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The State University of New York
School of Public Health and Health Professions

POPULATION HEALTH OBSERVATORY



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The Western New York Public Health Alliance Health Risk Assessment Update, 2004-2005

EXECUTIVE SUMMARY

A REPORT ON BEHALF OF THE WESTERN NEW YORK
PUBLIC HEALTH ALLIANCE

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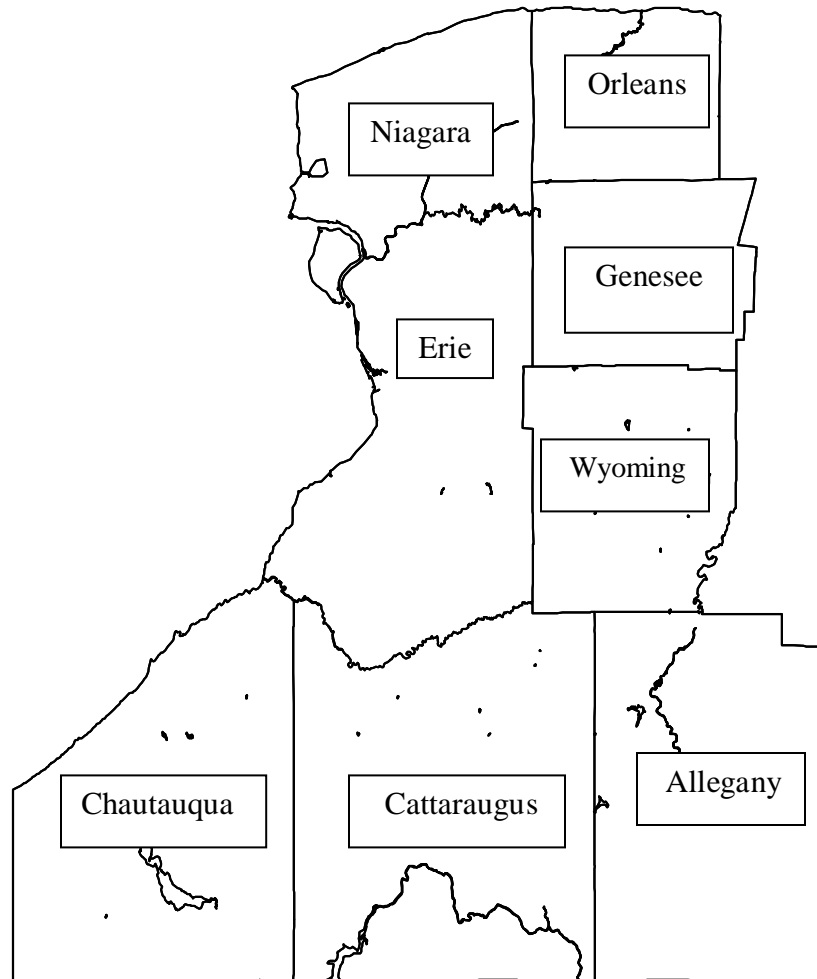
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STUDY POPULATION THE WESTERN NEW YORK REGION



EXECUTIVE SUMMARY

Introduction

This executive summary report provides key findings from analyses of the 2005 Public Health Priorities Health Risk Assessment (HRA) data. The document is divided into three separate sections. Section I provides a brief history and background of the project. Section II gives a description of the project's methodology. A summary of key findings is presented in Section III. Copies of survey instruments, a description of the random digit dialing methodology that was implemented to identify eligible households, a procedure that was used to randomly select one member of each household to interview, a discussion of possible limitations of the HRA, a data item dictionary and glossary, a list of sources for national data, and additional statistical results are presented in a complete report that can be obtained from the Principal or Co-Investigators on request.

Western New York is abbreviated “WNY” throughout the Executive Summary.

