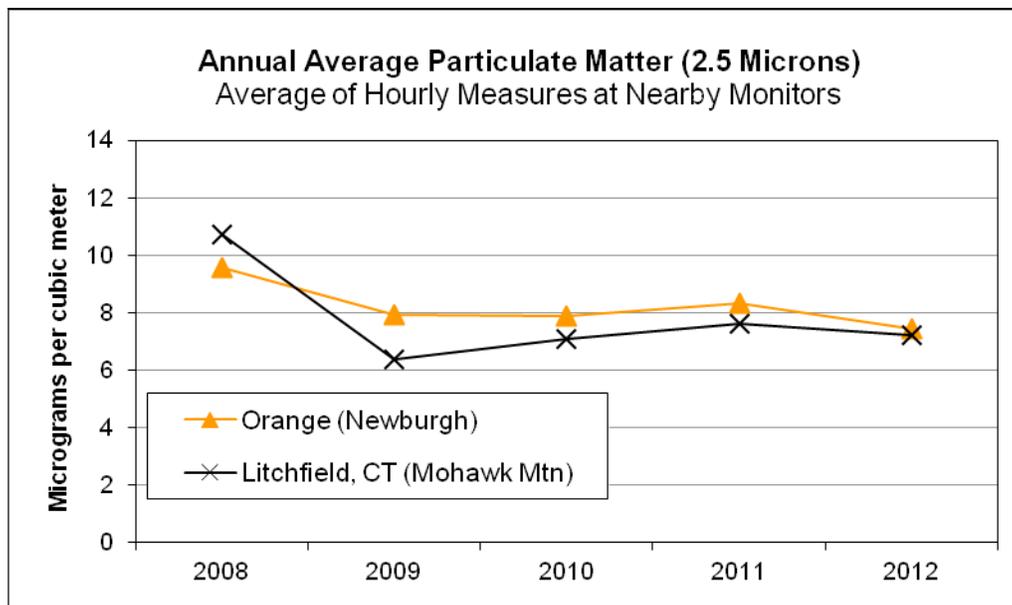


Data Source: US Environmental Protection Agency, NYS Dept of Environmental Conservation

Particulate Matter

Particulate matter (PM) is made up of a mixture of substances including acids, organic chemicals, metals, and soil/dust particles suspended in the air. PM is classified and regulated according to the size of the particles, fine (PM_{2.5}, particulate matter smaller than 2.5 microns) or coarse (PM₁₀, particulate matter between 2.5 and 10 microns in diameter). Some particulates come from roadways, fields, and fires while others come from industrial emissions and motor vehicle exhaust. Fine particles, PM_{2.5}, penetrate deeply into the lungs, and exposure is linked with respiratory symptoms, aggravated asthma, and increased rates of irregular heart rhythms, heart attacks, and premature mortality. Those with heart or lung diseases, children and older adults are most at risk. The closest monitors to Dutchess County are located in Orange County, NY (Newburgh) and Litchfield, CT (Mohawk Mountain). There appeared to be a slight decline in PM_{2.5} levels measured at these stations between 2008 and 2012 (Figure 77), and since 2009 the annual hourly averages were consistently below the EPA's regulatory standard of 12.0 micrograms per cubic meter (annual).

Figure 77

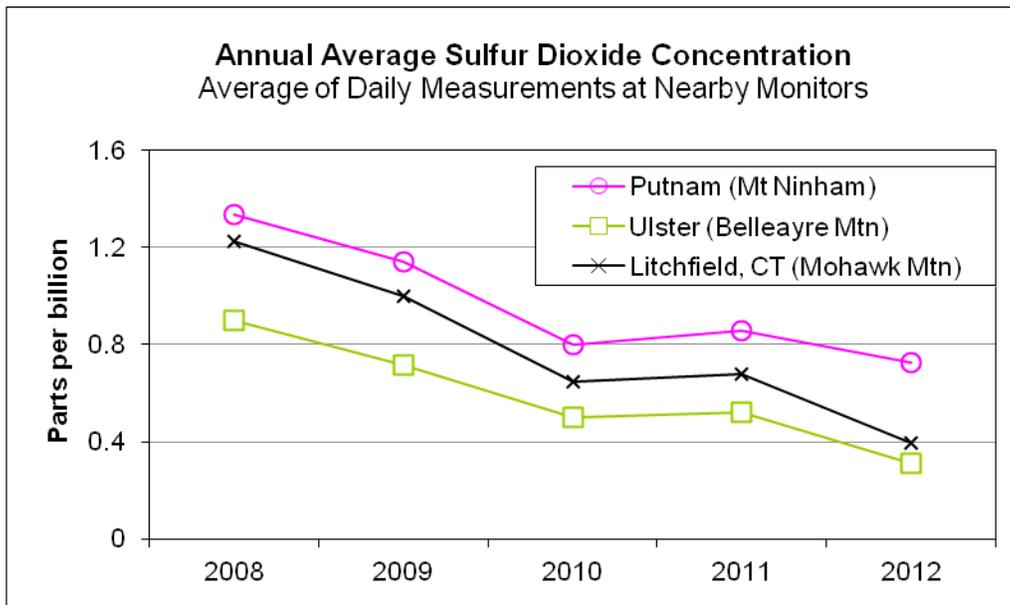


Data Source: US Environmental Protection Agency, NYS Dept of Environmental Conservation

Sulfur Dioxide

Sulfur dioxide (SO₂) is a type of highly reactive gas that is primarily emitted from the combustion (burning) of fossil fuels at industrial sites. Breathing sulfur dioxide can trigger airway constriction and is therefore particularly problematic for people with asthma. Oxides of sulfur can also react with other compounds in the air to form particulate matter (see above). The three nearest monitors for sulfur dioxide are in Putnam County, Ulster County, and Litchfield, CT. There was a steady decline in SO₂ measurements at all three monitors from 2009 through 2012 (Figure 78). In 2012, all measurements were well below the EPA's regulatory standards.

Figure 78



Data Source: US Environmental Protection Agency, NYS Dept of Environmental Conservation

d. Lead Poisoning and Other Poisoning Prevention

i. Childhood Lead Poisoning

Lead is one of the most common environmental toxins affecting young children in New York State (NYS). Lead poisoning, even in very small quantities, is associated with serious and lifelong adverse health, developmental and cognitive outcomes that are preventable. Socio-economically disadvantaged children are disproportionately affected by lead poisoning.

Dust from peeling lead paint is the most common cause of childhood lead poisoning. Many older buildings may have lead paint on walls, windows, doors, and other surfaces. Pre-1978 housing poses the greatest hazard. According to the U.S. Census, Dutchess County's pre-1940s' housing stock constitutes approximately 19% of all housing stock, and, in the City of Poughkeepsie, 40% of housing stock housing is pre-1940s. Additional sources of lead exposure may include lead-contaminated soil and water, imported food, pottery and cosmetics, traditional medicines and some imported children's toys and jewelry. Children may also be exposed to lead if their parents or guardians have occupations or hobbies that expose them to lead. Medical treatment options for lead poisoning are limited.

Young children are at highest risk for lead exposure, especially under the age of six, when their nervous systems are still developing. Early detection through blood lead screening and prompt treatment have virtually eliminated deaths and severe poisonings once common some 30 years ago (*Data Source: NYSDOH Surveillance Report, 2009*).

Under current NYS Public Health Law, healthcare providers are required to test all children for lead at or around age one year and again at or around age two years. Healthcare providers are also required to assess all children age six months to six years at least once annually for lead exposure, with blood lead testing for all children found to be at risk based on those assessments.

There is no Healthy People 2020 target for eliminating elevated blood lead levels among children. In 2012, the CDC updated its recommendations on children's blood lead levels. A reference level of 5 micrograms per deciliter (5 µg/dL) was established to identify children

with blood lead levels that are much higher than most children’s levels. This new level is based on the U.S. population of children ages 1-5 years who are in the highest 2.5% of children when tested for lead in their blood. This reference value is based on the 97.5th percentile of the National Health and Nutrition Examination Survey (NHANES)’s blood lead distribution in children. CDC will update the reference value every four years using the two most recent NHANES surveys.

Until recently, children were identified as having a blood lead “level of concern” if the test result was $\geq 10 \mu\text{g/dL}$ of lead in blood. CDC is no longer using the term “level of concern” and is instead using the reference value to identify children who have been exposed to lead and who require case management.

County screening rates are consistent with those of NYS (excl NYC) and indicate that increasing screening rates is warranted.

Table 40
Blood Lead Level Screening Rates – Birth Cohort 2007

Data Period 2008-2010	Dutchess County		NYS (excl NYC)
	# Children	Percent	Percent
Children with a lead screening by 9 months	117	3.8	2.9
Children with a lead screening by 18 months	2,137	69.4	65.4
Children with at least two lead screenings by 36 months	1,607	52.2	45.2

Data Source: NYSDOH Health Indicator Reports

The incidence of confirmed elevated blood lead levels (EBLLs) of $\geq 10 \mu\text{g/dL}$ among children less than six years of age has remained fairly constant since 2008. The only rate currently available for NYS (excl NYC) is for the period 2008-2010 (7.8/1,000 children tested) and is higher than the Dutchess County rate for that period. The 2010-2012 County incidence rate of 6.0/1,000 children tested reflects recent decreases in 2011 and 2012 (5.5 and 4.4/1,000 children respectively) and may be indicative of a downward trend.

Table 41

**Incidence of Elevated Blood Lead Levels $\geq 10 \mu\text{cg/dL}$ among Children ≤ 6 Years of Age
Dutchess County**

Period	# of Children Newly Identified 10-14 $\mu\text{cg/dL}$	# of Children Newly Identified 15-19 $\mu\text{cg/dL}$	# of Children Newly Identified $\geq 20 \mu\text{cg/dL}$	Total # of Children Newly Identified $\geq 10 \mu\text{cg/dL}$	# of Children Tested	Incidence Rate per 1,000 Children Tested $\geq 10 \mu\text{cg/dL}$
2008-2010 average	23	7	5	35	5,347	6.5
2009-2011 average	20	8	8	36	5,408	6.6
2010-2012 average	18	8	7	33	5,443	6.0

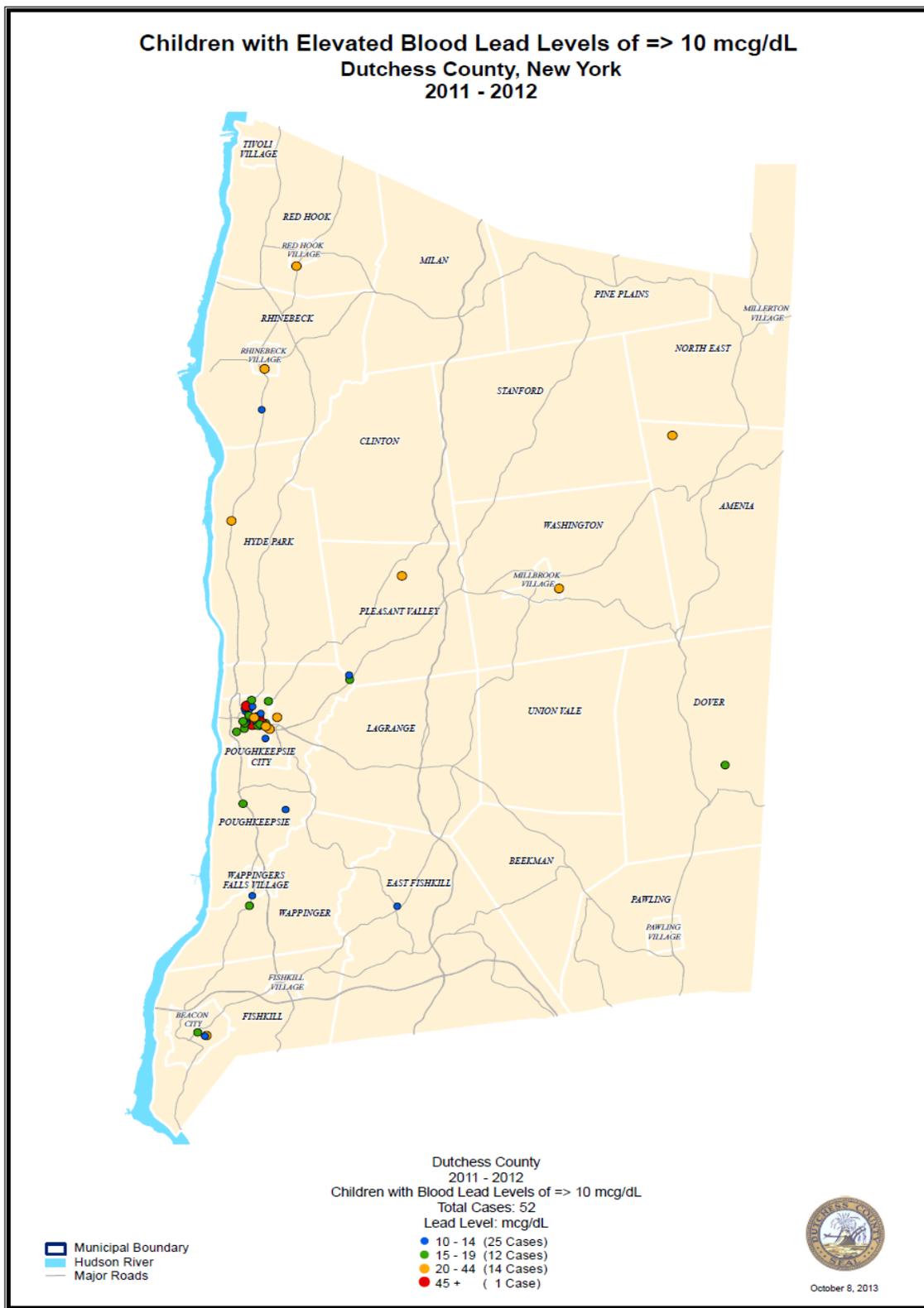
Data Source: NYS Childhood Lead Poisoning Prevention Program, NYSDOH LeadWeb

The incidence of EBLs $\geq 10 \mu\text{cg/dL}$ is concentrated in the City of Poughkeepsie, comprising three quarters of all County EBLs (Map 4). In a similar pattern, the majority of 5-9 $\mu\text{cg/dL}$ elevations occur in the City of Poughkeepsie but also appear in the Wappingers and Beacon areas, albeit in far smaller concentrations (Map 5).

Dutchess County Government is working with the City of Poughkeepsie to help prevent childhood lead poisoning. A New York State Department of health funded program, the *Lead Primary Prevention Program*, is targeting the City of Poughkeepsie homes in the 12601 zip code, which the State has identified as the zip code with the highest annual incidence of EBL $\geq 10 \mu\text{cg/dL}$ in the County. This program is described in detail on the Dutchess County Department of Health’s website.

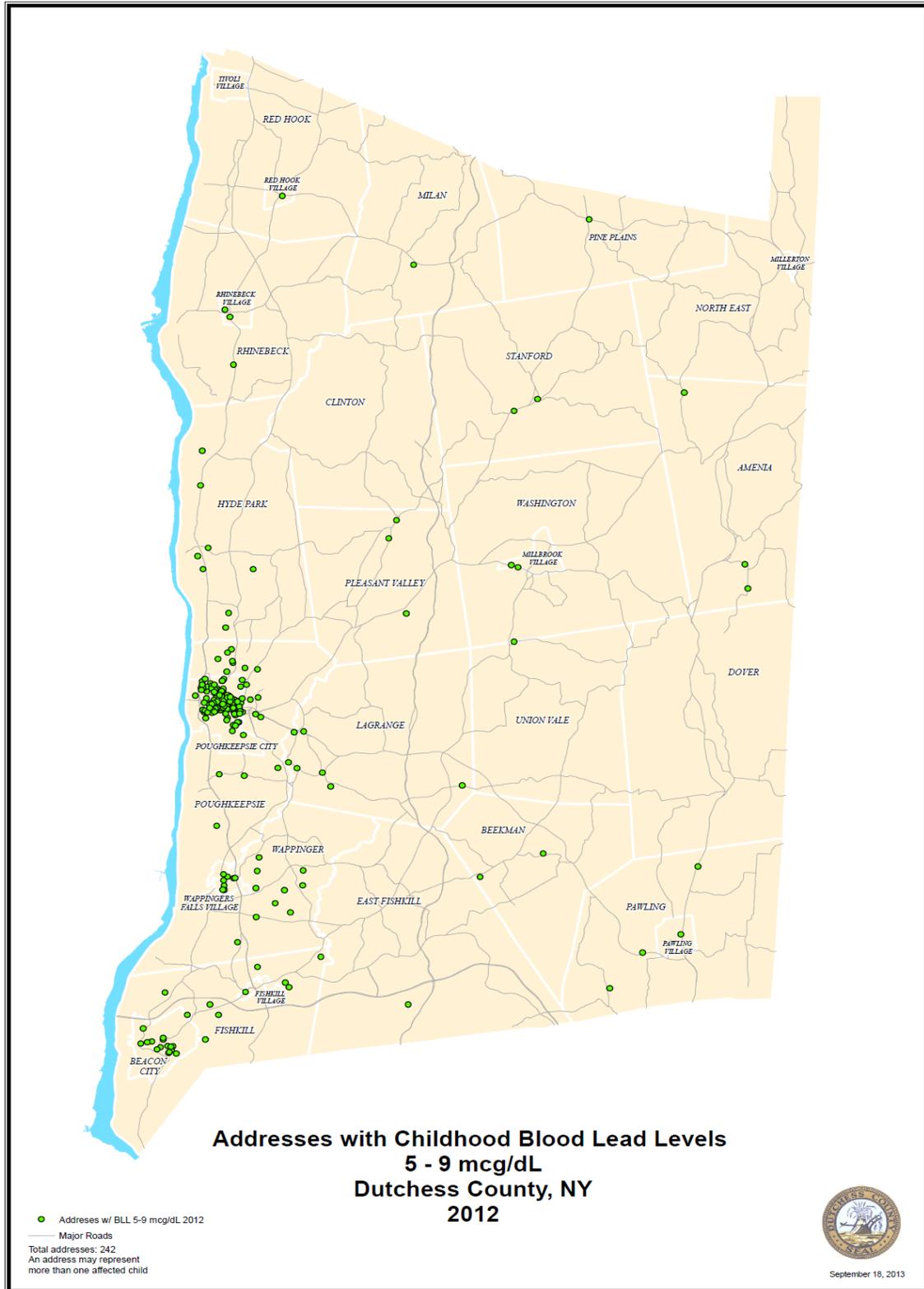
Map 4

Children with Elevated Blood Lead Levels of ≥ 10 mcg/dL Dutchess County, New York 2011 - 2012



Data Source: NYSDOH LeadWeb

Map 5



Data Source: NYSDOH LeadWeb

ii. Other Poisoning - Poison Center Reports

Poison Centers provide medical advice and emergency referral around the clock for healthcare providers and the general public. The majority of Poison Center calls pertain to suspected exposures in young children less than six years old. Medications and drugs are the predominant type of unintentional exposure reported in all age groups, accounting for over 40% unintentional exposures reported to the Upstate Poison Center in 2012. Analgesics (pain medications) are the most common medication reported, making up 17.6% of drug related exposures and 7.5% of all reported exposures in 2012. For more information on substance-related trends, see *Mental Health and Substance Abuse*. Nationally in 2011, approximately 15% of Poison Center calls resulted in a health effect judged to be related to poisoning, which was most often minor in nature (*American Association of Poison Control Centers 2011 Annual Report*).

Table 42

Top 10 Unintentional Exposures Reported to the Upstate Poison Control Center, by Age
Dutchess County Callers, 2012

Children <6 Years (n = 663)	Children 6-19 Years (n=176)	Adults 20+ Years (n=349)
Medications/Drugs/Supplements 41.9%	Medications/Drugs/Supplements 46.0%	Medications/Drugs/Supplements 37.5%
Cosmetics and Hygiene Products 15.4%	Cosmetics and Hygiene Products 9.7%	Household Cleaners 8.6%
Foreign Bodies & Misc 10.4%	Household Cleaners 8.5%	Cosmetics and Hygiene Products 7.4%
Household Cleaners 10.0%	Foreign Bodies & Misc 7.4%	Other Chemicals 6.0%
Plants 3.5%	Arts and Crafts Supplies 6.3%	Bites and Stings 5.4%
Arts and Crafts Supplies 3.3%	Plants 2.8%	Pesticides 4.6%
Pesticides 2.1%	Other Chemicals 2.8%	Fuels 4.3%
Deodorizers 1.8%	Pesticides 2.3%	Foreign Bodies & Misc 4.3%
Alcohols 1.2%	Deodorizers 2.3%	Plants 2.0%
Other Chemicals 1.2%	Other Non-Drug Substances 2.3%	Tie: Auto/Boat Products & Food Poisoning 1.7%

Data Source: Upstate Poison Control Center

e. Food Safety

A number of food-borne illnesses are reportable to the NYSDOH. These include Botulism, Campylobacteriosis, Cryptosporidiosis, Cyclosporiasis, E. coli O157:H7 infection, Giardiasis, Listeriosis, Salmonellosis, and Shigellosis. It is important to note that although these illnesses are reportable diseases, the numbers presented in this report are only based on lab-confirmed cases that have had tests completed. A large number of illnesses caused by these disease agents go undetected within the public, particularly if the illness is not severe enough to warrant medical attention.

An important component of food safety is the prompt follow up and investigation of suspected food-borne illnesses. DCDOH conducts surveillance throughout the County and any suspected or confirmed case of a reportable disease that may be food-related is investigated, particularly within regulated facilities (i.e. restaurants and schools). Prompt reporting and investigation, determination of suspected etiological agent and enactment of preventative measures can reduce/prevent spread of disease and lead to less morbidity.

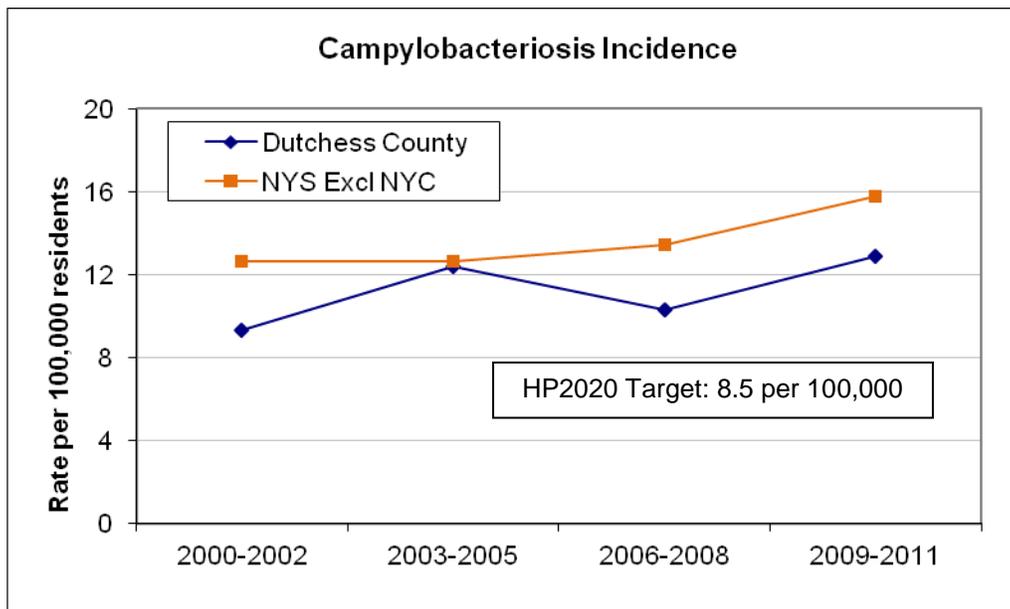
i. Botulism

Botulism is a rare, but serious reportable disease that can cause paralysis and death. There were no reported cases in Dutchess County from 2000-2011. During this time period there were 17 cases statewide (excluding NYC), for an average of 1.4 cases per year.

ii. Campylobacteriosis

Campylobacteriosis is an infectious disease caused by the ingestion of the *campylobacter* organism, which can cause diarrhea and fever. Rates of illness in Dutchess County are generally lower than the statewide average, excluding NYC. There was a slight rise in both rates over the past decade, moving away from the Healthy People 2020 target of 8.5 cases per 100,000 population (Figure 79).

Figure 79



Data Source: NYSDOH Communicable Disease Reports

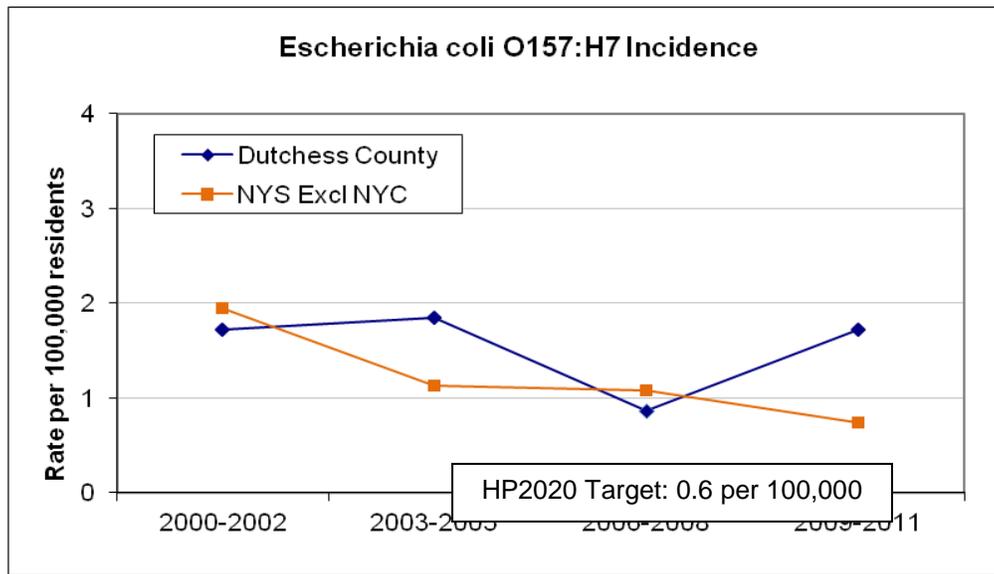
iii. Cryptosporidiosis

Cryptosporidium is a protozoal parasite spread by fecal-oral transmission, often through contaminated water. Cryptosporidiosis is rare, with rates typically below 1 case per 100,000 residents annually in Dutchess County. A small spike in cases occurred in 2005, locally and across the state, attributed to an outbreak associated with swimming areas. There is no corresponding Healthy People 2020 target for cryptosporidium infection rates.

iv. Escherichia coli (E. Coli O157:H7)

E. coli is a bacterium commonly found in the lower intestines; while some strains are harmless, other can cause serious food-borne illness via fecal-oral transmission. *E. coli* infection is also a rare condition in Dutchess County and rates were similar to the statewide average, excluding NYC, from 2000-2011. The NYS average in 2009-2011 approached the Healthy People 2020 target of 0.6 cases per 100,000 population, which, if maintained, would mark a 50% reduction from the national average in 2006-2008.

Figure 80

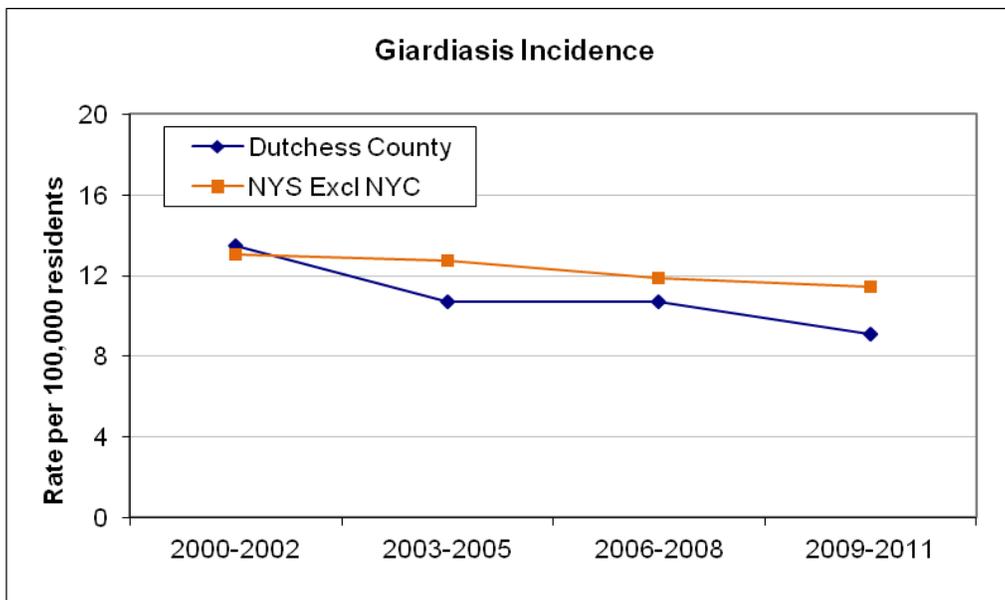


Data Source: NYSDOH Communicable Disease Reports
*Numerator < 10 in 2006-2008 in Dutchess County, rate may be unstable

v. Giardiasis

Giardiasis is a parasitic disease caused by a protozoa organism, *Giardia lamblia*, transmitted via the fecal-oral route. Rates were generally lower than NYS (excluding NYC), and declined from 2000-2011. There is no corresponding Healthy People 2020 target for giardiasis.

Figure 81



Data Source: NYSDOH Communicable Disease Reports

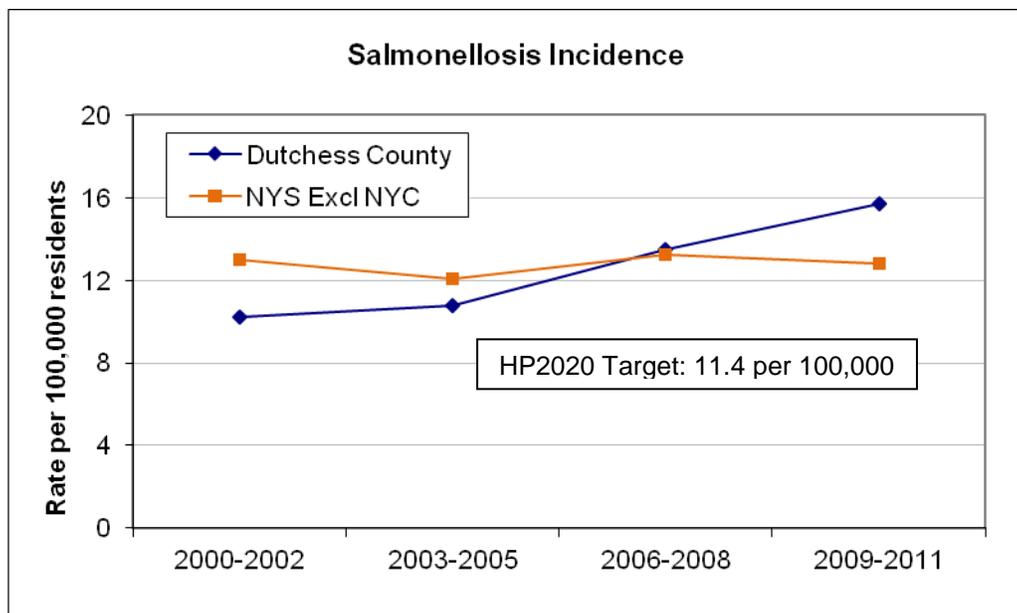
vi. Listeriosis

Listeriosis is a bacterial infection that can impact the central nervous system, typically in those who are immunocompromised, very young, very old, and pregnant women. Listeria infection is very rare, with rates below 1 case per 100,000 people annually in Dutchess County and New York State, exclusive of NYC. Nonetheless, both the state and county rate were higher than the Healthy People 2020 target of 0.2 cases per 100,000 population.

vii. Salmonellosis

Infection from *Salmonella* bacteria can cause diarrhea, fever, vomiting and abdominal cramps. In severe cases, patients may need to be hospitalized for rehydration and treatment with antibiotics. It is usually contracted from sources such as raw and undercooked poultry, meat, and eggs, or other foods that become contaminated with the bacteria during handling and preparation. Contact with reptiles that carry the bacteria in their intestines is another source of transmission. The average rate of Salmonellosis increased between 2000 and 2011 in Dutchess County and exceeded the Healthy People 2020 target of 11.4 cases per 100,000, while the statewide rate was relatively constant.

Figure 82

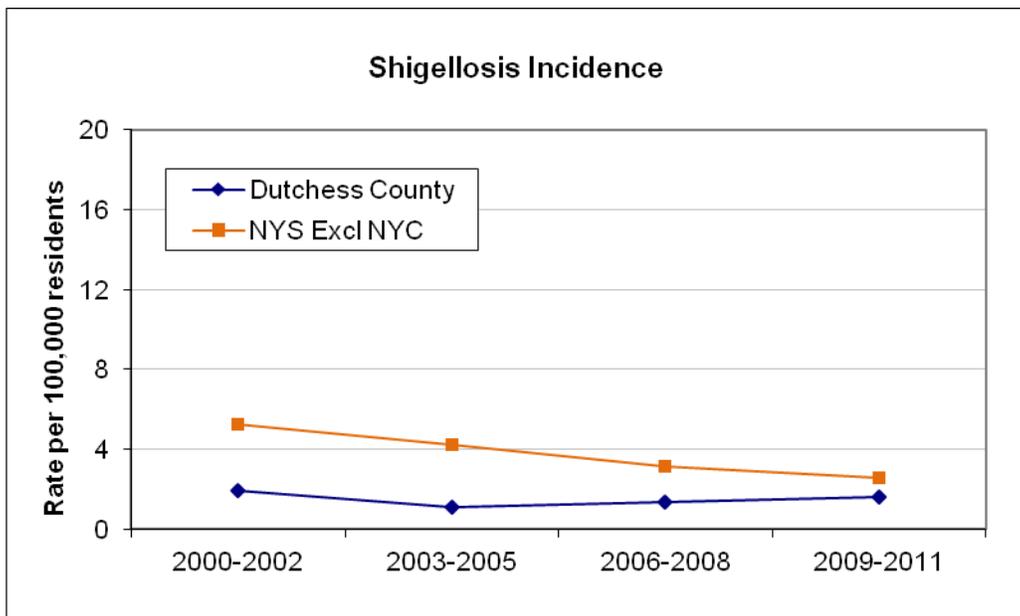


Data Source: NYSDOH Communicable Disease Reports

viii. Shigellosis

Shigellosis is caused by infection with *Shigella* bacteria, with symptoms ranging from mild abdominal discomfort to severe diarrhea, fever, and vomiting. It is transmitted through the fecal-oral route from food contaminated with the bacteria or in polluted water (largely in the developing world). Shigellosis rates declined statewide from 2000-2011; the rates in Dutchess County did not change over the time period but were lower than the state average. There is no corresponding Healthy People 2020 target for shigellosis.

Figure 83



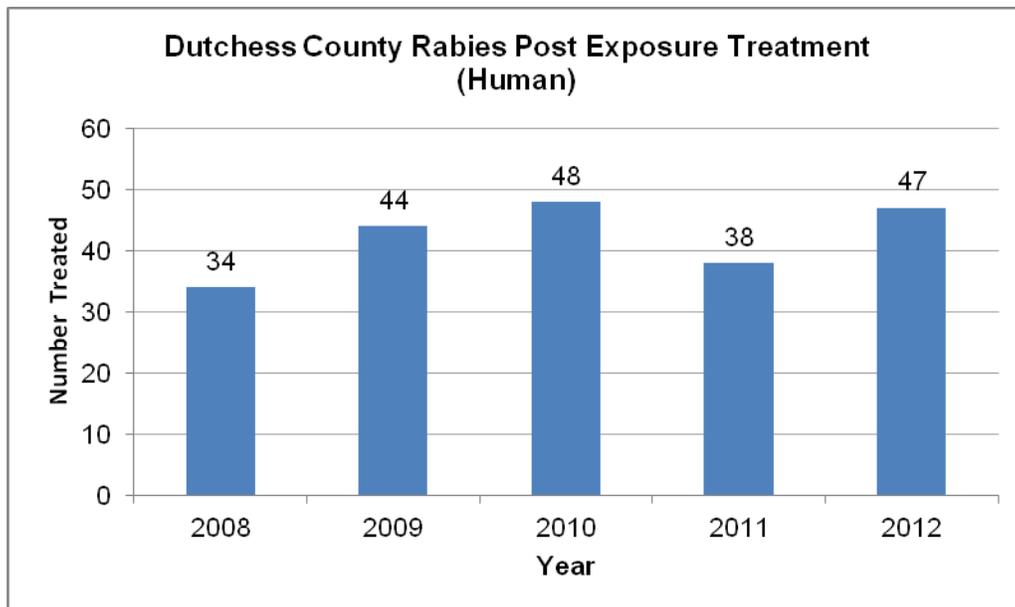
Data Source: NYSDOH Communicable Disease Reports
*Numerator < 10 in Dutchess County in 2003-2005, rate may be unstable

f. Animal and Insect-borne Diseases

i. Rabies

Rabies virus is generally transmitted through the bite of an infected animal. It is fatal unless prophylactic vaccine is administered soon after exposure. In the early 1900's there were close to 100 human rabies deaths per year in the U.S., but in recent years there have been less than two deaths annually as a result of the widespread vaccination of domestic animals and the improvement of prophylactic treatment. Since 2008, 42 Dutchess County residents on average each year were treated for rabies exposure, and there were no deaths (Figure 84). This is a decline from an average of 87 people treated per year in the early 2000s, which may be related to increased pet vaccination and better public understanding of rabies transmission.

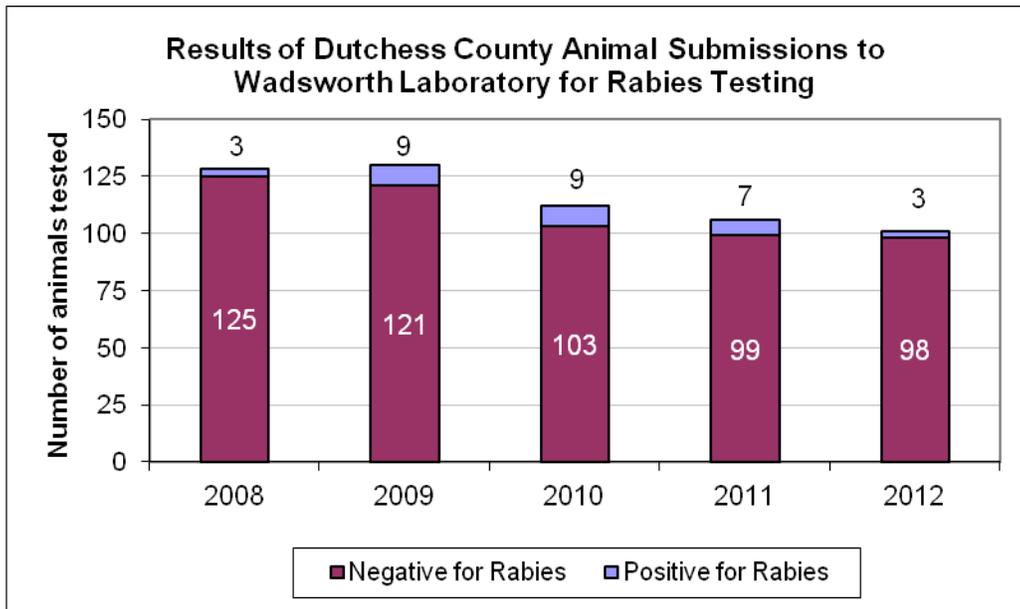
Figure 84



Data Source: DCDOH Environmental Division

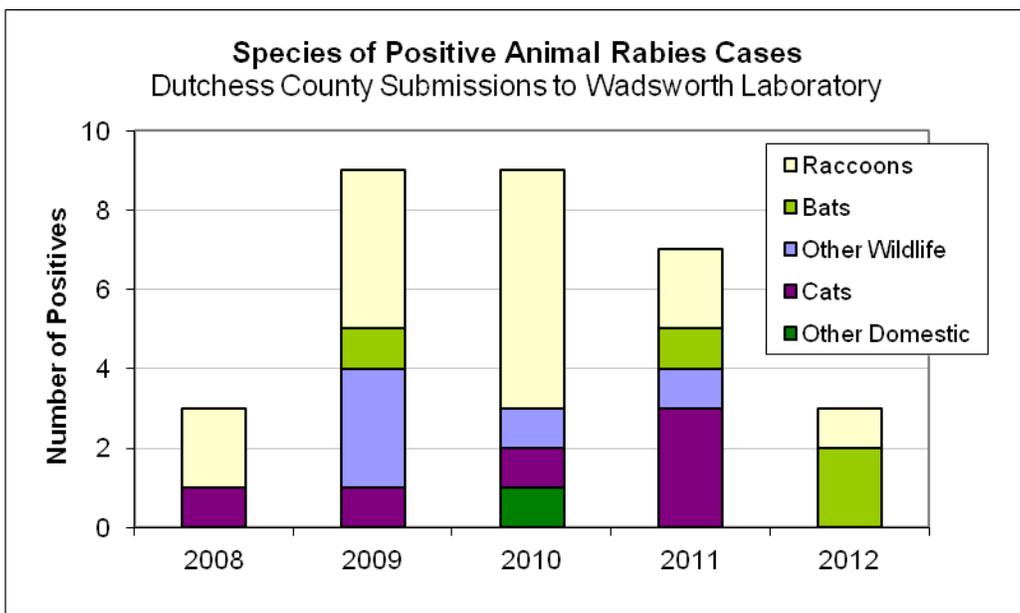
Animals suspected of having rabies are sent to the NYSDOH, Wadsworth Center Laboratory, for testing. In Dutchess County there are usually less than 10 animals that test positive for rabies each year (Figure 85), typically raccoons or bats. The majority of domestic animals that test positive are cats (Figure 86).

Figure 85



Data Source: NYSDOH Wadsworth Center Rabies Laboratory

Figure 86



Data Source: NYSDOH Wadsworth Center Rabies Laboratory

The DCDOH, in cooperation with the Dutchess County SPCA and a number of community partners (e.g., Animal Rescue Foundation), holds rabies vaccination clinics each year for domestic pets. The clinics are open to the public and free or low-cost to Dutchess County residents. Since 2009 there have been six clinics per year, and an average of 975 pets vaccinated per year (Table 43).