Section I: History and Background

In 1992, the Western New York Public Health Coalition (the Coalition), consisting of the Commissioners and Directors of the eight county health departments of Western New York (Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans and Wyoming) was formed. One of the goals of the Coalition was to identify the health needs of the region, not just individual counties. With funding from the New York State Health Department and in partnership with SUNY Department of Family Medicine Research Institute, and an array of community partners, a decision was made to identify the health behaviors of regional residents through the development and implementation of a regional adult behavioral health risk assessment. Using a rigorous strategic planning process, concerns of the general population were incorporated into the development of the regional survey. The Coalition contracted with the Department of Family Medicine Research Institute to develop the risk assessment tool and conduct the survey. In 1998-99 the survey was conducted, analyzed, and a report issued that was used widely across the region.

In 2004-05, Health for All, on behalf of the Western New York Public Health Alliance (formerly the Coalition) and with funding from the Health Services Resources Administration and the Community Health Foundation of Western and Central New York, Inc. re-commissioned the survey. Under sub-contract to the SUNY Department of Family Medicine Research Institute and the School of Public Health and Health Professions the earlier survey was reviewed, appropriate changes made, and the new survey conducted and analyzed.

Comparison of the two surveys will provide measures of regional behavioral change over 7 years and will be used in future work to provide evidence based recommendations for change in regional health policy and services.

Section II: Methods

Study Description: A cross-sectional random telephone survey was designed to determine the health status of adults (18 years of age and older) in the eight counties of Western New York (Niagara, Orleans, Genesee, Wyoming, Erie, Chautauqua, Cattaraugus, and Allegany). A supplemental sample of geographic areas determined to have a high percent of African Americans, Hispanics or other minorities were also sampled. These five supplemental areas included the Near East Side and the Lower West Side of the City of Buffalo both in Erie County, the City of Niagara Falls in Niagara County, and the towns of Dunkirk and Jamestown both in Chautauqua County.

Study Sample: Approximately 324 households, the number targeted by the sampling design, were selected randomly from each of the eight counties of Western New York and completed they survey. All of these households met the following inclusion criteria: 1.) At least one adult 18 years of age or older was living in the household; 2.) The household was a permanent residence and not a summer/vacation home, business, nursing home, or college dormitory; and 3.) The household address was in the target county. All residential households with working telephone numbers were equally likely to be selected in the sample, within a given county. Because the population sizes of the counties varied markedly and the targeted sample sizes within counties were equal, a single household in a smaller county was more likely to be selected than one in a larger county. Similarly, a sample of 150 households was targeted for selection from each of the five supplemental areas. Participation in the survey was voluntary and consent for participation was obtained from all responders. For each household, one adult provided information on all household members 18 years of age or older. Those targeted households that were contacted and completed the telephone questionnaire formed the study sample. Table 1 gives the number of eligible households that completed surveys in each county and each supplemental and the number of adults in these households on whom information was collected. Demographic characteristics of the study sample are given in Table 2.

Table 1: Number of completed interviews by households and number of adults in each county and in each supplemental area

County	# Households	# Adults
Allegany	324	580
Cattaraugus	306	549
Chautauqua	329	591
Erie	302	520
Genesee	325	603
Niagara	287	502
Orleans	313	570
Wyoming	313	554
Supplemental Area		
Erie (Lower West Side)	126	183
Erie (Near East Side)	111	165
Niagara Falls	142	244
Dunkirk	143	259
Jamestown	142	236

Survey Development: Health For All, Inc. followed a systematic process to develop the content of the questionnaire. First, a questionnaire used in 1998 to assess the health of Western New York was selected as the starting point to build the 2004-2005 health risk appraisal. Second, representatives from Health for All, the Department of Social and Preventive Medicine, the Family Medicine Research Institute, the Western New York Public Health Alliance, and the community met to generate ideas and rate content areas in terms of importance. New areas of interest were identified and associated questions were developed. Questions from national surveys also were obtained to supplement the 1998 survey.