Table 43
Dutchess County Rabies Vaccination Clinics

	2009		2010		2011		2012	
	# Clinics	# Pets Vacc.						
DCDOH	3	940	3	519	3	681	3	660
Community Partners	3	270	3	356	3	244	3	230

Data Source: Dutchess County Department of Health Environmental Division

ii. Lyme Disease and Other Tick-borne Diseases

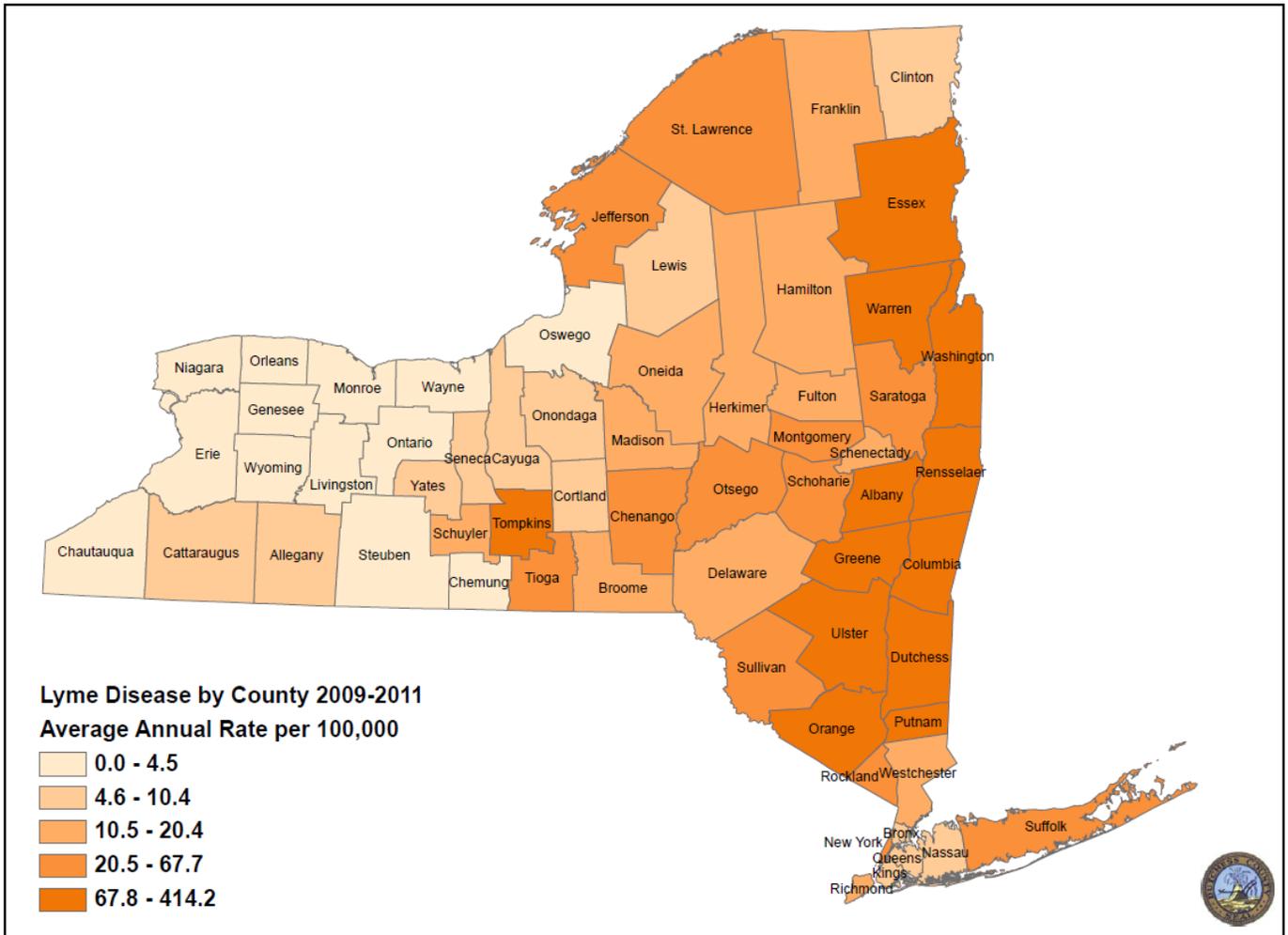
Lyme Disease

Lyme disease is carried by black-legged (deer) ticks. It is characterized by a distinctive skin lesion (*erythema migrans*) around the bite that may appear as a “bulls eye,” but this is not always observed in all cases. Early symptoms include fever, fatigue, and headache. If untreated, neurologic abnormalities, chronic arthritis, and rarely, cardiac abnormalities, may develop and become chronic.

In 2008, the CDC revised the case definition for Lyme disease to include confirmed and probable cases. Pre-2008 data should not be combined with nor compared to 2008 and subsequent years.

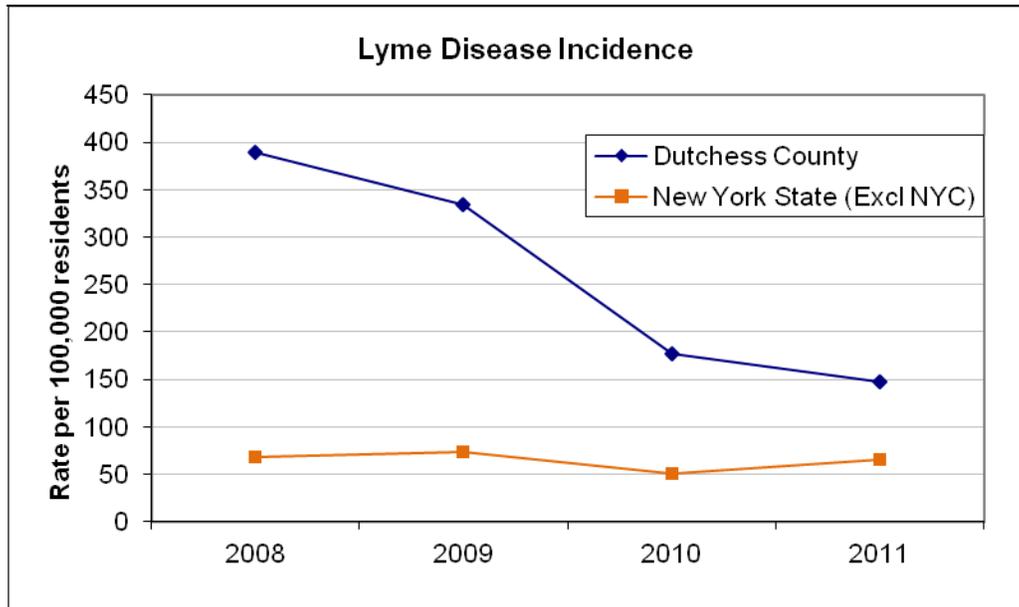
The Hudson Valley Region has some of the highest Lyme disease rates in NYS. Dutchess County rates have decreased dramatically since 2008 but still remain high (Map 6). This disease continues to be an important County public health concern and has been identified by County residents as one of the top priority issues in the County’s Prevention Agenda.

Map 6



Data Source: NYSDOH Communicable Disease Registry

Figure 87



Data Source: NYSDOH Communicable Disease Registry⁷

While Lyme disease is the most widespread of arthropod-borne diseases in the County, there are other diseases on the rise that can be transmitted by infected ticks. While Healthy People 2010 had a goal for Lyme disease, there is no 2020 target.

Anaplasmosis and Ehrlichiosis

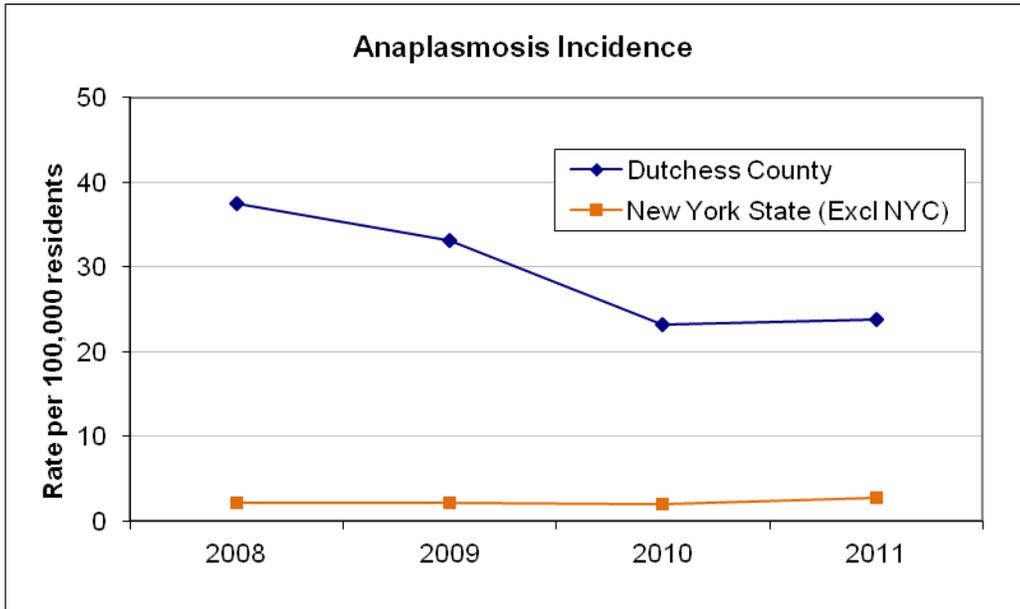
Beginning in 2004, the illness previously known as Human Granulocytic Ehrlichiosis, caused by *Anaplasma phagocytophilum* bacteria transmitted by the deer tick, became redefined as a distinct condition known as Human Anaplasmosis. The illness known as Human Monocytic Ehrlichiosis remains known as Ehrlichiosis and is caused by *Ehrlichia chaffeensis* bacteria transmitted by the lone-star tick, which is less commonly found in Dutchess County.

Anaplasmosis is the next most common tick-borne illness after Lyme disease, and begins with general symptoms (fever, headache, pain, malaise) that can become serious if untreated. The fatality rate is about 1% (CDC). Ehrlichiosis infection shares similar characteristics and may also include rash; the estimated fatality rate is 1.8%.

⁷ Many counties, including Dutchess, participate in sentinel surveillance where they investigate only a sample of positive laboratory results. Since 2009 in these counties, the number of actual cases has been extrapolated using a data model to generate estimates of the total number of cases.

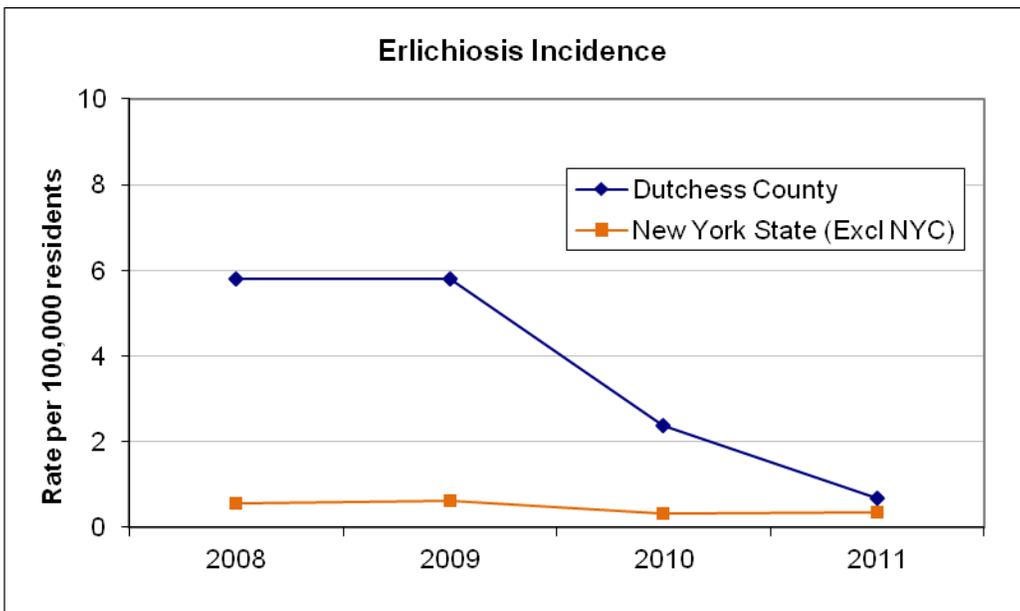
The incidence of anaplasmosis and ehrlichiosis mirrored trends in Lyme disease over the same time period from 2008-2011 (Figures 88 and 89). Both rates are typically much higher than the statewide average, which is less than two cases per 100,000 residents annually.

Figure 88



Data Source: NYSDOH Communicable Disease Registry

Figure 89

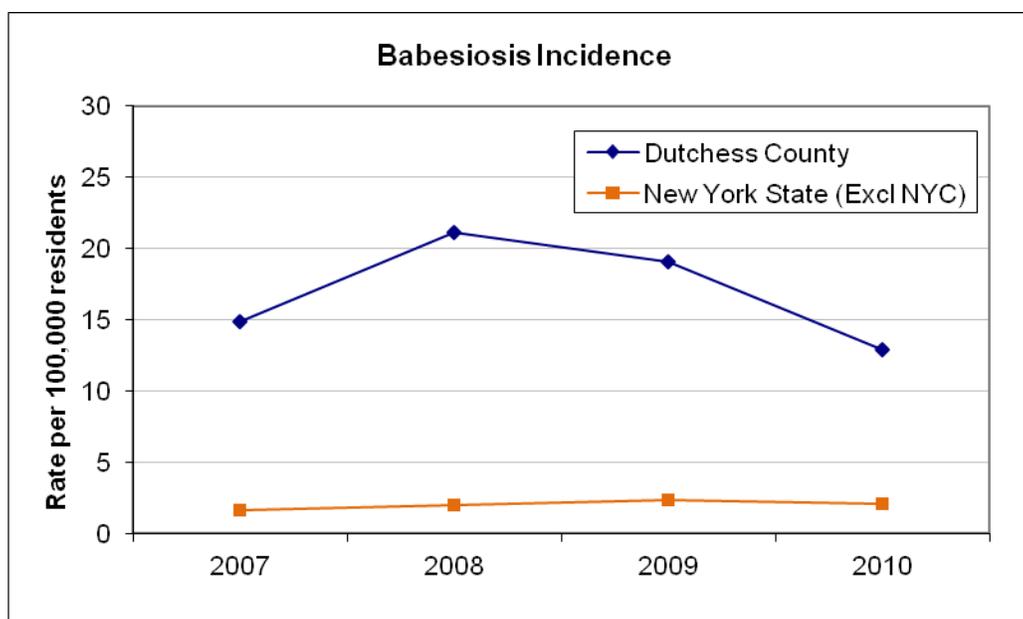


Data Source: NYSDOH Communicable Disease Registry

Babesiosis

Babesiosis is a parasitic infection carried in ticks that can cause severe and sometimes fatal illness, however most infections do not result in any symptoms. The incidence of Babesiosis is approximately 15 times higher in Dutchess County than in the rest of NYS (Figure 89). In 2011, the case definition changed to include both confirmed and probable cases. Data for 2011 (17.8 cases per 100,000) are not presented in the chart as they should not be directly compared with earlier rates.

Figure 90



Data Source: NYSDOH Communicable Disease Registry

Powassan Virus

Powassan Virus (POWV) is a very rare disease transmitted primarily by the groundhog tick. A closely related strain of illness called Deer Tick Virus is transmitted by the black-legged, or deer tick. From 2001-2012, there were 13 confirmed cases in New York State, including two Dutchess County residents (one case in 2009, and another in 2012).

POWV can be neuroinvasive and cause encephalitis. About 10-15% of reported cases have been fatal, however there is little known about mild and asymptomatic cases. Lack of

public awareness and the need for specialized laboratory tests may underestimate the true frequency of the disease.

iii. West Nile Virus

West Nile Virus (WNV) is transmitted to humans by some species of mosquitoes, and first appeared in NYS in 1999 in the City of New York. Most people (70-80%) do not develop any symptoms from WNV infection; about 20-30% develop febrile illness, and less than 1% develop inflammation of the brain or surrounding tissues, which can be fatal (CDC). Birds, especially crows, are also carriers of WNV, and horses and pets (more rarely, in the case of cats and dogs) may also become infected from mosquito bites. There were three confirmed human cases of WNV in Dutchess County reported in 2012. The only other confirmed case of WNV in Dutchess County occurred in 2003.

Table 44
Human Cases and (Deaths) - West Nile Virus

	2008	2009	2010	2011	2012
Dutchess County	0 (0)	0 (0)	0 (0)	0 (0)	3 (0)
New York State, Excluding NYC	31 (5)	4 (0)	87 (4)	33 (1)	66 (3)

Data Source: NYSDOH West Nile Surveillance Summary

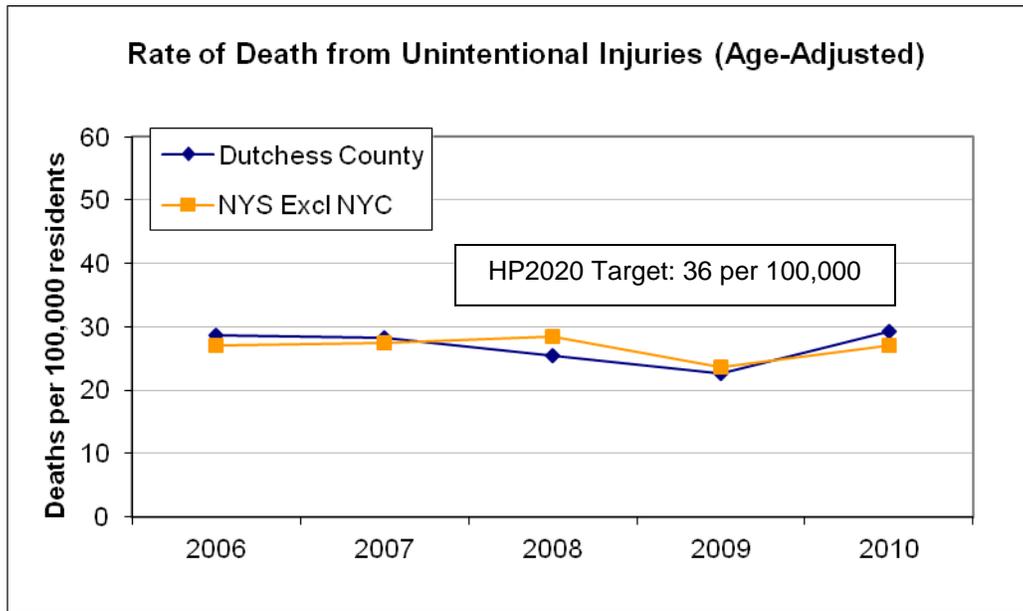
Comprehensive WNV surveillance via dead bird collection and mosquito pool analysis was initiated in 2000, shortly after WNV was first identified in New York City in 1999. Mosquito and bird testing ended in 2008-2009 at which times the presence and geographic characteristics of WNV in Dutchess County were well established and the County had well-established prevention and education protocols. Currently, DCDOH continues to receive reports of dead birds from the public and also conducts surveillance of human cases. Public health education to help prevent the spread of WNV and other arthropod-borne diseases is ongoing.

g. Injuries and Threats to Safety

i. Unintentional Injuries

Unintentional injuries are the fifth leading cause of death in Dutchess County and NYS (see Table 20). There was no discernible trend for the period 2006-2010, however local Medical Examiner data indicate that the uptick in 2010 may be related to an emerging trend in accidental drug overdose deaths in Dutchess County (see *Mental Health and Substance Abuse*). NYS and Dutchess County are already below the Healthy People 2020 target of 36 unintentional injury deaths per 100,000 population, however the rising trend in drug overdoses may threaten these gains.

Figure 91

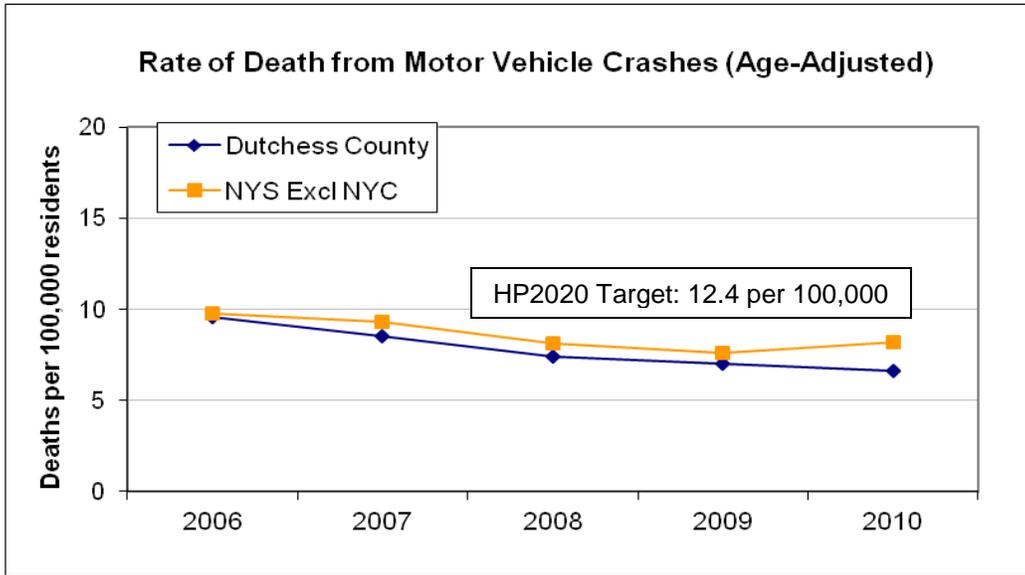


Data Source: NYSDOH, Community Health Indicator Report

Motor Vehicle Accidents

Deaths from motor vehicle crashes account for 20-30% of all unintentional injury deaths, but continue to decline as part of a long term trend statewide as well as in Dutchess County (Figure 92). NYS and Dutchess County are both below the Healthy People 2020 target of 12.4 deaths per 100,000 population.

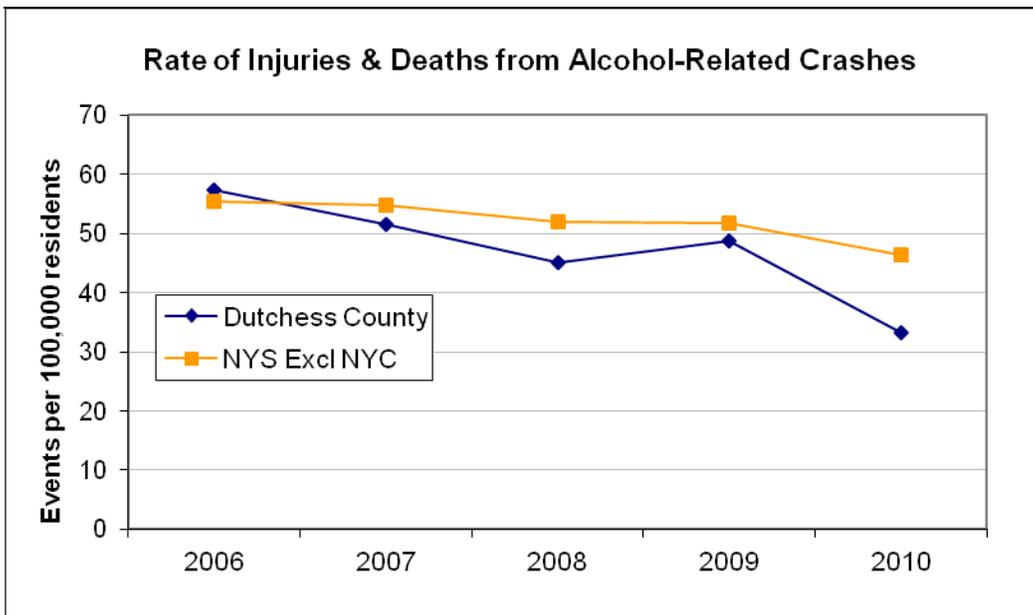
Figure 92



Data Source: NYSDOH Community Health Indicator Report

In particular, injuries and deaths from alcohol-related crashes decreased substantially from 2006-2010 (Figure 93).