A questionnaire that reflected the content agreed to by the group was presented and a series of revisions were conducted before the survey was finalized and approved. The questionnaire was pre-tested with members of the community in person and via telephone.

The questionnaire was translated into Spanish, pre-tested, and modified until a final version was validated against the English version. First the English version was translated into Spanish. Then the Spanish version was translated back into English to confirm the accuracy of translation. Discrepancies between the English and Spanish version were corrected and then the Spanish version was pre-tested in a pilot study of Spanish speaking interviewees. Bilingual individuals were selected who answered the questionnaires both in Spanish and English. Percent agreement between both questionnaires was examined and found to be adequate.

Measures: The survey includes information on the following measures:

1. Access to care
 - a. primary choice of healthcare setting
 - b. last medical visit
 - c. reason for medical visit
2. Insurance status
 - a. insurance company affiliation
 - b. duration of insurance policy
3. Disease prevalence
 - a. illness diagnosed by doctor in last 12 months
 - b. psychological and/or emotional illness
4. Family history
 - a. cancer diagnosed in immediate family
 - b. heart disease diagnosed in immediate family
5. Health status
 - a. cholesterol (LDL, HDL) levels
 - b. blood pressure (SBP, DBP)
6. Preventive services
 - a. flu shot
 - b. cancer screening methods
7. Nutrition
 - a. consumption of fruits and vegetables
 - b. milk consumption
8. Prevention behavior
 - a. seat-belt usage
 - b. physical violence
9. Physical activity
 - a. light, moderate, and/or vigorous exercise
 - b. hours of watching television or in front of computer monitor
10. Substance
 - a. tobacco, alcohol, and drug use
11. Demographics
 - a. race, income, education level, employment

Sampling Procedure: A random digit dialing methodology was implemented to identify eligible households. Random-digit dialing is centered on the concept that the random selection of four-digit numbers within existing telephone exchanges prevents biases from occurring. Such biases include excluding unlisted numbers not found on the telephone directory, and non-residential telephones. Each number generated was dialed, up to at least eight times, until contact was made. Sampling was conducted independently for each county to ensure that approximately the targeted number of 324 interviews would be obtained for each county.

Data Collection: The HRA was conducted from June 2004 to March 2005. Over 20 part-time interviewers were hired and trained by Health for All, Inc. staff to conduct the telephone surveys. Detailed record keeping for each selected telephone number was maintained by the interviewer and field supervisors. A random number of completed interviews were conducted for quality control purposes. If discrepancies or questionable results were noted a new series of random sampling of households were conducted for the affected county/supplemental area.

Completion Rates: Three hundred twenty-four surveys were aimed for completion in each of the eight counties. It was estimated that this would represent 648 individuals in each county. The samples from the five areas designated for supplemental sampling were taken separately, with 150 surveys targeted for each of the five areas. By the end of the data collection phase, 6,388 households were contacted. Approximately 50% of these agreed to participate and completed the survey. A total of 3,163 eligible households completed interviews, 2,499 in the general sample and 664 in the supplemental sample. The study questionnaire was completed for a total of 5,556 individuals in eligible households, 4,469 in the general sample and 1,087 in the supplemental sample. The numbers of households and individuals in the study sample were given, above in Table 1, by county/supplemental area.

Calculations: Four types of calculations were used in the analyses. Raw percentages were calculated as simple percentages, using only numbers from the sample data. Weighted percentages were calculated by assigning a weight, that is the proportion of adults in WNY living in each county based on 2000 US Census data, to each county and then calculating a weighted average to obtain a regional percentage. Weighted percentages were used to adjust for the over sampling of adults surveyed in smaller counties and the under sampling in larger counties that resulted from targeting an equal number of households in each county, regardless of county population size. Household weighted percentages were calculated for some purposes. These were similar to the weighted percentage but were based on the number of households in the counties, instead of population. Household weighting was used to find WNY prevalence estimates for questions that apply only to the entire household, e.g. household income. Finally, standardized percentages were used for individual county prevalence estimates. This was to allow for comparisons across counties adjusting for differences in demographics. Standardized percentages were based on a standard population defined by the 2000 US census data for WNY, stratified by gender and age categories.

Representativeness: There is a bias associated with conducting telephone interviews in that the sample only includes households with a phone, excluding the lower socioeconomic population. There is often a gender bias in telephone interviewing in that more women answer the phone. There is also the possibility of bias among those who agree to conduct a relatively personal survey over the telephone. In order to assure representativeness of the sample, the HRA data were compared to the 2000 US Census county-strata population figures. Overall, the HRA sample is proportionally similar to the 2000 Census figures of the Western New York Region (see Table 2 below). There

are, however, two notable differences. First, the HRA sample had a higher percentage of middle aged individuals than the 2000 US census of WNY (38.2 versus 30.1). Second, the HRA sample had a slightly higher percentage of females (55.7 versus 52.6).

Table 2: Description of selected demographics of participants in HRA Sample and distribution in US 2000 population estimates of adults 18 years and older

	HRA Sample			2000 Census	
	WNY Counties N = 4469		Supplemental Areas N=1087	WNY Counties	US
	Raw %	Weighted %	Raw %	Raw %	Raw %
Age					
18-44	44.6	43.2	39.1	49.3	53
45-64	36.8	38.2	35.7	30.1	30
65+	18.6	18.6	25.2	20.5	17
Gender					
Male	45.3	44.3	43.6	47.4	48
Female	54.7	55.7	56.4	52.6	52
Household Income	Responding Households				
	N = 2250		N = 608		
Less than \$10,000	8.5	8.6	13.0	10	9
\$10,000 to \$29,999	29.1	28.3	37.0	30	26
\$30,000 to \$49,999	30.3	28.3	21.6	24	23
Over \$50,000	32.9	34.8	27.4	36	42
By County	N = 4469				
	Raw %				
Allegany	13		-		
Cattaraugus	12		-		
Chautauqua	13		-		
Erie	12		-		
Genesee	13		-		
Niagara	12		-		
Orleans	13		-		
Wyoming	13		-		
By Supplemental Area			N = 1087		
			Raw %		
Erie (Lower West Side)	-		17		
Erie (Near East Side)	-		15		
Niagara Falls	-		23		
Dunkirk	-		23		
Jamestown	-		21		

Section III: Summary of Key Findings

This section presents key findings of the study, in subsections with the following headings: 1) Access to a Regular Source of Care; 2) Health Picture of the Uninsured; 3) Health Risk Behavior; 4) Disease Prevalence; and 5) Secondary Prevention and Multiple Health Risk Factors. The first four subsections contain national comparisons and presentations of results by age and gender groups, by county (general sample), and by supplemental area (supplemental sample).

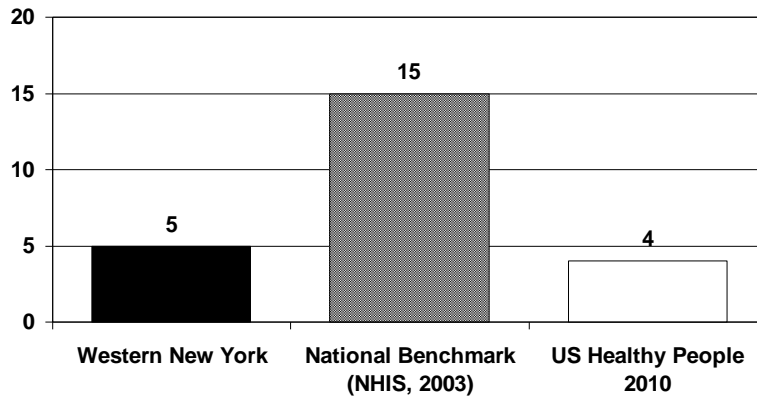
All percentages reported for the WNY region, as a whole, were calculated as weighted averages of county specific percentages, with weights determined from the 2000 US Census of WNY. These weighted percentages estimate the corresponding true percentage in the region. Percentages that are reported specific to counties are standardized percentages, based on the standard population of WNY in 2000, as determined by the 2000 US Census. These standardized percentages estimate the percentages that would have been observed in the counties, if the counties all had the same age and gender mix as the standard population. Standardized percentages can be used to compare counties, adjusting for different age or gender mix.