Figure 93



Data Source: NYSDOH Community Health Indicator Report

Just over 70% of Dutchess County residents injured in motor vehicle crashes are drivers (Table 45), compared to the statewide average of 60%; by the same token, pedestrian and bicyclist injuries are less frequent among Dutchess County motor vehicle crashes. From 2009-2011, five pedestrians and two bicyclists were killed as a result of motor vehicle crashes in Dutchess County. The rate of fatalities is already below the Healthy People 2020 target of 1.3 or fewer pedestrian deaths and 0.22 or fewer bicyclist deaths per 100,000 population annually.

Table 45
Persons Injured in Motor Vehicle Crashes

Injury by Type	2009	2010	2011
Dutchess County, <i>total</i>	2,782	2,883	2,553
Driver (%)	71.8%	71.3%	72.9%
Passenger (%)	23.9%	22.9%	21.8%
Pedestrians (%)	2.9%	4.0%	3.7%
Bicyclists (%)	1.2%	1.6%	1.5%
Other (%)	0.2%	0.3%	0.2%
New York State, <i>total</i>	113,139	109,873	102,276
Driver (%)	60.7%	59.8%	59.9%
Passenger (%)	27.7%	27.9%	27.4%
Pedestrians (%)	8.2%	8.6%	8.8%
Bicyclists (%)	2.9%	3.2%	3.3%
Other (%)	0.5%	0.5%	0.5%

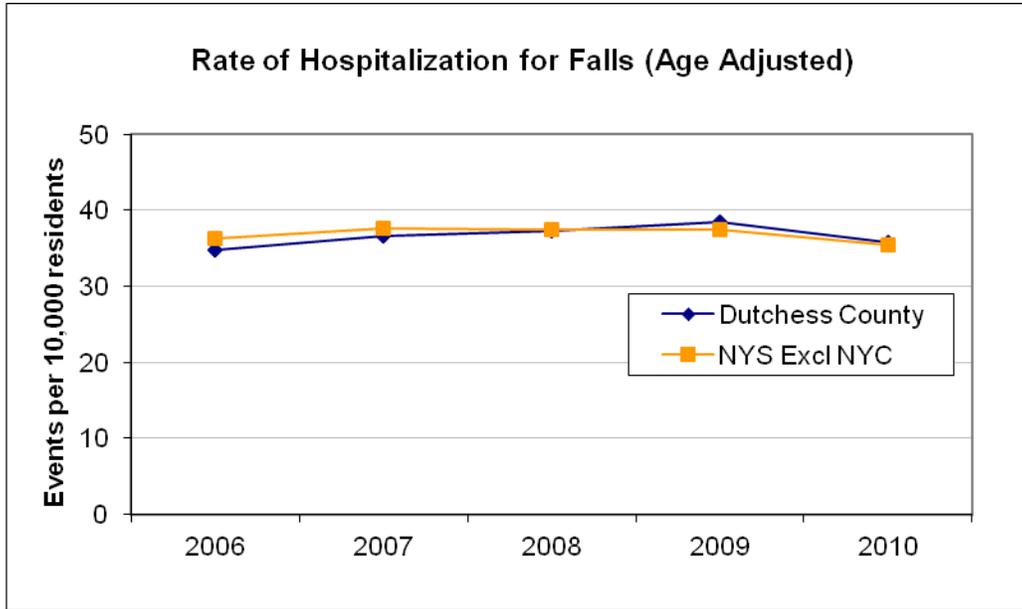
Data Source: *Institute for Traffic Safety Management and Research*

Falls

The rate of falls (about 35 per 10,000 residents annually, Figure 94) accounted for half of all unintentional injury hospitalizations from 2006-2010 (on average, about 70 hospitalizations per 10,000 residents per year over the same time period). The majority of falls resulting in hospitalization occurred among older adults (Figure 95). The rate of hospitalization for falls was 3 times higher for 65-74 year olds than younger adults, 10 times higher for 75-84 year olds, and

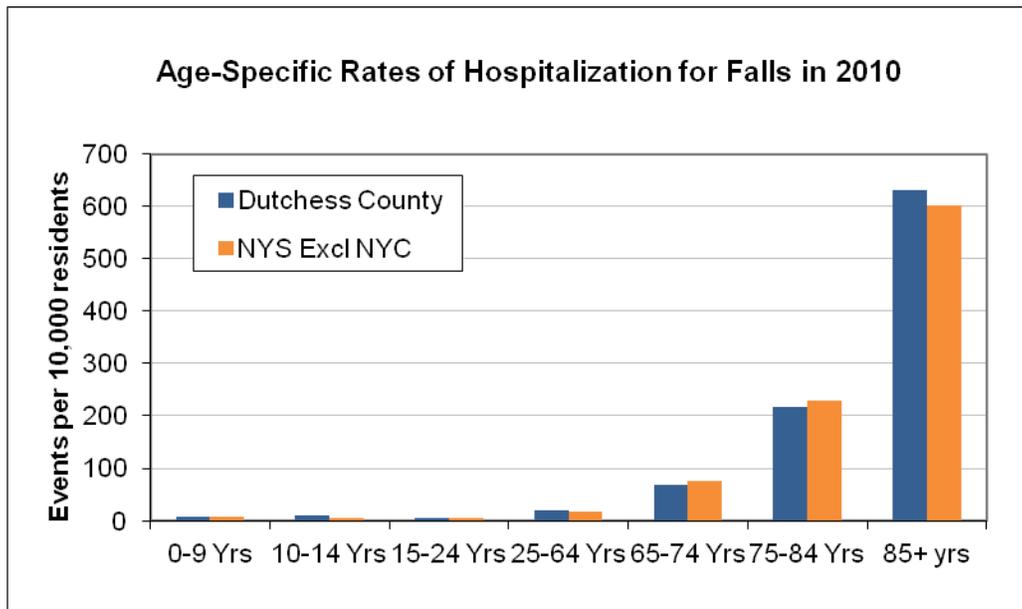
over 30 times higher for adults 85 years of age and older. The NYS Prevention Agenda 2017 objective is 204.6 hospitalizations per 10,000 among adults 65 years of age and older.

Figure 94



Data Source: NYSDOH Community Health Indicator Report

Figure 95



Data Source: NYSDOH Community Health Indicator Report

ii. Intentional Injuries

Homicide and Assault

The number of homicide fatalities investigated by the Medical Examiner averaged 8.2 per year from 2008-2012 (Table 46), and did not show evidence of an increase; the jump in mortality in 2010 may be due to random statistical “noise” due to relatively small numbers. However, there was a gradual increase in assault-related hospitalizations among Dutchess County residents from 2006-2010 (Figure 96), which was not observed statewide. The NYS Prevention Agenda 2017 objective is 4.3 or fewer assault hospitalizations per 10,000 people.

Data on suicide and self-harm can be found under *Mental Health and Substance Abuse*.

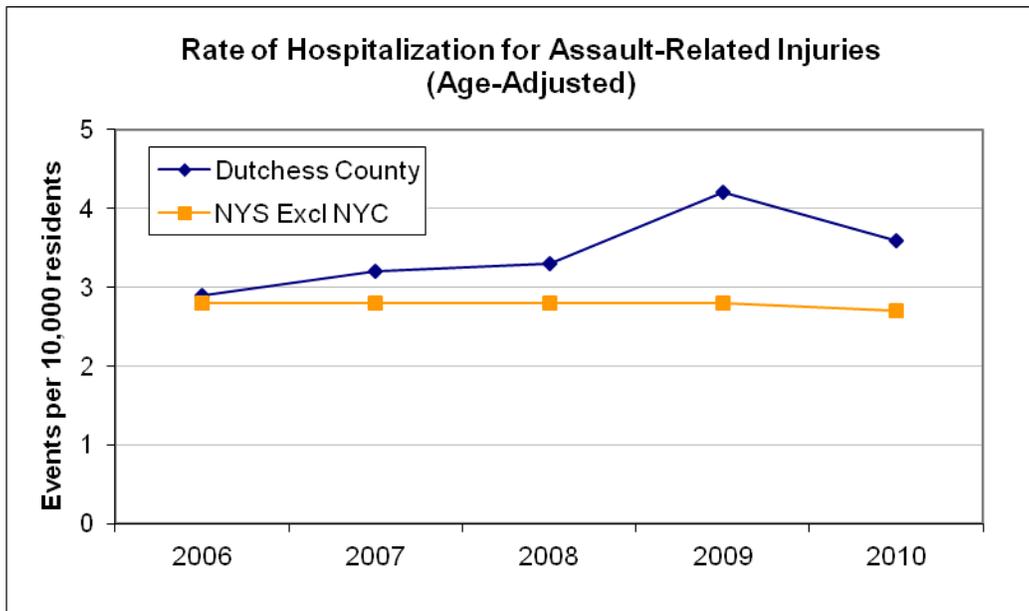
Table 46

Autopsies, External Exams and Certifications for Homicides, Dutchess County

	2008	2009	2010	2011	2012
Number of Deaths	6	6	15	8	6

Data Source: Dutchess County Medical Examiner

Figure 96



Data Source: NYSDOH, Community Health Indicator Report

Domestic Violence, Child Abuse and Neglect

The rate of reported incidents of domestic violence was relatively constant from 2009-2011, and slightly lower than the NYS average excluding NYC (Table 47). Since there were changes to the definition of domestic violence in 2008, earlier data are not comparable. The current definition includes same-sex couples, ex-spouses, and boyfriends and girlfriends, and excludes non-violent altercations.

The rate of cases of child abuse and neglect in Child Protective Service Reports were also constant from 2008-2011, but slightly higher than the statewide average. Indicated reports are those in which there is credible evidence that a child has experienced abuse, neglect or maltreatment from a parent or legal guardian. This includes sexual abuse committed or allowed by a parent or guardian.

Table 47
Domestic Violence and Child Abuse/Neglect

Domestic Violence Reports Rate per 10,000 Residents	2008	2009	2010	2011
Dutchess County	--	41	40	43
New York State (Excluding NYC)	--	45	48	47
Child Abuse and Neglect Rate per 1,000 Children Under 18	2008	2009	2010	2011
Dutchess County	18	23	21	18
New York State (Excluding NYC)	17	17	17	16

Data Source: *Mid-Hudson Community Profiles, New York State Division of Criminal Justice Services, and Kids Well-being Indicator Clearinghouse (KWIC)*

h. Community Environmental & Safety Concerns

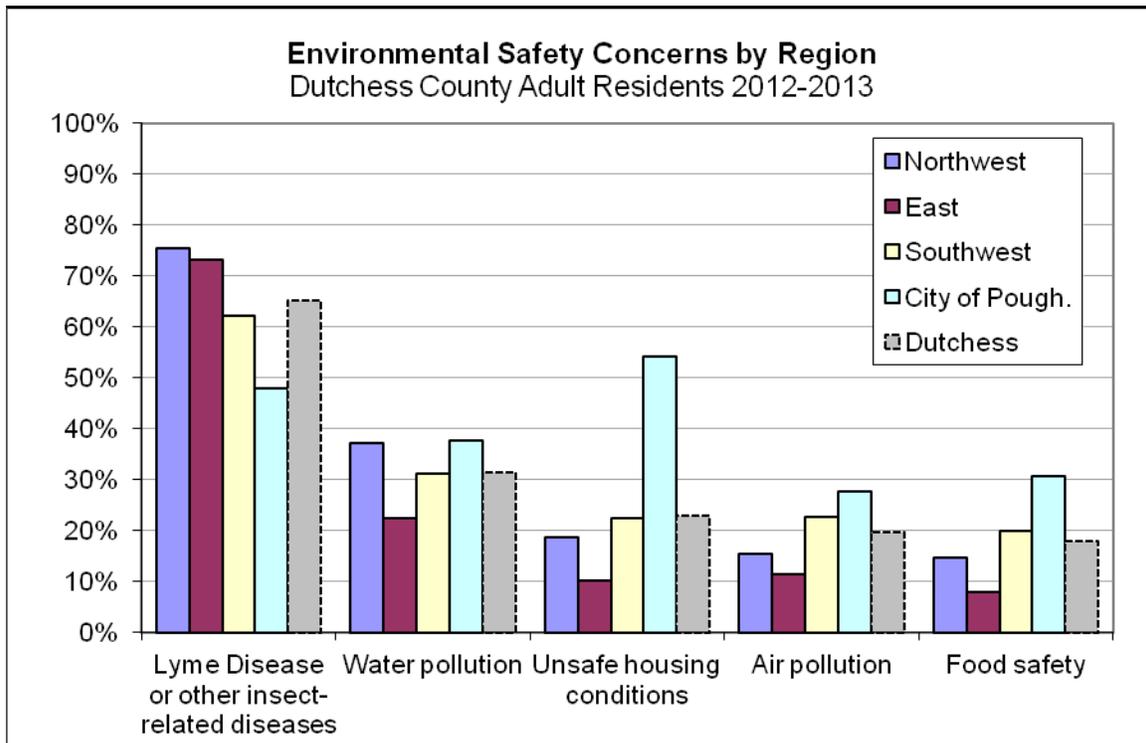
i. Environmental Concerns

Lyme disease and other insect-borne illnesses were the predominant environmental health and safety concern among residents surveyed in the *Dutchess County ICA Community Health Survey 2012* (Figure 98). In multivariable models controlling for region and demographic characteristics, Non-Hispanic Blacks were 50% less likely than Non-Hispanic Whites to identify Lyme disease as an environmental health concern, older adults were two to three times more likely than young adults (under the age of 35) to be concerned about Lyme, and residents in households earning at least \$100,000 annually were twice as likely to state that Lyme disease was a significant concern compared with residents whose household income was below \$35,000 annually.

Unsafe housing conditions were a significant concern for over 50% of Poughkeepsie City residents (Figure 97). Controlling for region and demographic characteristics, City residents were five times more likely than Northwest residents to identify unsafe housing conditions as a serious concern. In addition, women were 72% more likely than men to be concerned about unsafe housing conditions, while older adults were less likely than young adults to identify unsafe housing as a concern.

About 30% of county residents were concerned about water pollution, 20% were concerned about air pollution, and just under 20% were concerned about food safety. Non-Hispanic Blacks were half as likely to be concerned about air and water pollution as Non-Hispanic Whites, while Hispanics were four times more likely than Non-Hispanic Whites to be concerned about food safety.

Figure 97

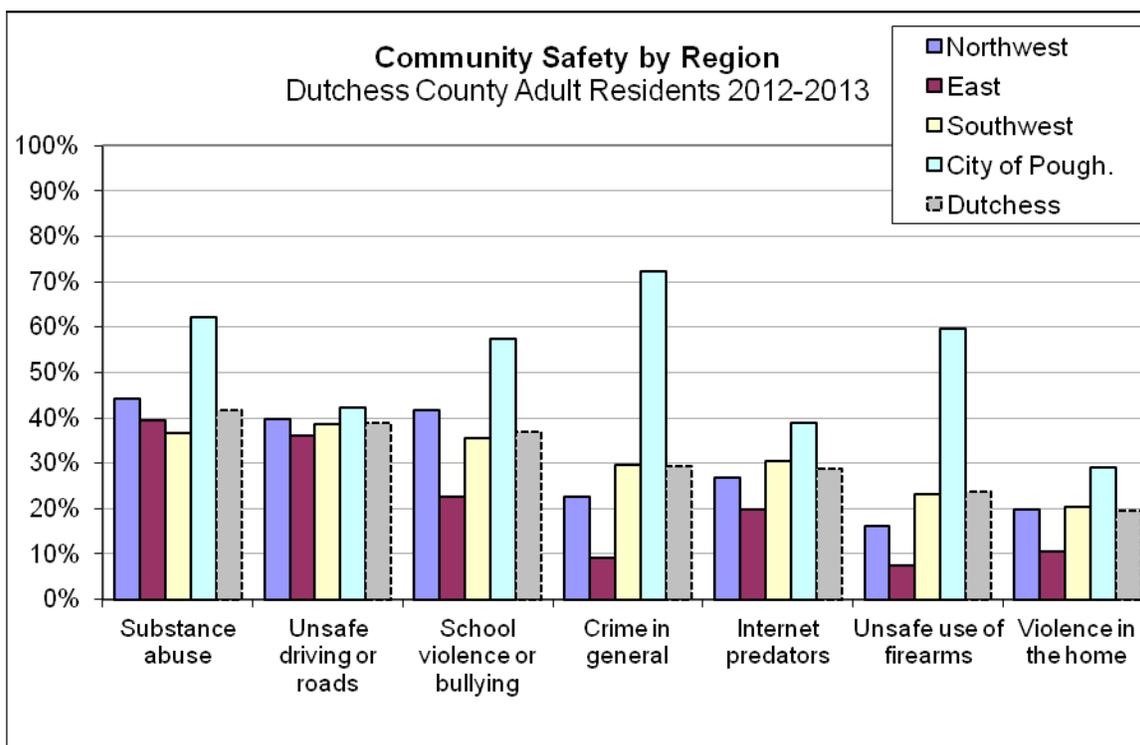


Data Source: Dutchess County ICA Community Health Survey 2012

ii. Safety Concerns

Substance abuse, unsafe driving, and school bullying were the top three safety concerns of Dutchess County residents as a whole, while crime in general was the top safety concern of Poughkeepsie City residents (Figure 98). Unsafe use of firearms ranked 3rd among city residents. In multivariable models that simultaneously controlled for other demographic characteristics, Poughkeepsie City residents were 11 times more likely than Northwest residents to identify crime and unsafe use of firearms as significant safety concerns in their community. Poughkeepsie City residents were also three times more likely to be concerned than Northwest residents about substance abuse, although Non-Hispanic Blacks and Hispanics were significantly less likely to be concerned than Non-Hispanic Whites. Controlling for all other factors, Poughkeepsie City residents were also twice as likely as Northwest residents to identify domestic violence, school violence and bullying, and internet predators as safety concerns. Older adults also cited these three concerns significantly more frequently than young adults.

Figure 99



Data Source: Dutchess County ICA Community Health Survey 2012

6. Mental Health and Substance Abuse

a. Mental Health

i. Self-Reported Poor Mental Health

Overall, 13% of adults surveyed in Dutchess County in 2008 reported experiencing poor mental health on 14 or more of the previous 30 days (Table 48). The difference from the statewide average (10.2%) was not statistically significant. Older adults were less likely to report having 14 or more days with poor mental health. The NYS Prevention Agenda 2017 objective is 10.1%.

Table 48

Poor Mental Health 14 or More Days within the Previous Month, 2008-2009

	Dutchess County	New York State
Overall (age-adjusted)	13.0%	10.2%
Age specific: 18-34 years	*	11.2%
35-44 years	11.3%	8.9%
45-54 years	13.9%	12.3%
55-64 years	7.3%	10.1%
>= 65 years	4.9%	6.7%

Data Source: EBRFSS 2008-2009

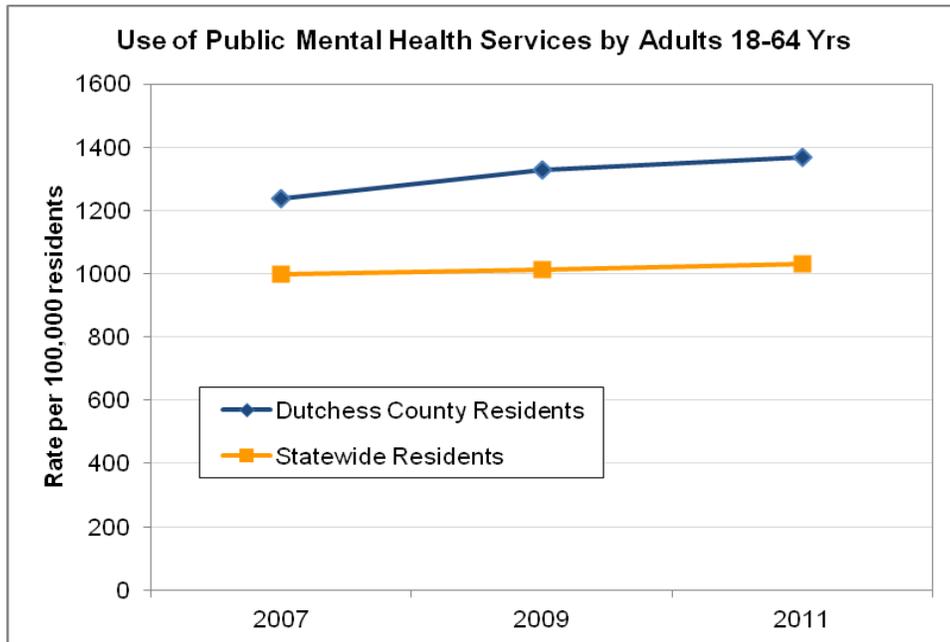
**Data did not meet reporting criteria due to small numbers*

ii. New York State Patient Characteristic Survey

The New York State Office of Mental Health (OMH) Patient Characteristics Survey (PCS) collects demographic, clinical, and service-related information for each person who receives a mental health service during a specified one-week period from programs licensed or funded (directly or indirectly) by the NYS Office of Mental Health. The PCS is conducted biennially and receives data from over 4,000 programs serving approximately 170,000 people.

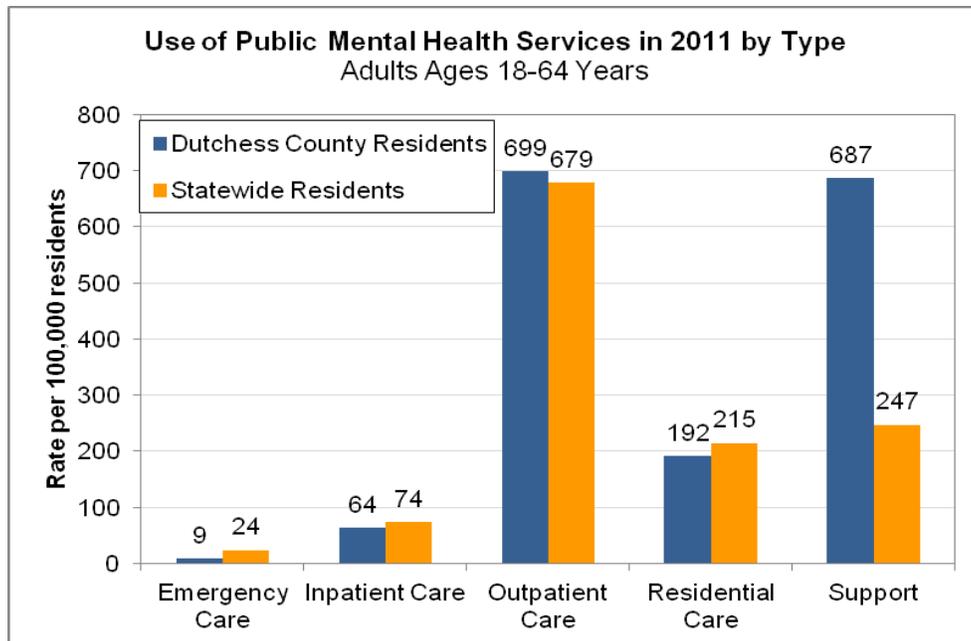
From 2007-2011 there was an increase in the use of OMH-licensed and OMH-funded services among Dutchess County residents 18-64 years of age (Figure 99), which grew at a faster rate than the statewide average. The difference was almost exclusively due to support services, which include prison mental health services for people incarcerated in state prisons located in Dutchess County (Figure 100).

Figure 99



Data Source: NYS Office of Mental Health PCS Survey

Figure 100

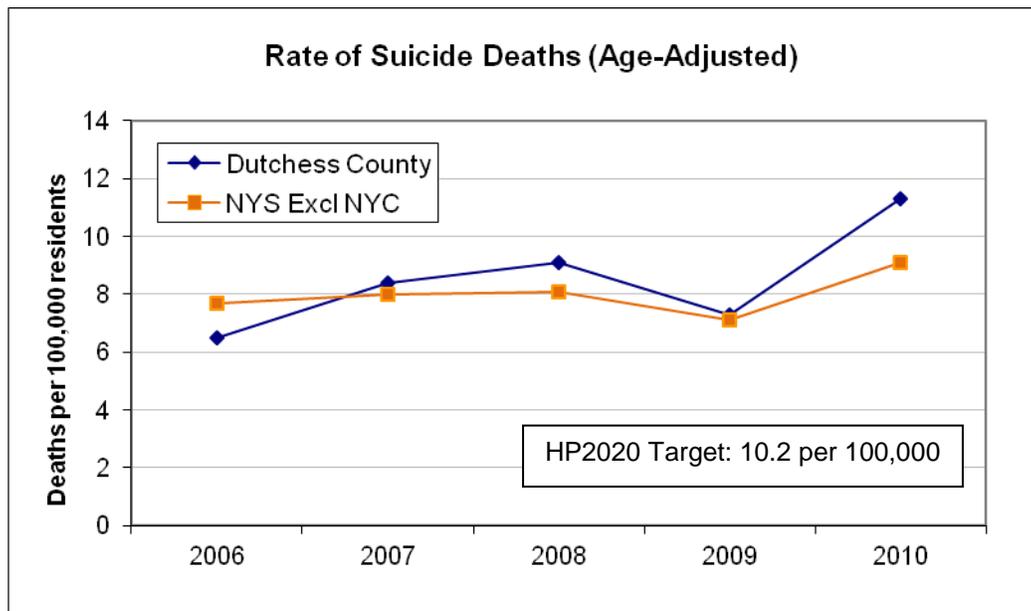


Data Source: NYS Office of Mental Health PCS Survey

iii. Suicide and Self-Inflicted Injury

There was an increase in suicide deaths (Figure 101) from 2006-2010, which paralleled statewide trends. However, recent data from the Dutchess County Medical Examiner’s Office show the trend reversing again in 2012 (Table 49). With the exception of 2010, NYS and Dutchess County were below the HP2020 target, but still above the NYS Prevention Agenda 2017 objective of 5.9 or fewer suicide deaths per 100,000 population.

Figure 101



Data Source: NYSDOH Community Health Indicator Report

Table 49

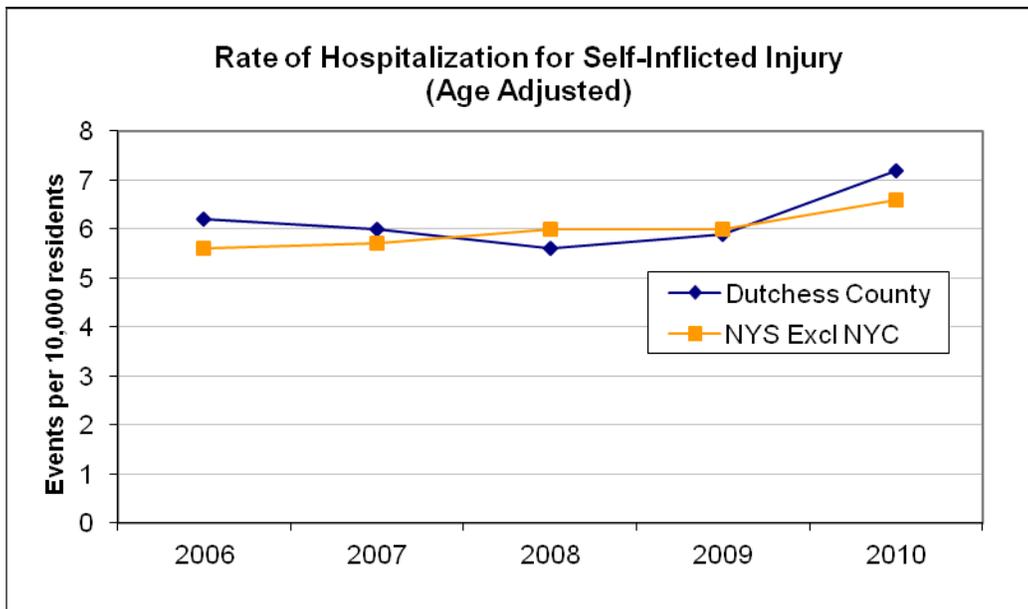
**Autopsies, External Exams and Certifications for Suicide Deaths:
Dutchess County**

	2008	2009	2010	2011	2012
Number of Deaths	26	27	36	31	23

Data Source: Dutchess County Department of Health, Office of the Medical Examiner

A similar trend was observed in self-inflicted injuries requiring hospitalization (Figure 102)

Figure 102



Data Source: NYSDOH, Community Health Indicator Report

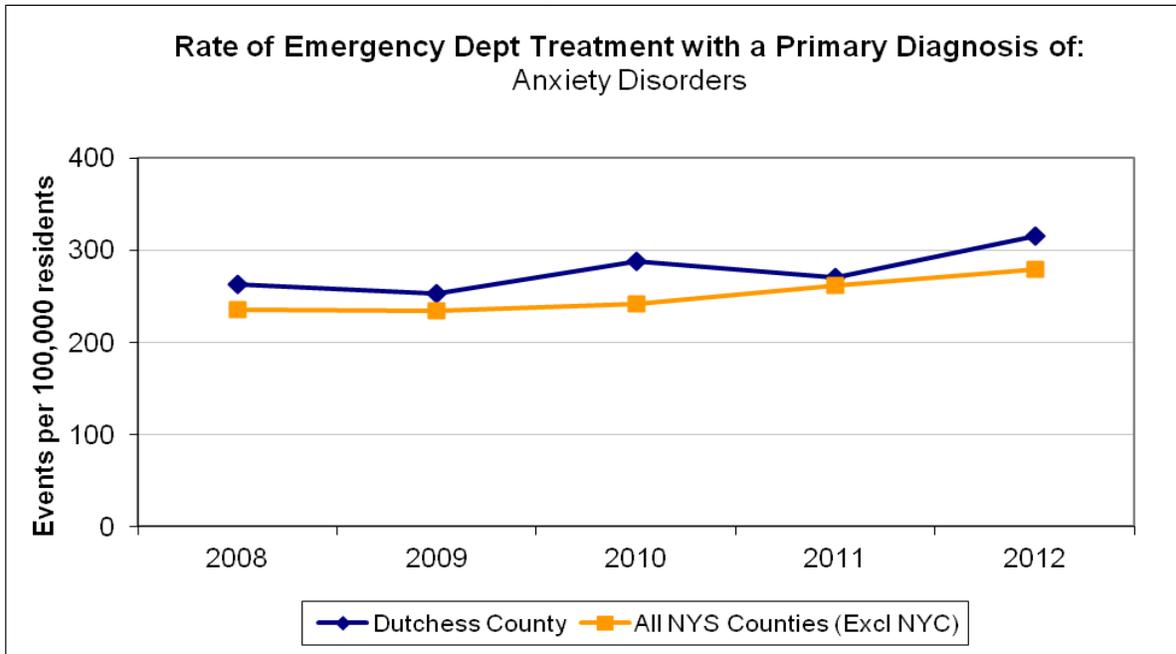
From 2008-2011 there were, on average, 5.0 deaths per 100,000 residents each year having an underlying cause of firearm discharge, which was lower than the Healthy People 2020 target of 9.2 or fewer deaths due to firearms per 100,000 population. Suicide was the predominant manner of death among firearm-related deaths, however 27% were due to assault, and 5% were accidents (see *Environmental Health – Injuries* for additional injury data).

iv. Emergency Department Care and Hospitalization for Mental Health Disorders

Anxiety Disorders

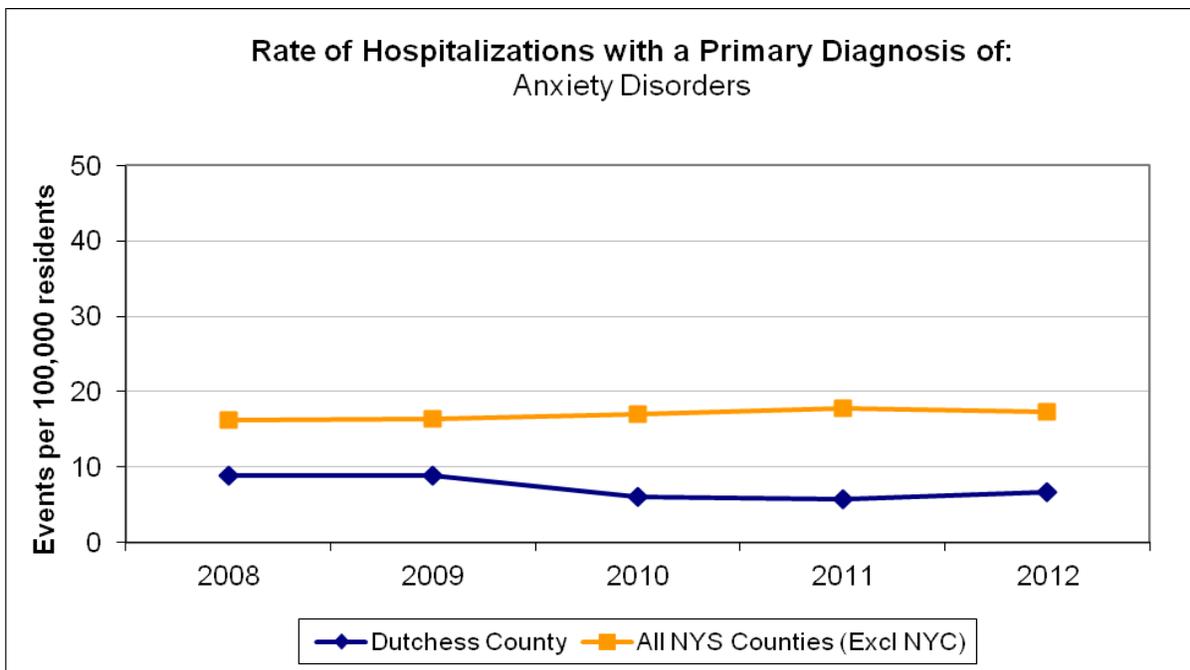
The rate of emergency department (ED) treatment for anxiety disorders among Dutchess County residents increased modestly alongside the statewide average (Figure 103), while the rate of hospital admissions was somewhat lower than the state average and did not change meaningfully (Figure 104).

Figure 103



Data Source: NYSDOH SPARCS

Figure 104

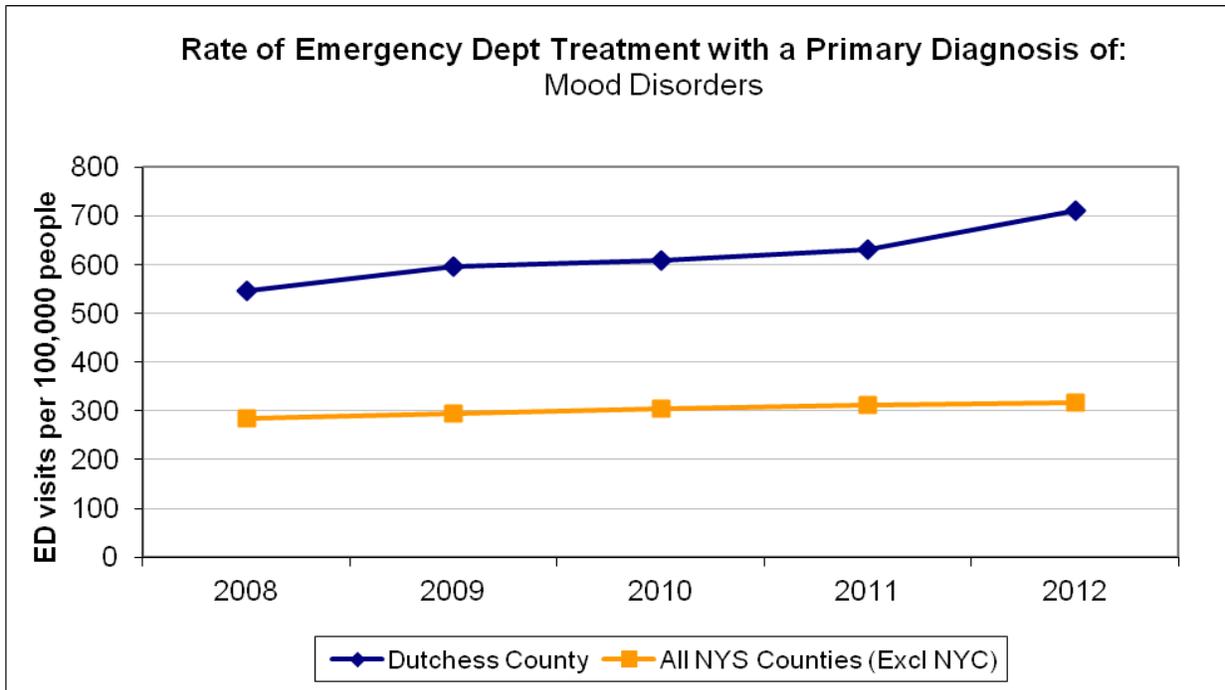


Data Source: NYSDOH SPARCS

Mood Disorders

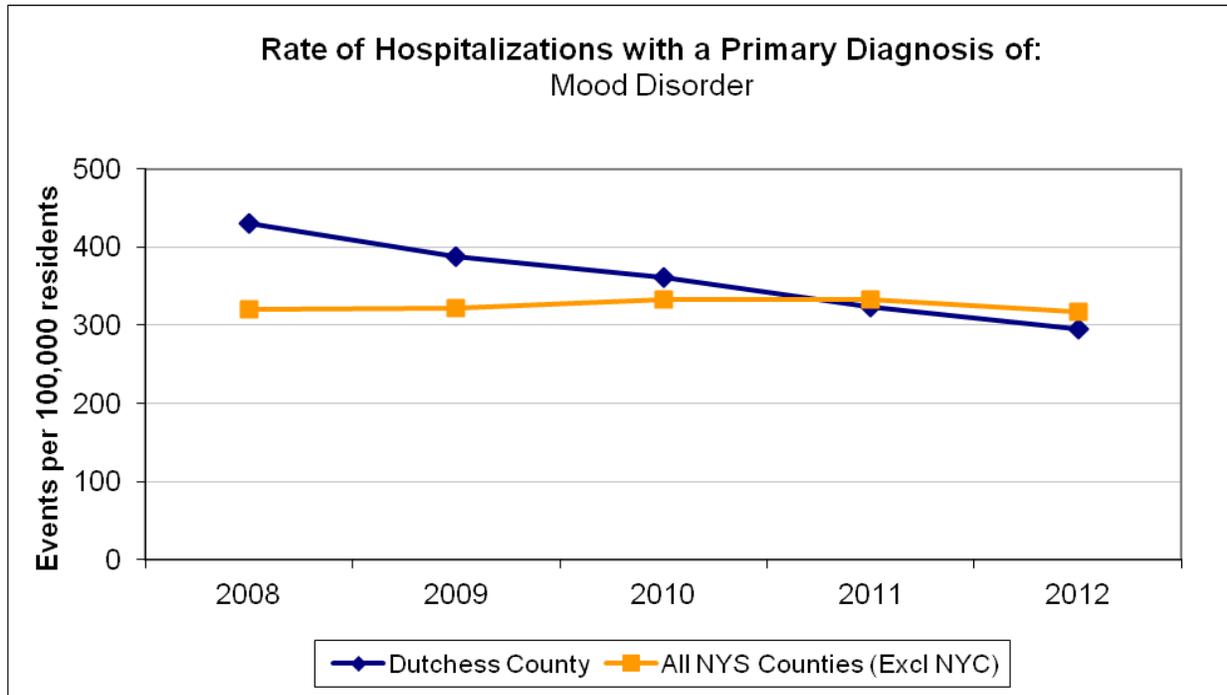
The rate of ED treatment for mood disorders among Dutchess residents was about twice as high as the state average and appeared to be rising (Figure 105). Meanwhile, hospitalization for mood disorders decreased substantially over the time period (Figure 106), reaching the statewide average in 2012. The opposing trends could reflect a shift in treatment modes, with decreasing use of hospitalization to care for mood disorders, although no such pattern was observed statewide.

Figure 105



Data Source: NYSDOH SPARCS

Figure 106

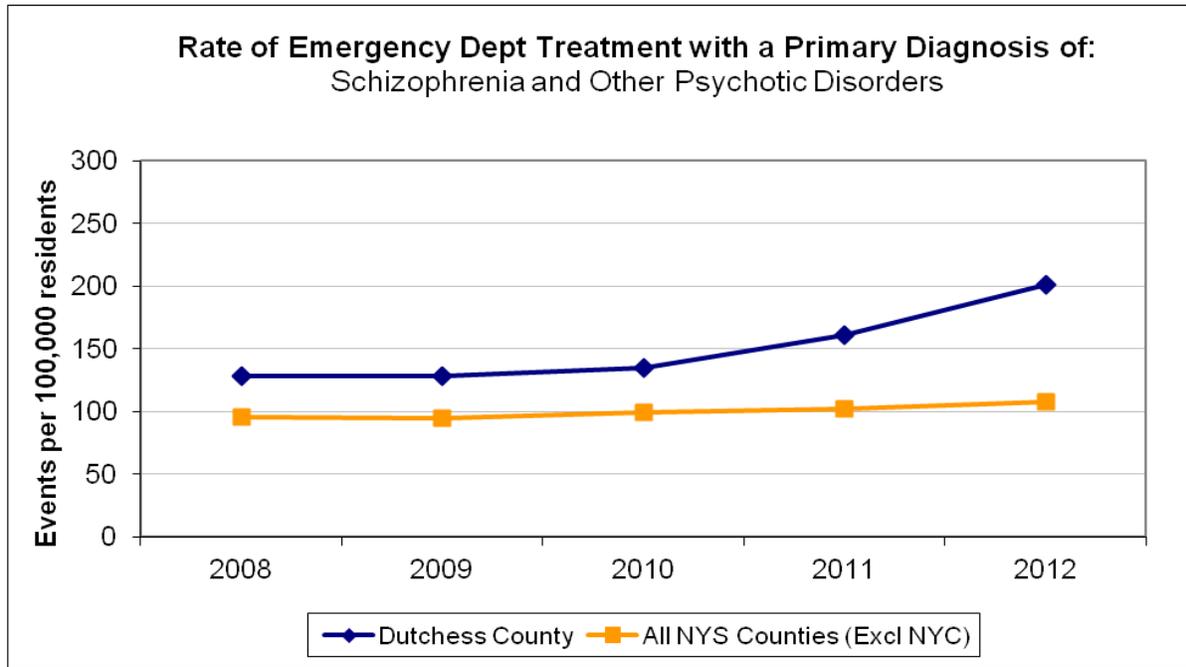


Data Source: NYSDOH Health Commerce System, SPARCS

Schizophrenia and Other Psychotic Disorders

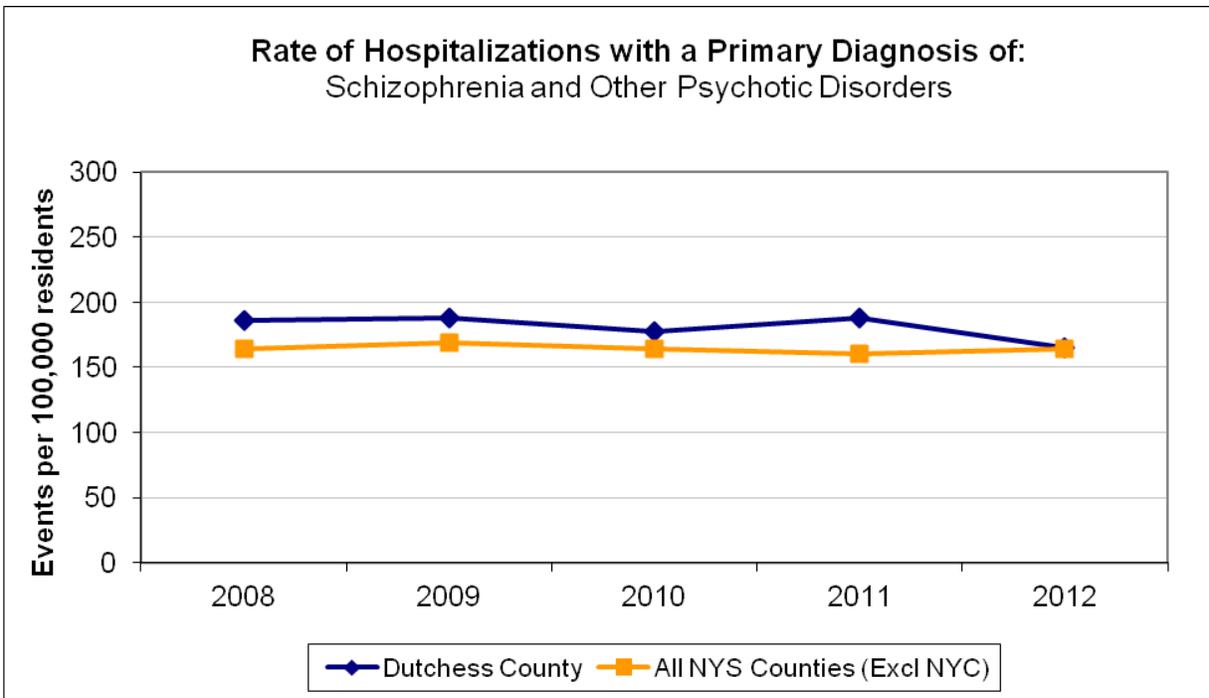
The rate of ED treatment for schizophrenia and other psychotic disorders increased among Dutchess County residents in 2010-2012 relative to other NYS residents (Figure 107). Hospitalization rates were relatively stable and comparable with the state average (Figure 108).