The most recent national figures are used for comparison purposes. These figures may differ from the NHIS figures listed in the Tabular Package. Targets from the current Healthy People 2010 will be used throughout as a means to establish a set of goals to meet in Western New York.

Access to a Regular Source of Care

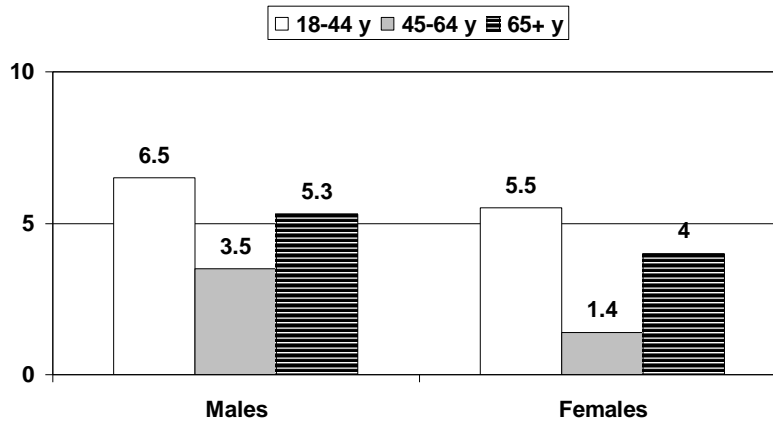
To improve health, an individual must practice preventive medicine, be diagnosed early, and treated appropriately. For this to happen, the individual needs access to regular care, i.e., a regular location where one can receive non-emergency medical care, sound health care advice, and where continuity of care is maintained.

Figure 1: Percent of WNY and US Adults 18 Years and Older With No Regular Source of Health Care



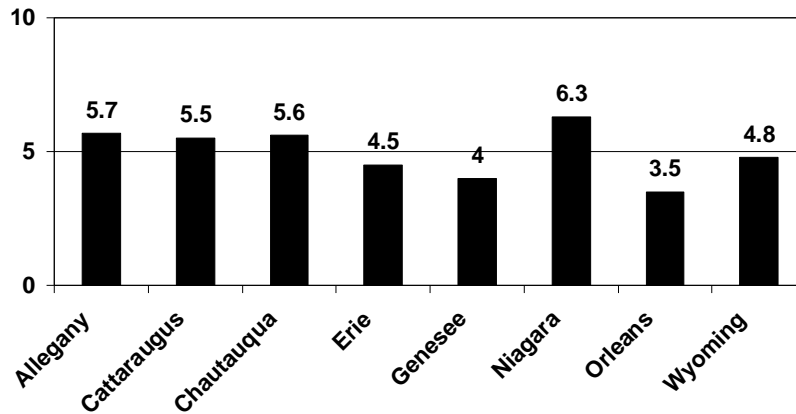
The HRA survey found that 5% of the Western New York population does not have a regular source of care. Compared to the national benchmark of 15%, Western New York is close to meeting the Healthy People 2010 goal of reducing the number of adults with no regular source of care to 4% (see Figure 1).