Figure 107



Data Source: NYSDOH Health Commerce System, SPARCS

Figure 108



Data Source: NYSDOH Health Commerce System, SPARCS

Substance Abuse

i. Alcohol Abuse

Dutchess County did not differ from the rest of NYS, on average, in the proportion of adults who reported binge drinking or drinking heavily in a typical month in 2008 (Table 50). Adult males were more likely to report binge drinking than adult females, while males and females were equally likely to report heavy drinking on a daily basis. Binge drinking on one or more occasion in the previous month was more common than heavy (daily) drinking. The NYS Prevention Agenda 2017 objective for binge drinking is 18.4%.

Table 50
Heavy Drinking and Binge Drinking among Adults, 2008-2009

	Dutchess County	New York State
Any binge ⁸ drinking (age adjusted)	18.1%	18.1%
Males	22.2%	24.5%
Females	14.0%	12.4%
Heavy drinking ⁹ (age adjusted)	4.7%	5.0%
Males	4.6%	4.9%
Females	4.9%	5.1%

Data Source: EBRFSS 2008-2009

The number of deaths and injuries from alcohol-related vehicle crashes has declined substantially over the past decade, and continued to drop by 50% from 2006-2010 (see *Environmental Health and Safety - Injuries*).

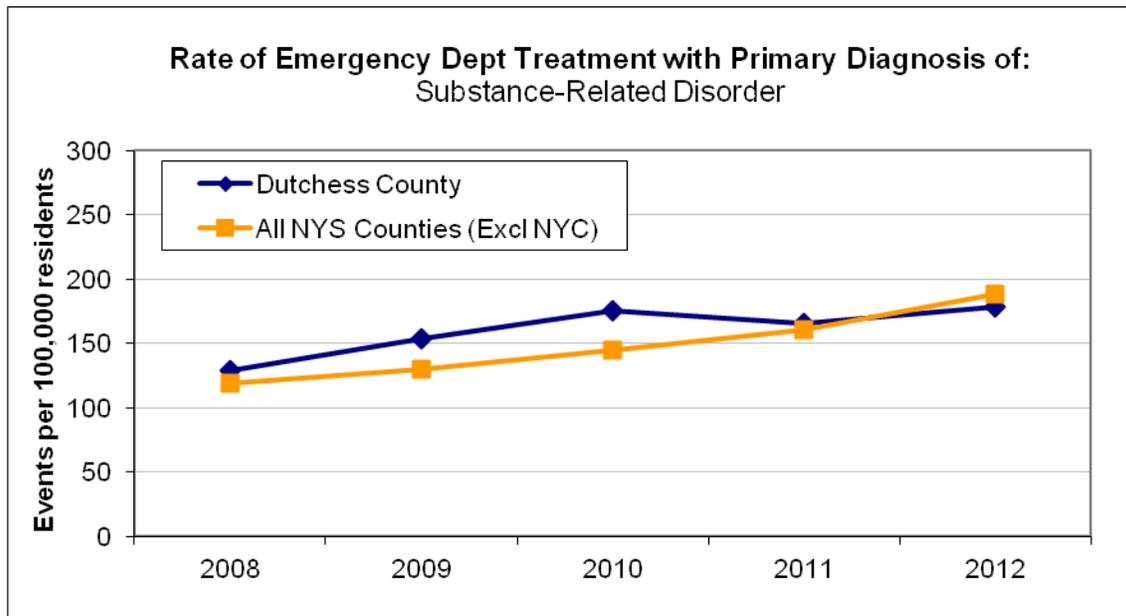
⁸ Binge drinking defined as men having 5 or more drinks or women having 4 or more drinks on 1 or more occasion within the past month.

⁹ Heavy drinking defined as men averaging more than 2 alcoholic drinks per day and women averaging more than 1 drink per day within the past month.

ii. Medication and Drugs

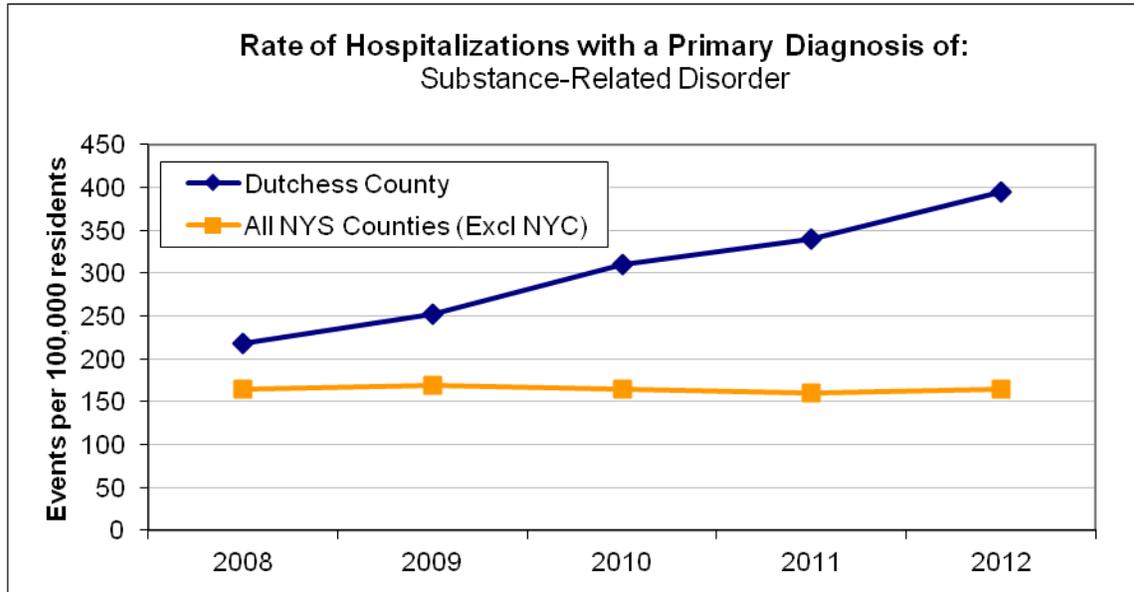
There was moderate growth in the rate of ED treatment for substance-related disorders both among Dutchess County residents and the rest of NYS residents from 2008-2010 (Figure 109). Meanwhile, there was dramatic growth in the rate of hospital admissions for substance-related disorders among Dutchess County residents (100% increase), which was not observed statewide (Figure 110).

Figure 109



Data Source: NYSDOH Health Commerce System, SPARCS

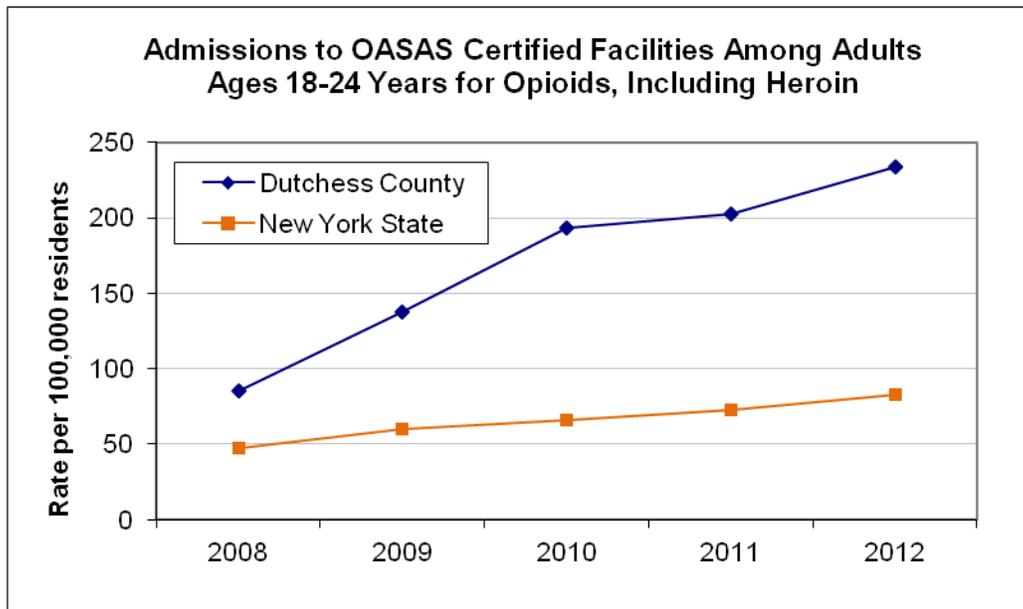
Figure 110



Data Source: NYSDOH Health Commerce System, SPARCS

The increase in substance-related disorders appears to be predominantly associated with the rising trend in the abuse of opioids, a class of pharmaceutical and recreational drugs that includes heroin, morphine, codeine, hydrocodone, and oxycodone (Figure 111). While this phenomenon has been observed elsewhere in NYS and nationally, the rate of growth in Dutchess County since 2008 has been considerably higher than the statewide average.

Figure 111



Data Source: New York State Office of Alcohol and Substance Abuse Services, Council on Addiction Prevention and Education (CAPE) of Dutchess County

Likewise, over the same time period there was an increase in the number of deaths among Dutchess County residents investigated by the Medical Examiner that involved accidental overdoses (Table 51). In 2012, heroin was associated with approximately one quarter of all overdose deaths investigated by the medical examiner, and all other opioids (other than heroin and methadone) contributed to 50% of overdose deaths, including those of intentional and undetermined manners of death (Figure 112).

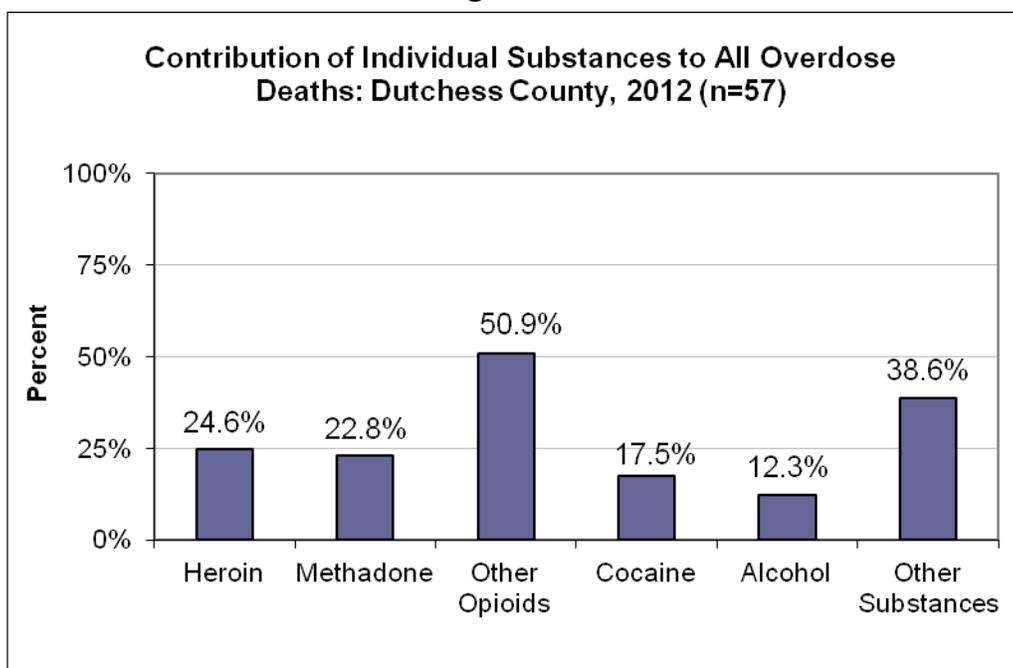
Table 51

Autopsies, External Exams and Certifications for Accidental Overdose: Dutchess County

	2008	2009	2010	2011	2012
Number of Deaths	24	28	36	32	51

Data Source: Dutchess County Department of Health, Office of the Medical Examiner

Figure 112



Data Source: Dutchess County Department of Health, Office of the Medical Examiner

B. ACCESS TO CARE

1. Availability and Accessibility of Healthcare Providers and Services

Dutchess County has substantial healthcare provider resources. This section will discuss the availability of hospitals, clinics, and medical practices.

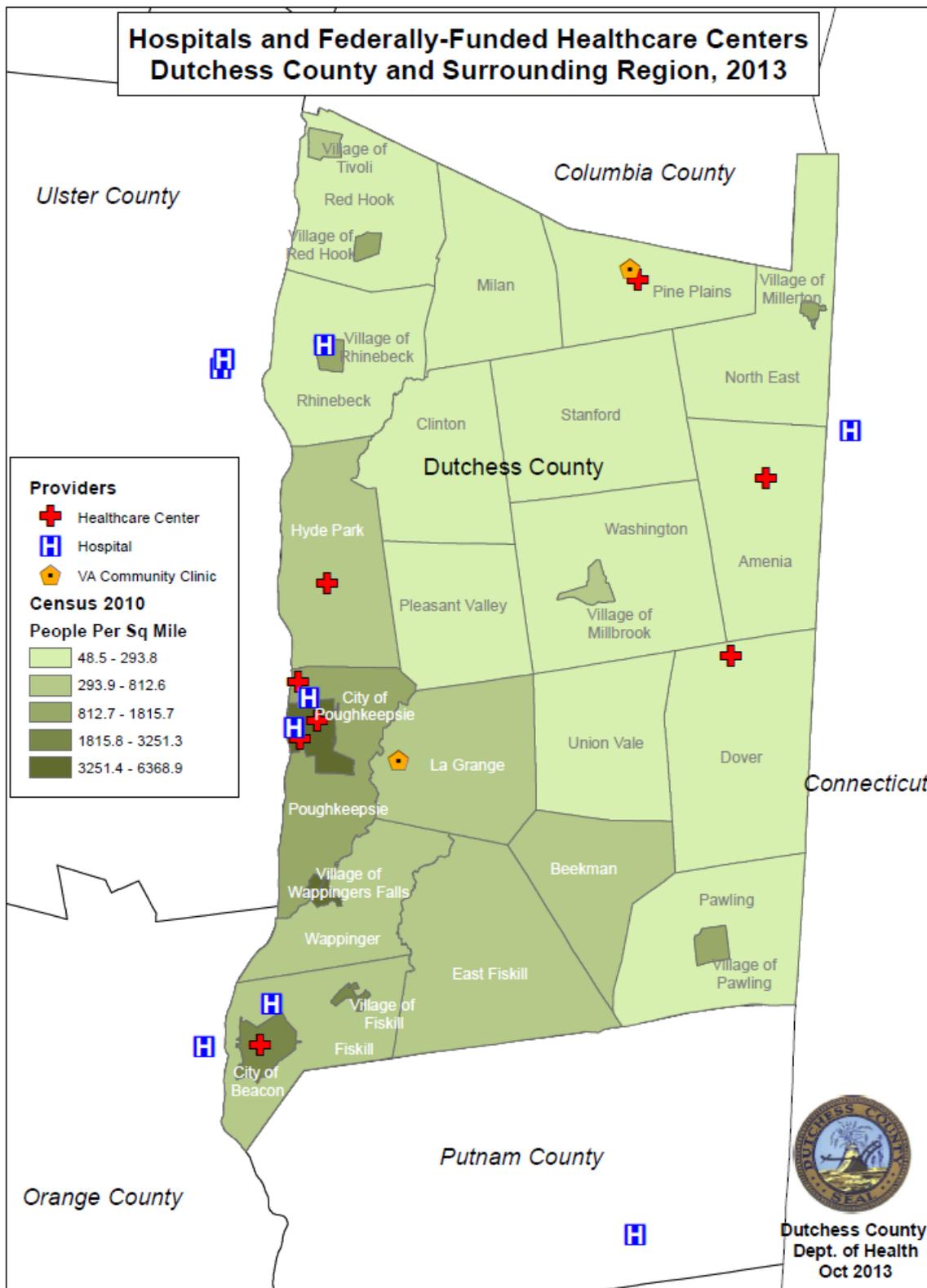
a. Healthcare Providers

i. Hospitals

There are four county-based hospitals, including the Veterans' Hospital at Castle Point (Map 7). Residents are also within easy travel distance of Kingston and Benedictine Hospitals in Kingston (Ulster County); and St Luke's Cornwall Hospital in Newburgh (Orange County), and Putnam Hospital (Putnam County); these facilities are within 5-10 miles of the county boundaries. The northeastern region of the County has access to Sharon Hospital in Connecticut, which has both inpatient and outpatient adult services, including maternity and pediatric services. Residents also have access to two large medical centers outside the County - Westchester Medical Center in White Plains (Westchester County) and Albany Medical Center in Albany (Albany County).

As of the writing of this report, St Francis Hospital, one of the four Dutchess County hospitals, has filed for bankruptcy. While bids are being submitted for acquisition of the hospital, all services will continue without interruption. Expressions of interest are due by January 10, 2014, followed by formal bids by February 10, 2014.

Map 7



The NYSDOH website contains a wealth of information on all NYS hospitals at <http://hospitals.nyhealth.gov>. NYSDOH has designations for certain hospitals based on their ability to meet specific criteria established in specialized areas (Table 52). The Veteran's Hospital is not included in the NYS designation.

- *Perinatal Center* - Level 1 hospitals provide care to normal and low-risk pregnant women and newborns, and they do not operate neonatal intensive care units (NICUs). Level 3 hospitals care for patients requiring increasingly complex care and operate NICUs. Vassar Brothers Medical Center has the only Level 3 intensive care unit in the mid Hudson Valley with the only dedicated pediatric unit.
- *Area Trauma Center* - The Regional Trauma Quality Improvement Program consists of regional trauma systems and individual Trauma Centers. All hospitals have a written transfer agreement with a regional trauma center and an area trauma center (as appropriate) for the transfer of severely injured trauma patients.
- *SAFE Center* - Legislation directs the NYSDOH to designate interested hospitals in NYS as sites of 24-hour sexual assault forensic examiner (SAFE) programs. These hospitals are centers of excellence for the provision of sexual assault services. Family Services Inc contracts with St Francis Hospital (and has a memorandum of understanding with Vassar Brothers Medical Center) to provide care to adult victims of sexual assault; it also provides advocate support services at Northern Dutchess Hospital. Pediatric victims are sent to Westchester Medical Center.
- *Stroke Center* – The NYSDOH designates Stroke Centers statewide to improve the standard of quality and access to care for patients with a presumptive diagnosis of stroke. The Emergency Medical Services community plays an important role in the implementation of these Stroke Centers, as it also does with state-designated Trauma Centers.

Table 52**New York State Designation for Dutchess County Hospitals**

	Vassar Brothers Medical Center	Northern Dutchess Hospital	St Francis Hospital
Perinatal Center	Level 3	Level 1	n/a
Area Trauma Center	n/a	n/a	x
SAFE Center	n/a	n/a	x
Stroke Center	x	x	x

*Data Source: NYSDOH***Table 53****Dutchess County Hospital Facilities*
Number and Type of Beds**

Bed Type	Vassar Brothers	Northern Dutchess	St Francis
Coronary Care	10	n/a	7
Intensive Care	10	7	8
Maternity	32	11	n/a
Medical-Surgical	280	40	190
Neonatal Continuing Care	4	n/a	n/a
Neonatal Intensive Care	5	n/a	n/a
Neonatal Intermediate Care	6	n/a	n/a
Pediatric	18	n/a	10
Physical/Medical/Rehab	n/a	10	18
Psychiatric	n/a	n/a	40
Chemical Dependence Detox	n/a	n/a	10
Chemical Dependence Rehab	n/a	n/a	50
Total Beds	365	68	333

*Data Sources: NYSDOH; St Francis Hospital
* Veteran's Hospital services are described in the text*

St Francis Hospital provides emergency psychiatric care in addition to child, adolescent and adult outpatient services; inpatient services are for adults only. The Rockland County Psychiatric Center accepts adult psychiatric admissions and Astor operates a Crisis Residence for adolescents.

The VA Hudson Valley Health Care System (VA HVHS) consists of the FDR Campus in Montrose (Westchester County) and the Castle Point Campus in Dutchess County. The latter, located on the Hudson River 65 miles north of New York City, is a primary and secondary healthcare facility. There are also two community based clinics in Dutchess County, one in Poughkeepsie and the other in Pine Plains, which are extensions of the hospital outpatient services and offer primary and specialty care. The VA HVHS offers medical, surgical, mental health, substance abuse treatment and long term care services. Special programs include women's health, chemotherapy, dental clinic, dermatology, diabetes education, neurology, oncology, physical therapy, rehabilitation medicine, rheumatology, orthopedics, and spinal cord injury. Also included are an extensive social work division, post traumatic stress disorder, respite care, sexual trauma counseling, supportive housing, vocational testing and career counseling, optometry, and podiatry (*Veterans Hudson Valley Health Care System*).

ii. Primary Care Health Centers

Primary care health centers are outpatient facilities offering wide-ranging medical services to uninsured and underinsured populations; and are usually federally qualified health centers (FQHC). FQHCs include all organizations receiving grants under Section 330 of the Public Health Service Act. They qualify for enhanced reimbursement from Medicare and Medicaid, as well as other benefits. FQHCs must serve an underserved area or population, offer a sliding fee scale, provide comprehensive services, have an ongoing quality assurance program, and have a governing board of directors. Vassar Brothers Medical Center (VBMC) has transitioned its primary care center to Hudson River HealthCare (HRHC). There are eight outpatient primary care health centers available throughout the County - seven operated by HRHC and one by the Institute of Family Health (Table 54, Map 7). All are all are FQHCs. HRHC provides prenatal services at the Poughkeepsie Family Partnership Center, the Poughkeepsie Livingston Center which replaced the VBMC Care Center, the Beacon site, and in Amenia where it partners with an Ob-Gyn group in Sharon, CT.

Table 54

Primary Care Health Centers in Dutchess County

Healthcare Provider	Primary Care Health Center
Institute of Family Health	Family Practice Center of Hyde Park
Hudson River HealthCare	Amenia Health Center
	Beacon Health Center
	Dover Plains Health Center
	Pine Plains Health Center
	Poughkeepsie - The Atrium
	Poughkeepsie - Family Partnership Center
	Poughkeepsie - The Livingston Center

HRHC's Amenia health center serves a large migrant population. Its Migrant Voucher Program is an innovative response to the needs of the agricultural workers in NYS's Southern Agricultural Region. Due to the geographically dispersed locations of farms, HRHC developed a network of local medical providers with whom it contracts. Services include primary care, primary dental care, radiology, laboratory services, and mental health services.

iii. Providers

As of July 2013, the NYS Education Department Office of the Professions reported 1,240 registered licensed medical doctors in Dutchess County (up from 933 in April 2009) and 244 licensed dentists (up from 219 in April 2009). It should be noted that identification as a Dutchess County practitioner is based on the licensee's primary mailing address on record with the Office of the Professions; the address is not necessarily the licensee's practice address. Although licensees must be registered to use the professional title or to practice within NYS, being registered does not mean the licensee is actively doing so (*NYS Education Department Office of the Professions*).

The landscape of medical practices has been changing in the County, with multiple small group and solo practices merging with a few large practices that provide multi-specialty services in centralized locations. The majority of primary care and specialty providers have joined Mid Hudson Medical Group, Health Quest Medical Practice, and Mt Kisco Medical Group. Vassar Brothers Medical Center has a Medical Mall in Fishkill, providing outpatient services in a

non-hospital environment, including surgery, imaging, radiation oncology, infusion therapy, physical and occupational therapy, as well as speech and language pathology.

iv. Health Professional Shortage Areas and Medically Underserved Population

A Health Professional Shortage Area (HPSA) is a geographic area, specific population group, or healthcare facility that has been designated by the Federal government as having a shortage of health professionals. HPSAs are designated using several criteria, including population-to-clinician ratios. This ratio is usually 3,500 to 1 for primary care, 5,000 to 1 for dental health care, and 30,000 to 1 for mental health care.

Dutchess County has no primary care HPSA; it has dental HPSAs in the lower income population in greater Poughkeepsie and in Fishkill Correctional Facility, and a mental health HPSA at Downstate Correctional Facility.

Medically Underserved Populations (MUPs) may include groups of persons who face economic, cultural or linguistic barriers to health care. Dutchess County has three areas of MUP, the Hispanic population in the city of Beacon, the migrant seasonal farm workers in the eastern portion of the County (Amenia, Dover, Pawling, Pine Plains, Stanford, Washington), and the low income population of the city of Poughkeepsie (*U.S. Department of Health and Human Services Health Resources and Services Administration*).

v. E911-EMS

EMS service within Dutchess County is regulated by New York State DOH Public Health Law Article 30, Article 30a and Chapter VI of Title 10 (HEALTH) of the Official Compilation of Codes, Rules and Regulations: State Emergency Medical Services Code Part 800. The requirements and certification of providers (CFR, EMT, EMT-P) and EMS agencies are regulated and monitored by NYSDOH in conjunction with Regional EMS Councils. Dutchess County is under the Hudson Valley Regional Council. Dutchess EMS is provided by local volunteer and career fire departments, one non for profit EMS agency and four private EMS agencies. The Dutchess EMS Council is comprised of representation for all EMS agencies with authority to operate within the borders of Dutchess County. The Council provides a pathway to effect change and improvements to the Regional Council and NYSDOH. In addition, Dutchess County

has a centralized E911 dispatch center which utilizes emergency medical dispatch program to provide appropriate emergency medical response, immediate care and pre-arrival instructions. Every municipality in the County has a fire department/unit.

vi. Pharmacies

As of October 2013, there were 71 pharmacies throughout Dutchess County (up from 57 in 2009); 61% are part of a pharmacy chain or large grocery/department. Four pharmacies are based in Dutchess County medical centers. The pharmacies are concentrated in the Southwestern portion of the County, followed by the northwestern region, but there are pharmacies located throughout the entire county (not counting out-of-county pharmacies bordering the County and mail-order pharmacy services).

vii. Mental Health Services

The Dutchess County Department of Mental Hygiene (DCDMH), in conjunction with allied agencies and community partners, coordinates an array of public services and programs to meet the mental health needs of Dutchess County residents. These include inpatient treatment, outpatient treatment, chemical dependency and rehabilitation programs, advocacy and referral services, and programs for children and adults with developmental disabilities, as described in Table 55.

Table 55
Mental Health Services Provided by
Dutchess County Dept. of Mental Hygiene and Partner Agencies

Service Type	Persons Served in 2012
HELPLINE <i>Telephone counseling, crisis intervention, information and referral service available 24 hours a day, 7 days a week</i>	6,894
Mobile Crisis Intervention Team <i>Short term intervention to stabilize persons in distress to avoid hospitalization</i>	482
Crisis Residence <i>Short term respite care for those in acute distress to avoid hospitalization</i>	251
Chemical Dependency Crisis Center <i>24 hour medically-monitored withdrawal care</i>	472
Partial Hospitalization Program <i>Intensive five-day-a-week program to prevent or reduce inpatient stay</i>	380
Psychiatric Emergency Department Treatment	5,290
Psychiatric Inpatient Care	1,195
HVMH Outpatient Clinic Services, Mansion St. Clinic, Hedgewood Clinic, Clinic for the Multi-Disabled, and Continuing Day Treatment ¹⁰ <i>Adult residential and community-based clinical mental health programs</i>	4,807
Chemical Dependency Outpatient Clinic Services, Rehabilitation Services, and Methadone Services	2,046
Children's Mental Health Services <i>Clinic treatment, day treatment, home-based crisis intervention, and partial hospitalization services</i>	2,743
Jail-Based Services, Court Evaluations, & Forensic Services <i>Mental health and chemical dependency services for incarcerated persons, pre-trial psychiatric evaluations, and provision of behavioral healthcare treatment options as an alternative to incarceration.</i>	874
Mental Health and Chemical Dependency Case Management <i>Linking and coordinating services to support mentally ill individuals and those in treatment for chemical dependency</i>	3,351
Habilitation, Training and Vocational Services for the Disabled <i>Day programs for developmentally disabled individuals and their families</i>	862

Data Source: DCDMH

¹⁰ Mansion St, Hedgewood Clinic, and Clinic for the Multi-Disabled programs ceased after 12/2012. Continuing Day Treatment program ceased after 3/2012.

b. Medical Transportation

Dutchess County has a mix of transit services, including bus, rail, and ferry. The LOOP Bus System serves every town in the County but service to rural areas off the main roads can be limited. A complete schedule of the LOOP bus routes can be found at <http://www.co.dutchess.ny.us/CountyGov/Departments/MassTransit/19226.htm>. The LOOP operates two demand responsive services: Dial-a-Ride and ADA Complementary Paratransit Service. Dial-a-Ride is available to individuals who cannot use the LOOP and who reside in or have a trip origin in Amenia, Dover, East Fishkill, Hyde Park, North East, Poughkeepsie, Stanford, Wappinger and Washington. ADA Complementary Paratransit Service (as required by the Americans with Disabilities Act of 1990) is available to eligible individuals who live within $\frac{3}{4}$ mile of a regularly scheduled bus route (Dutchess County LOOP or City of Poughkeepsie) and who cannot use the regular fixed route service.

The Dutchess County Department of Social Services and Office for the Aging provide Medicaid-funded medical transportation for eligible individuals of all ages. In 2012, the Department of Social Services spent over 8 million dollars in 2012 on medical transportation – a 15% increase from 2011. There are also non-profit organizations that provide transportation to seniors, targeting rural areas where public transportation is difficult to access. Community Resources and Services Center services Pawling; the North East Community Center services residents in North East, Millerton, Amenia, Dover, Wassaic, and works with the North East Transportation Program in Pine Plains, Stanford, and Washington. Many residents travel out of county for medical services, but since county vehicles cannot leave the County, residents must find other ways to travel.

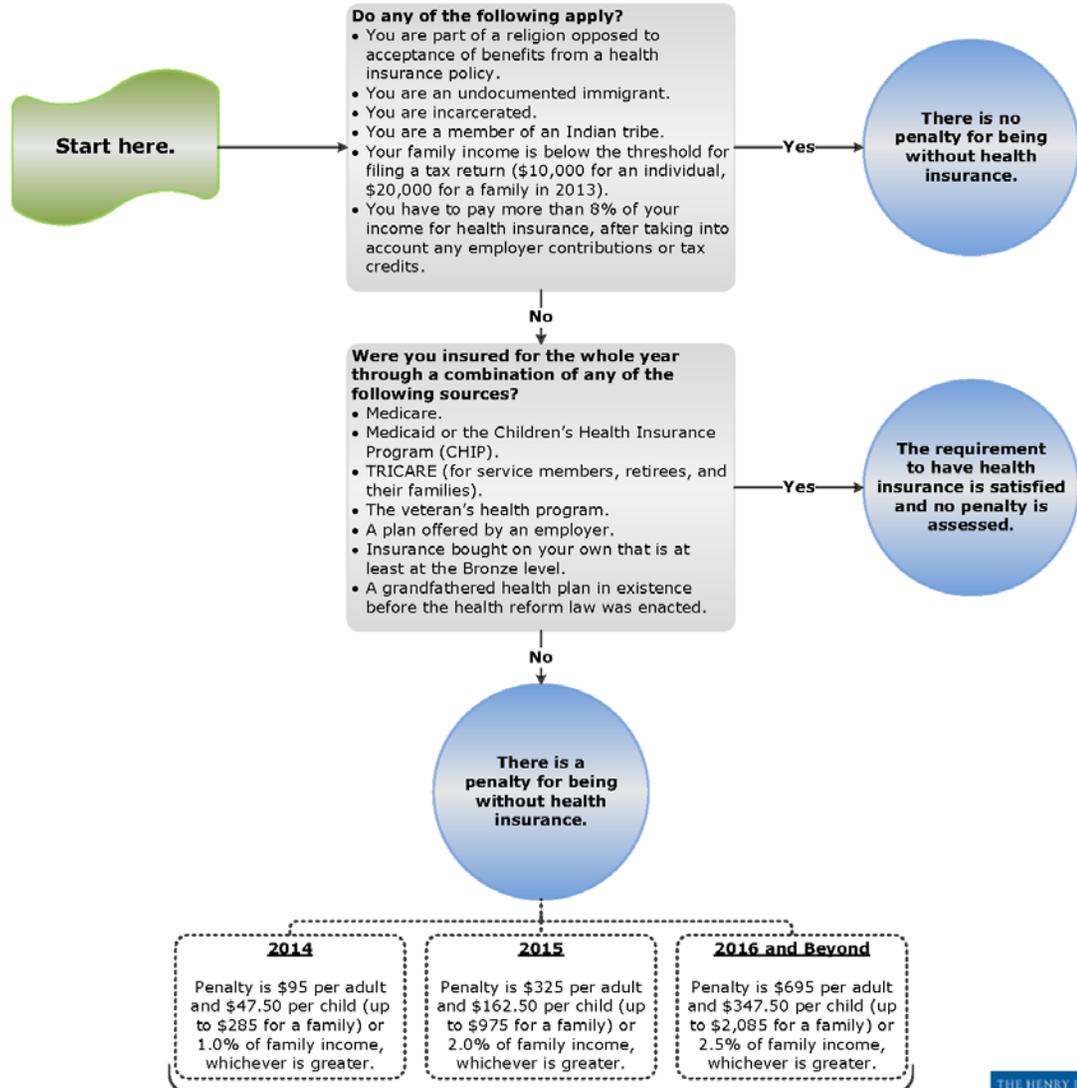
c. Health Insurance

This report was written in the midst of the implementation of the NYS Health Insurance Exchange which is part of the deployment of the Patient Protection and Affordable Care Act, signed into law in 2010. This Act is only briefly addressed as it is outside the scope of this report to discuss it in any detail. It is being deployed in a phased approach with the goal to expand health insurance coverage, control healthcare costs, and improve healthcare delivery

system. Along with changes to the health insurance system that aim to guarantee access to coverage to everyone regardless of pre-existing health conditions, the Affordable Care Act includes a requirement that many people be insured or pay a penalty. This simple flowchart in Figure 113 illustrates how that requirement (sometimes known as an “individual mandate”) works.

Figure 113

The Requirement to Buy Coverage Under the Affordable Care Act Beginning in 2014



Income is defined as total income in excess of the filing threshold (\$10,000 for an individual and \$20,000 for a family in 2013). The penalty is pro-rated by the number of months without coverage, though there is no penalty for a single gap in coverage of less than 3 months in a year. The penalty cannot be greater than the national average premium for Bronze coverage in an Exchange. After 2016 penalty amounts are increased annually by the cost of living.



Key Facts:

- Premiums for health insurance bought through Exchanges would vary by age. The Congressional Budget Office estimates that the national average annual premium in an Exchange in 2016 would be \$4,500-5,000 for an individual and \$12,000-12,500 for a family for Bronze coverage (the lowest of the four tiers of coverage that will be available).
- In 2012 employees paid \$951 on average towards the cost of individual coverage in an employer plan and \$4,316 for a family of four.
- A Kaiser Family Foundation subsidy calculator illustrating premiums and tax credits for people in different circumstances is available at <http://healthreform.kff.org/subsidycalculator.aspx>.

Information on the Affordable Care Act is available at <https://www.healthcare.gov/> and information on the NYS health insurance exchange can be found at <http://healthbenefitexchange.ny.gov/what-ny-state-health>.

Managed Medicaid Care plans focus on preventive care and provide participants with comprehensive medical care from a single point of entry. Most Medicaid health benefits are included in the services provided by the managed care plans. All the plans provide coverage for routine eye and dental care and most provide family planning services. The majority of plans has their own dental and eye providers; for those who do not provide coverage for these services, participants use their Medicaid card. Other services that are only covered by Medicaid include orthodontics, prescriptions, and outpatient chemical dependence rehabilitation and treatment services.

Table 56
Medicaid Managed Care Enrollment
Dutchess County, 2011

Insurance	Medicare Advantage	Child Health Plus	Medicaid Managed Care*	Family Health Plus
Aetna	250	0	0	0
Catholic Special Needs	153	0	0	0
CDPHP	59	271	0	0
Empire	383	1,345	0	0
Fidelis	0	1,103	3,313	715
HIP	2	0	0	0
Hudson Health	0	1,639	6,293	917
MVP	1,271	1,601	6,458	1,030
Oxford	4	0	0	0
United Healthcare Commercial	90	0	0	0
WellCare	0	788	2,056	281
Total	2,212	6,747	18,120	2,943

Data Source: NYSDOH Annual Medicaid Managed Care Report
* Members enrolled in traditional fee-for-service Medicare are not included

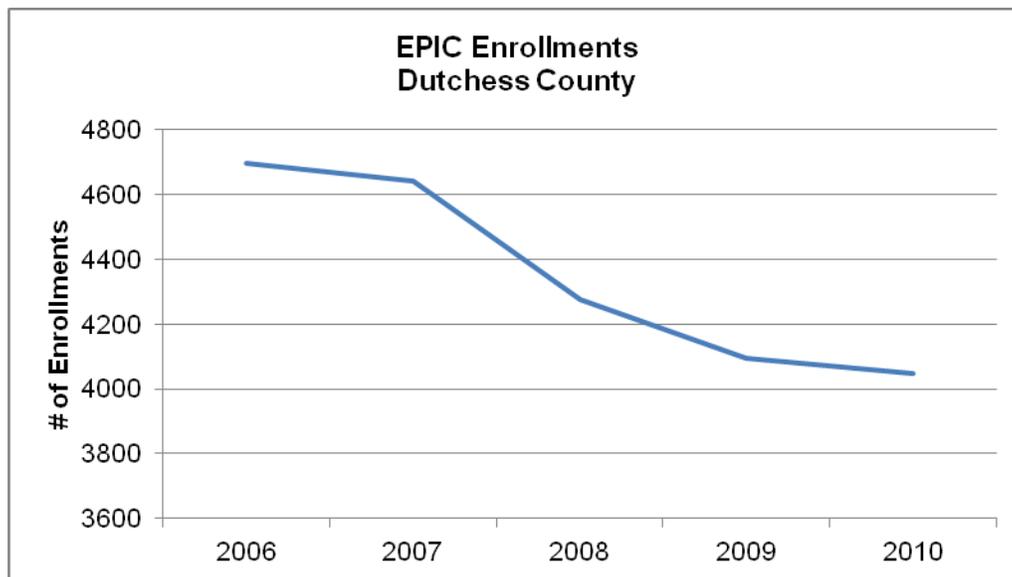
At the time of this publication, Dutchess County dental providers accepting Medicaid number eight practices, most with multiple locations, including four dental clinics provided by

Hudson River HealthCare. The majority of medical practices in Dutchess County accept patients covered by Medicaid Managed Care plans.

Medicare recipients can choose between the original Medicare coverage and a Medicare Advantage Plan. Medicare Part D is an optional prescription plan. There are numerous insurance carriers that offer Advantage Plans, including HMOs, Preferred Provider, and Private Fee-For-Service models.

Elderly residents may also be eligible for “Elderly Prescription Insurance Coverage” (EPIC) if they meet certain income requirements. EPIC is a NYS program for seniors administered by the NYSDOH. It helps income-eligible seniors aged 65 and older to supplement their out-of-pocket Medicare Part D drug plan costs. As of 9/30/2010, enrollment was 4,048, a 14% decrease since 2006.

Figure 114



Data Source: NYSDOH

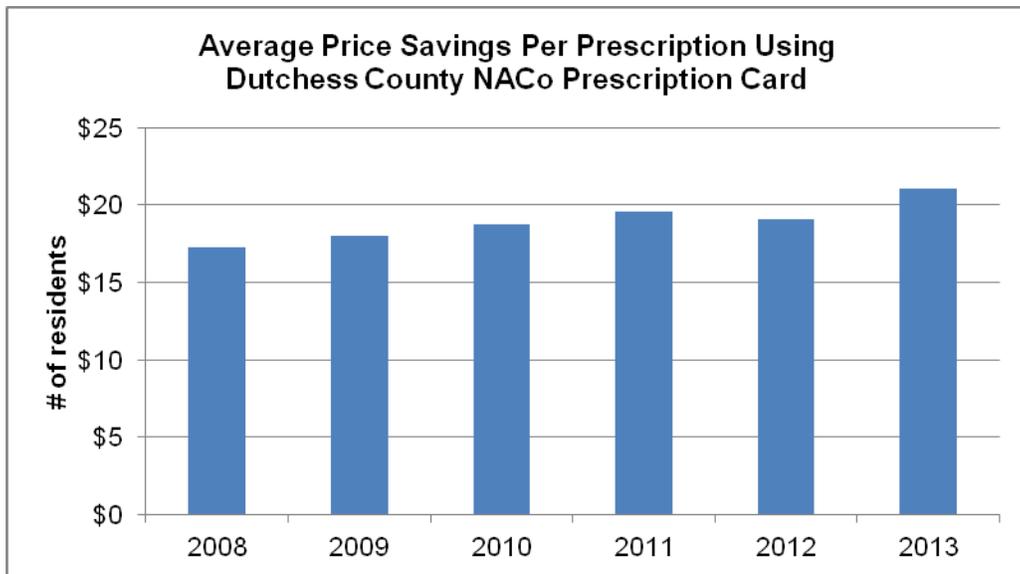
In addition to health insurance plans, Dutchess County offers the following options for County residents of all ages:

- The National Association of Counties (NACo) Dental Discount Program provides access to more than 50 dentists, orthodontists, and dental specialty practices participating in the County. Savings on dental procedures including routine oral exams, cleanings, dentures, root canals, crowns, can save 5-

50%. As of December 2013, there were 218 active members (*NACo Dental Discount Program*).

- For any County resident who needs assistance with prescriptions, the NACo Prescription Drug Program is available at no cost. This program is not an insurance plan and cannot be used in conjunction with an insurance prescription plan but provides residents with a discount for their medications at certain participating pharmacies. After peaking in 2008, the average number of monthly users has been decreasing, dropping from 976 in 2008 down to an average of 339 in 2013, a 68% decrease. The average percent savings per prescription has remained around 30% although it rose to 35% in 2013. The total price savings dropped from \$475,675 in 2008 to \$161,214 in 2013 due to decreased utilization. There has been a slight increase in the average price savings per prescription as seen below.