Figure 2: Percent of WNY Adults with no Regular Source of Health Care According to Sex and Age Groups



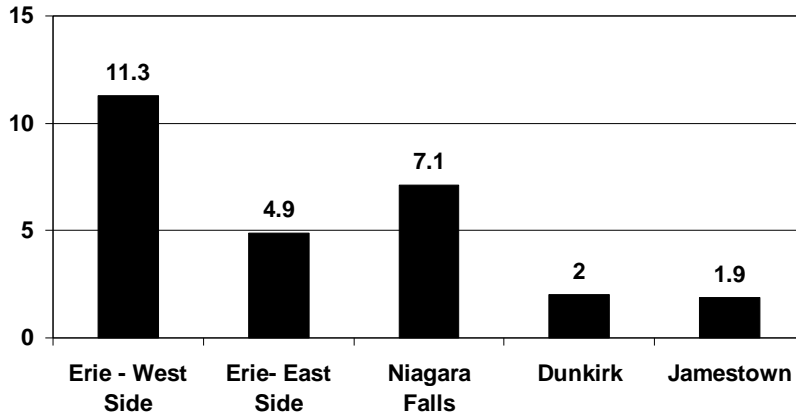
As expected, this picture varies by age group. The 18-44 age groups have the highest rates of individuals without regular access to care. Women are about as likely as men to have no regular source of care.

Figure 3: Percent of WNY Adults with No Regular Source of Care, by WNY County Sample Areas



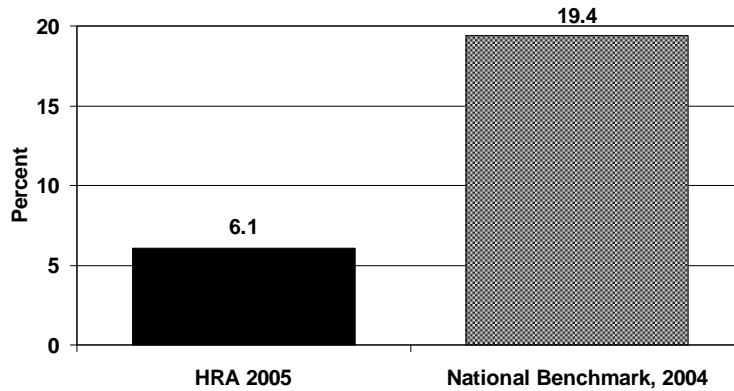
Access to regular source of healthcare varies among the 8 counties of Western New York (see Figure 3). However, within the supplemental sampling areas, which represent the more urban areas of the WNY region, there is considerably more variation than at the county level. The largest of these variations is in Erie County’s Lower West Side of Buffalo sector with 11.3 % reporting no regular source of care (see Figure 4).

Figure 4: Percentage of WNY with No Regular Source of Care, in Supplemental Sampling Area



Health Picture of the Uninsured

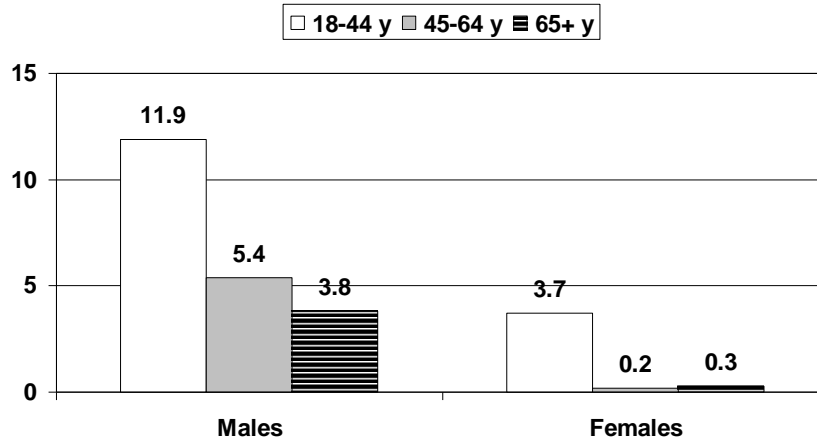
Figure 5: Percent of WNY and the US Adults 18-64 Years of Age Who Reported Having No Insurance