Figure 115



Data Source: NACo Prescription Drug Program

d. Laboratories

There are a number of clinical laboratories available in Dutchess County, including that of the DCDOH. LabCorp and Quest Diagnostics are two of the largest providers that have patient centers throughout the County although they are primarily located in the southwest. Quest Diagnostics has centers in Poughkeepsie (3), Hyde Park (1), Fishkill (1), and Rhinebeck (1). LabCorp has a center in Poughkeepsie and one in Fishkill. It also has a number of centers in

Ulster County, within reach of Dutchess County residents. However, the northeastern portion of the County remains isolated.

2. Barriers and Affected Sub-Populations

The three most significant barriers to accessing healthcare services are financial, structural, and personal.

a. Financial Barriers

Individuals ages 18-64 years are at highest risk for being uninsured. The elderly are covered for the most part by Medicare and children by Child Health Plus. As discussed in *Maternal Child Health*, indigent women are eligible for free pregnancy care through prenatal care assistance programs regardless of citizenship and legal status but the coverage does not extend beyond the postpartum period. A breakdown of enrollments in Dutchess County Contracted Managed Care Plans can be found under *Availability and Accessibility of Providers and Services – Health Insurance*.

Table 57

Individuals Without Health Insurance Coverage by Age Group

Year	Dutchess County				NYS			
	Total	0-17 Yrs	18-64 Yrs	65+ Yrs	Total	0-17 Yrs	18-64 Yrs	65+ Yrs
2008	10.4%	8.1%	13.1%	0.5%	11.8%	5.8%	16.0%	1.5%
2009	9.3%	3.1%	13.1%	1.6%	11.4%	4.6%	15.9%	1.0%
2010	9.1%	3.6%	12.9%	0.4%	11.9%	4.8%	16.6%	1.1%
2011	9.5%	4.4%	13.1%	0.7%	11.4%	4.2%	16.0%	1.2%

Data Source: U.S. Census Bureau, American Community Survey

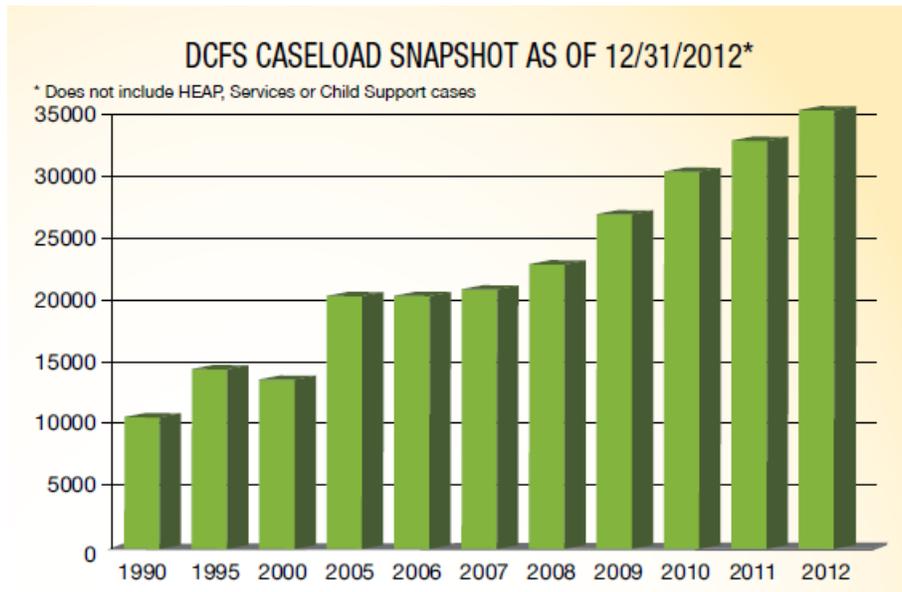
Two recent county surveys provide insight into the issues involving access to health care, affordability of services, and health insurance coverage. The Many Voices One Valley 2012 survey conducted by Marist College Institute for Public Opinion and funded by the Dyson Foundation shows that 21% of Dutchess County households have experienced a gap in healthcare insurance sometime in the past or current year; this is the same rate reported in the 2007 survey. Difficulties in acquiring health insurance were voiced by 40% of respondents (up

from 37% in the 2007 survey), particularly among Black respondents (52%). Financial strain of healthcare and medical costs not including healthcare insurance was reported by 39% of residents.

The *Dutchess County ICA Community Health Survey 2012*, spearheaded by the Dutchess County Department of Health and funded by Health Quest, St. Francis Hospital, the Foundation for Community Health and the Dutchess County Department of Health, reported that close to one third of households (32.5%) needed but did not receive one or more types of healthcare service in the past year; health insurance problems were cited as the barrier in 44% of these households. Specific health insurance problems included 1) uninsured and could not pay out-of-pocket (89%), insurance policy did not cover the service (55%), and co-pay or deductible too high (45%). In a multivariable model controlling for region and demographic characteristics, Dutchess County residents with health insurance were 85% less likely than those without it to have at least one unmet healthcare need. Female respondents were twice as likely as males to have health insurance, and older adults were significantly more likely to be insured than young adults. Health insurance was the only significant predictor of having a primary care provider, controlling for all other demographic characteristics. Again, it remains to be seen how the Affordable Care Act will impact current trends and issues.

Recipients of social services provide another measure of financial vulnerable sub-populations. The Dutchess County Department of Family Services has seen a dramatic rise in its caseload (Figure 116).

Figure 116



Data Source: Dutchess County Family Services Annual Report 2012

The highest proportion of recipients resides in the following municipalities (1,000 or more recipients):

- City of Poughkeepsie 13,342
- Town of Poughkeepsie 4,583
- Wappingers Falls 3,766
- City of Beacon 3,648
- Hyde Park 1,914
- Hopewell Junction 1,507
- Fishkill 1,212
- Pleasant Valley 1,022

b. Structural Barriers

Except for the more urban, densely populated southwestern portion of the County, Dutchess County is more of a suburban and rural community. As discussed earlier in this section under *Availability and Accessibility of Providers and Services*, healthcare services tend to be concentrated in the more densely populated Southwestern portion of the County and public transportation is limited in the rest of the County.

According to the *Dutchess County ICA Community Health Survey 2012*, residents of the Eastern portion of Dutchess County were five times as likely to travel outside of Dutchess County for health care as residents of the Northwestern region. Residents with higher incomes were also significantly more likely than low-income residents to travel outside the County for care, regardless of region.

c. Personal Barriers – Immigrant Population

As evidenced in *Demographics and Economics* section of this report, the County is becoming more racially and ethnically diverse. The growth and volume of the Hispanic/Latino population has brought to light access issues which in great part apply to any immigrant. While quantitative data can identify differences in rates and number of individuals by ethnicity, these data do not address the issues encountered by foreign-born individuals, particularly those who have come to the U.S. in recent years.

A recent county level publication has provided the first in depth assessment of the healthcare needs of recent immigrants to Dutchess County (*The Immigrant Health Initiative: A Study of Health Care of Recent Immigrants in Dutchess County, New York; Schmidt H, Waltner A, Muller S, 2011*). This publication is available on the Dutchess County Department of Health website.

Two regions in Dutchess County were identified as having high concentrations of immigrants - (1) the City of Poughkeepsie – considered urban, and (2) the Eastern Dutchess corridor which is considered primarily rural and encompasses (from North to South) Pine Plains, North East, Stanford, Amenia, Washington (Millbrook), Wassaic, Salt Point, Dover/Dover Plains, Wingdale, and Pawling. The target population was defined as any foreign-born adult, at least 18 years of age, who has resided in the U.S. no more than 10 years and lives in one of the two selected regions in Dutchess County. The survey respondents were mostly from Latin America, primarily Mexico and Central America.

The primary barriers encountered included lack of health insurance, language, cost, and availability and awareness of services. Female gender was the most significant determinant of

healthcare seeking behavior. This finding is in part likely a result of the existence of readily available entryway programs for women particularly with respect to prenatal care and child health. Women are more likely to be insured, visit a healthcare provider, participate in some preventive health screening, and consequently to report one or more chronic diseases.

Longevity in the U.S. and health insurance were the second most common factors associated with seeking health care. While not a determinant of seeking health care, language also remains an important factor in healthcare seeking behavior for immigrants.

Cultural beliefs regarding health and illness also impact service utilization and health outcomes, and provider cultural awareness and sensitivity are of paramount importance in creating a successful patient-provider relationship. In the study, almost two thirds of immigrants acknowledged use of herbal remedies in their country of origin, yet only 37% use these remedies in the U.S. Over half of those who use these remedies in the U.S. indicated they did not admit use of herbal remedies to their current physician. Nearly 50% said their doctor did not ask about use of herbal remedies. Some felt that the doctor was not interested in knowing about herbal medicines (22%), or would want them to take Western medicines instead (22%).

Fear of deportation can also make illegal immigrants reluctant to seek out services from agencies that may require some form of identification and which are or are perceived to be government agencies.

SECTION 2: THE LOCAL HEALTH UNIT CAPACITY

While the community health assessment and improvement plan involves the entire public health system within Dutchess County, the internal strategic planning process focuses primarily on the DCDOH internal structure and function. The Local Department of Health (LHD) is just one player in a larger public health system.

The role of the LHDs in New York State and across the nation is changing, requiring augmented capacity and infrastructure to perform critical assessment and assurance functions. LHD are being called upon to generate locally important, timely, geographically insightful and accurate data. The LHDs are now required to establish interventions based on the analysis of

the data, and use their resources in implementing these efficiently through community-oriented collaborations.

The Dutchess County Department of Health has been meeting these challenges through the enhancement of its surveillance and monitoring capacity, and the strengthening of community prevention through collaboration and leadership development. The following section provides a brief overview of the capacity of the local health department and the resources available to perform the essential public health services.

DCDOH – The Organization

The Department’s vision statement “*The Dutchess County Department of Health will be a trusted leader, advocate, and partner with the community to reduce risk and promote public health.*” reflects its shifting role from provider of health services to an agency that engages the community in identifying health and environmental issues and concerns, developing a plan to address those issues and concerns, and working with community members and providers to take individual and collective action.

The DCDOH currently has offices located throughout the County - in Poughkeepsie, Millbrook, and Beacon. It is licensed by the New York State Department of Health as an Article 28 Diagnosis and Treatment Center. DCDOH has 121 employees (equivalent of 120.75 FTE) and an annual budget of about 34 million dollars. An estimated 48% of this budget is funded by a series of direct grants, reimbursements, fees and aid from a number of sources, primarily the NYSDOH. The remaining 52% is funded from County dollars.

The DCDOH is a full service LHD and is comprised of the following divisions: Administrative & Fiscal division; Health Planning & Education division; Environmental Health Services; Public Health Nursing Division; and Communicable Disease Control Division. Additionally, the DCDOH also includes a Division for Children with Special Needs that manages the Early Intervention & preschool Special Education programs, as well as a Medical Examiner’s Office.

What makes the DCDOH unique in its composition is the fact that in addition to the more traditional areas listed above, there are two additional divisions: The Division of Weights & Measures and the Division of Veteran Services.

In 2012, the former Department of Consumer Affairs was disbanded and the resulting Division of Weights and Measure (WM) integrated into the DCDOH. This division carries out inspections of commercial scales, gas pumps, home heating fuel delivery meters, package commodities, and scanner and item pricing found in retail establishments to ensure consumers of their accuracy. The integration of this division has increased the DCDOH capacity to handle product recalls as well as assessment of backup generators for Petroleum Company as part of the DCDOH emergency preparedness planning efforts.

The Division of Veterans Services was brought in to the DCDOH as of January 1, 2013. Integrating routine administrative functions was quick since the Veteran Services Division is comprised of four individuals who have been a welcome addition as we have enhanced our outreach to veterans and developing stronger connections with the VA hospital at Castle Point.

Workforce

The DCDOH has seen a decrease in its workforce over the year. An analysis prior to 2011 would not reflect the true trend for each division because prior to that year, all clerical support staffs were included in the Administrative Division and would not reflect the true require number of FTE for the respective divisions to carry out their functions.

Between 2008 and 2012, we closed our Long Term Care, our Certified Home Health Care, and our Water Lab with 4 layoffs. The decrease in PHN Division was offset by the realignment of staff – as positions were moved from PHN to EI Division. Over the past 3 years, we have mostly experienced attrition through retirements and vacancies.

The table below shows the workforce adjustments from 2011 to 2014. Over the four years period, our Department has seen a 10.39% reduction in its overall workforce. However, If we remove the two divisions of W&M and Veterans Services, the reduction of our *public health workforce* was actually 13.84% (from 130.75 FTE to 112.75 FTE).

APPROVED F . T . E . POSITIONS IN BUDGET					
Division	Fiscal Year 2011	Fiscal year 2012	Fiscal Year 2013	Fiscal Year 2014	% change
Administration	18	18	15	13	-27.78%
Health Planning & Education	10	11	9.75	9.75	-2.5%
Environmental	45	46	44	44	-2.22%
Public Health Nursing	22	18	16	12	-45.45%
Communicable Disease	18.75	17.75	16.75	16	- 14.67%
Preschool	4	4	4	4	-
Early Intervention	8	10	8	8	-
Medical Examiner	5	5	5	6	+ 20%
Weights & Measures	4	4	4	4	-
Veterans Services	0	0	4	4	-
TOTAL	134.75	133.75	126.5	120.75	-10.39%

Overall, the Department has been able to absorb the staffing reduction following the workforce adjustment incentive program. We expect to meet our mandates and maintain the core services that our community has come to rely on. We will continue to assess all of our programs and our re-structuring efforts throughout the year, adjusting our plans as needed to safeguard our ability to provide our mandated services and maintain a level of service which ensures the protection of our community's health.

Technical Capacity to perform Community Assessment

The HP&E Division carries out the community health assessment activities. The team responsible for assessment consists of an Epidemiologist and one Biostatistician, both of whom hold a Masters in Public Health. Additionally, a GIS technician provides essential support to the team. The Department also works to capitalize on the Hudson Valley's schools of Public Health. The joint collaboration of academia with public health practice has fostered several internships and assessment initiatives. The DCDOH team has conducted several local surveys over the past

years, including Lyme Disease & Other Tick-borne Disease Community and Provider surveys to assess knowledge, behavior and attitudes.

Laws and Regulations

The Dutchess County Sanitary Code contains the rules and regulations supplemental to the Public Health Law, the New York State Environmental Conservation Law, the New York State Sanitary Code and other state laws.

There are currently 27 articles in the County's Sanitary Code, covering several issues, including: permits, inspection, investigation, and enforcement. The topics covered are: public water supplies, public swimming pools and bathing beaches, temporary residences, public health nuisance, children's camps, communicable diseases, realty subdivisions, temporary and non-temporary food service establishments, migrant farm work housing, water well construction, mass gathering, sewerage and sewage disposal, lead poisoning control, housing hygiene and occupancy, child care facilities and nursery schools, mobile home parks, offensive material, tobacco and tanning facilities.

Some of the Articles of our Sanitary Code are worth mentioning, as they are rather unique to our County. These include: Article 22 (Child Day Care Facilities and Nursery Schools), Article 25 (Tobacco Products), and Article 27 (Tanning Facilities).

Article 22 requires persons who operate a child day care facility or nursery school in the County to possess a valid permit issued by the County Health Commissioner. Provisions are made regarding sanitary and safety requirements, communicable disease and health care, recreation area, supervision, fire safety, and infants under three years of age.

Article 25 of the County Sanitary Code was adopted on October 23, 1997, and regulates the sale of tobacco products as well as smoking on school grounds. In 2002, the County Legislature enacted local law No 5 to regulate second hand smoke by prohibiting smoking in public places and places of employment. In 2003, New York State passed amendments to the Clean Indoor Air Act which became effective on July 24, 2003, essentially eliminating smoking in places of employments. DCDOH engages in ongoing education about the perimeters between the State law and our Sanitary Code relative to smoking policies.

Article 27 regulates tanning facilities and requires a permit to operate such a facility. The Article regulates the operation and maintenance of tanning devices and requires the owners of tanning facilities to report injuries resulting from the use of the tanning equipments.

Media Messages

Dutchess County residents and visitors have access to news and information through a variety of physical and electronic media groups. There are three printed newspapers serving the County. Additionally, MidHudsonNews.com and HVPress.net provide access to online news updates for the Hudson Valley Region. Three radio groups with more than 12 radio stations combined provide listeners with a variety of entertainment, news, and alerts.

The recent *Dutchess County ICA Community Health Survey 2012* report indicates that the Internet was 72% of respondents' first or second favorite source of information about social, financial, and health services – up slightly from 62% in the 2009 version of the same report. Word-of-mouth was still the next favorite source of information, although men preferred it 30% less than women. A small minority of respondents identified 211, a free regional information service, as a favorite way of getting information. Preference for the Internet was significantly lower among older adults, while preference for television or newspaper was generally higher among older adults. College graduates were more likely to prefer the Internet. Hispanic residents preferred the Internet by a significant margin. There were no regional differences of note.

Dutchess County Government hosts a wide array of information on its website, including health information, programs and services, calendar events, and news releases. The Department of Health has over 900 pages on the county website, providing information and resources. Enhanced accessibility is available through vignettes on the website, including translation of the text in a variety of languages, and the audio option to activate the voice over text and enable the web visitor to listen to the webpage. The website-based free subscription service is also available where individuals can register their email, cell phone, or social media account to receive a message when a topic of their choosing is updated on the website.

In the event of emergency alert situations, where there may be need to distribute information to individuals immediately, the County also utilizes the New York State Alert program, NY-Alert, which allows the County to send email, text, fax, or voice alerts to individuals through their reverse-9-1-1 directory (i.e., individuals who have a landline within Dutchess County) or who have registered to receive such alerts through the Civilian Portal of NY-Alert. <http://marketing.nyalert.gov/> . Individuals who register for NY-ALERT can pick-and-choose which alert types they would like to receive and identify geographic areas of interest.

Strategic Planning

The DCDOH worked with the New York Council of Nonprofits (NYCON) to develop and execute an organizational strategic planning process between January and May of 2012. The strategic planning process included an analysis of an organization’s internal strengths and weaknesses and external opportunities or threats. The process included:

- Two on line surveys which were conducted in March as part of SWOT analysis: One for our staff to review the mission, vision and values and obtain feedback and input; and another for our community partners/stakeholders that was based on ten essentials services and their perception of our ability to carry out these services.
- An initial planning session to identify broad strategic issues and goals. This session involved the Department’s Strategic Planning Committee (SPC).
- A half day planning session with members of a “Strategic Planning Advisory Response Team” (StART) to provide feedback on the proposed broad strategic issues, and to develop specific strategies and actions.
- A second planning meeting with the SPC to review the StART proposals, and develop a first draft plan,
- A joint meeting with members of both the StART” and SPC to review the draft plan, and
- Finalization of the plan with the Department’s leadership team.

The resulting document reflects the strategic issues and priorities identified through the planning process. Each strategy has a series of actions that will be reviewed and revised periodically as progress is made or circumstances evolve.

1. **Programs and Service Delivery** -DCDOH will expand its focus on system wide planning and coordination to maximize its impact on public health.
2. **Staff Composition & Structure** -DCDOH will maintain a strong, qualified, engaged and well-trained workforce
3. **Information Technology & Data Management**- DCDOH will maximize effectiveness of data management systems to demonstrate community impact.
4. **Public Communications** -DCDOH will implement diverse outreach, marketing and public relations strategies to maximize education and empowerment

Developing a strategic plan has provided the department with an opportunity to take inventory and assess if we are on an appropriate and sustainable course. Engaging staff and stakeholders, has provided cohesion for employees to deal with organizational, programmatic and funding changes. Realigning the Departments strategic plan to address changes in Public Health perspectives and funding, will help the Department prepare for the accreditation process and quality improvement efforts.

CHA Appendix 1 - List of Acronyms and Abbreviations

ACS – American Community Survey

CDC – Centers for Disease Control and Prevention

CLRD – Chronic Lower Respiratory Disease

COPD – Chronic Obstructive Pulmonary Disease

EBRFSS – Expanded Behavioral Risk Factor Surveillance Survey

ED – Emergency Department

FERPA – Family Educational Rights and Privacy Act

HMIS – Homeless Management Information System

ICA – Integrated County Assessment

NYC – New York City

NYS – New York State

SWSCRS - Student Weight Status Category Reporting System

Yrs - Years

CHA Appendix 2 - Data Notes

Why Are Different Date Ranges Used for Different Indicators?

Data are presented either as a single year intervals or as multi-year averages. The latter improves the reliability of data, particularly for rare conditions where slight variations in numbers can result in potentially misleading large fluctuations in annual rates. The number of years presented for each indicator will fluctuate depending on the availability of data and the relevance of including more or fewer years' worth of data.

Regarding Demographic Data

Numerous data tables in the Demographics section are derived from the U.S. Census Bureau's decennial Census (i.e. Census 2000 and Census 2010) and the American Community Survey (ACS). U.S. Census Bureau Population Estimates are also used throughout the report in the calculation of annual rates for years between decennial Census counts. For more information about these data sources, please refer to <http://www.census.gov/>.

Healthy People 2020

Healthy People 2020 (HP2020) is referred to throughout the report as a benchmark for certain indicators. It provides a framework for nationwide health promotion and disease prevention. It is a statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats. For more information on Healthy People 2020, please refer to <http://www.healthypeople.gov/>.

New York State Prevention Agenda 2013-2017 Objectives

A select group of 58 Prevention Agenda objectives were chosen to be tracked annually for New York State. Baseline and updated data will be published on the DOH Website. http://www.health.ny.gov/prevention/prevention_agenda.

Objective targets were determined by reviewing historical data for each indicator. When the trend has been moving in a desirable direction, the committee projected an improvement of 5-10%, based on intervention strategies and resources. If, however, the trend has been moving in the wrong direction, the committee projected a smaller percent improvement (0-5%). When the indicator was a HP2020 objective, or other objective, committees tried to select the same target if, based on the committee's expertise, the target would be achievable within the five year time frame. Generally, an improvement of 10% was targeted for the majority of the five year objectives. This is more ambitious than the HP2020 target setting method of 10% improvement over ten years.