Healthcare insurance helps pay for the cost of receiving continuous care and advocates for the practice of both primary and secondary prevention of disease. In Western New Yorker 6.1% are uninsured. Western New York has a considerably lower prevalence of

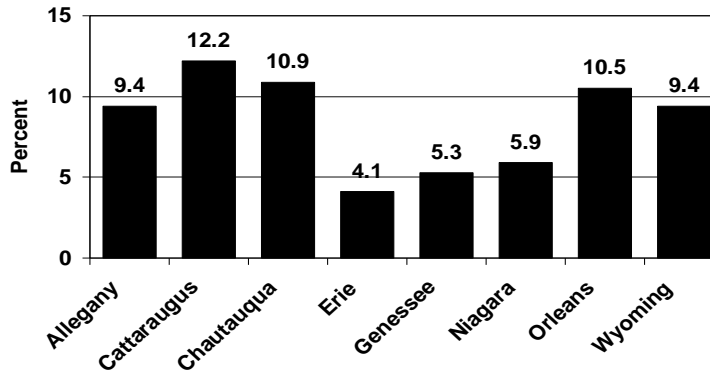
uninsured than the NHIS benchmark of 19.4%. However, the Healthy People 2010 goal of reducing the uninsured population to 0% remains to be accomplished.

Figure 6: Percent of WNY Adults with No Health Insurance According to Sex and by Age Groups



The largest proportions of uninsured are individuals 18 to 44 years of age.

Figure 7: Percent of WNY Adults 18 Years and Over Who are Uninsured, by 8 County Sample Areas



The rates of uninsured vary substantially across counties and within counties (see Figure 7 and 8). While Genessee, Erie and Niagara counties as a whole have lower prevalence of persons with no health insurance than the other counties, sectors within these counties such as the Lower West Side and East Side of Erie county, and the City of Niagara Falls in Niagara county have twice the uninsured prevalence of their respective county (see Figure 8). These results suggest that a high percentage of those uninsured are minorities.

Figure 8: Percentage of WNY Adults 18 Years and Over Who Are Uninsured by Supplemental Sampling Areas

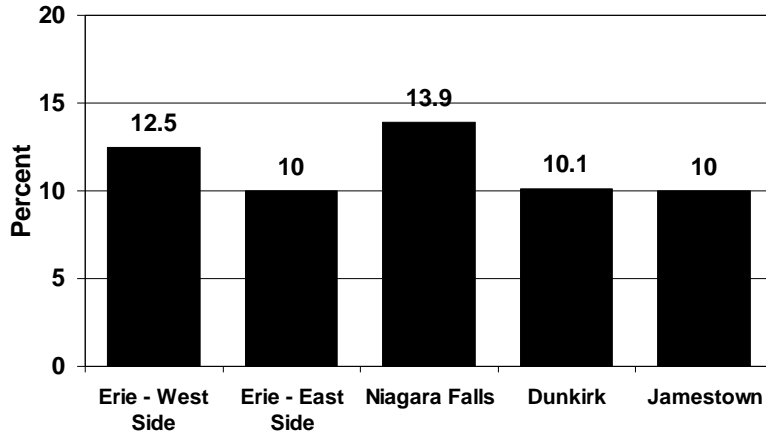


Figure 9: Prevalence of Insurance Status by Age Group in WNY

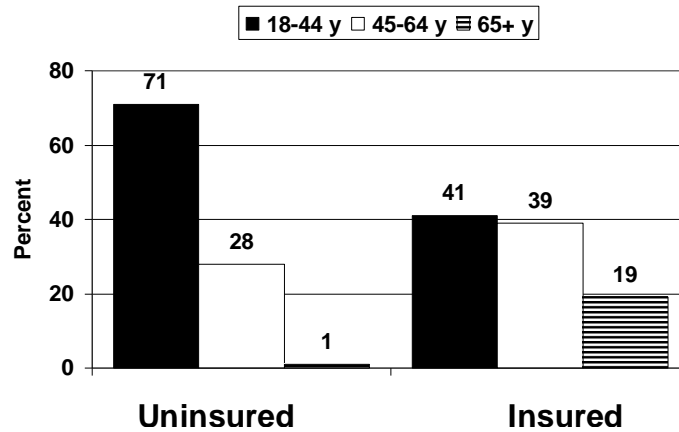


Figure 9 shows that 71% of the uninsured population is adults between the ages of 18-44 years. This varies considerably compared to the 40% of the population that are insured. The insured population is more evenly distributed across age groups (41% for 18-44; 39% for 45-64; and 19% for 65+) than the uninsured population (71%; 28%; and 1%). This may be partially explained by the fact that elderly population, those age 65 and over have access to Medicare insurance.

Figure 10: Employment Status of Uninsured and Insured in WNY Adults 18 Years and Over

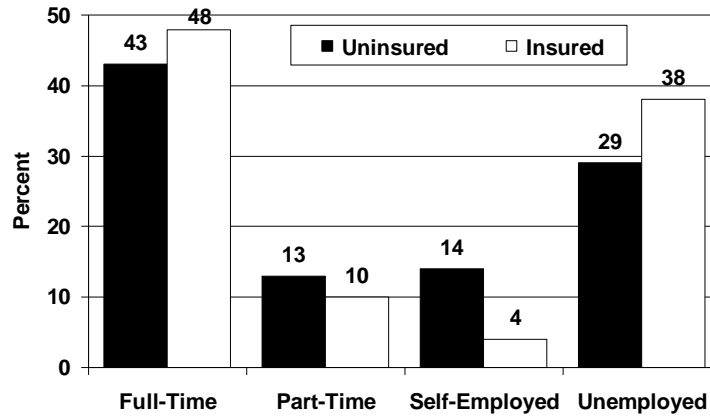


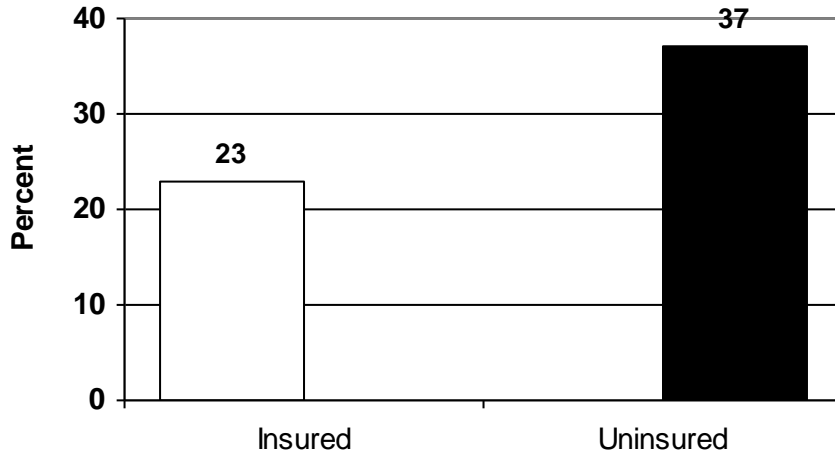
Figure 10 shows that 62% of uninsured adults in WNY are employed (48% FT; 10% PT; 4% self employed). Almost two-thirds of the uninsured adults in WNY are employed, indicating that any solution to the uninsured problem will need to involve the private as well as the public sector.

Health Risk Behavior

There are unusually high levels of risk behaviors among the uninsured. One of these risk behaviors is the levels of smoking. In Western New York, 37% of the uninsured are regular cigarette smokers compared to the 23% of the insured population who smoke.

Three important avoidable health risk behaviors are smoking, being overweight or obese, and physical inactivity (smoking and obesity are discussed below). The reduction of these health risk behaviors is important in the primary and secondary prevention of diseases such as heart disease and other heart conditions, diabetes, hypertension, and cancer.

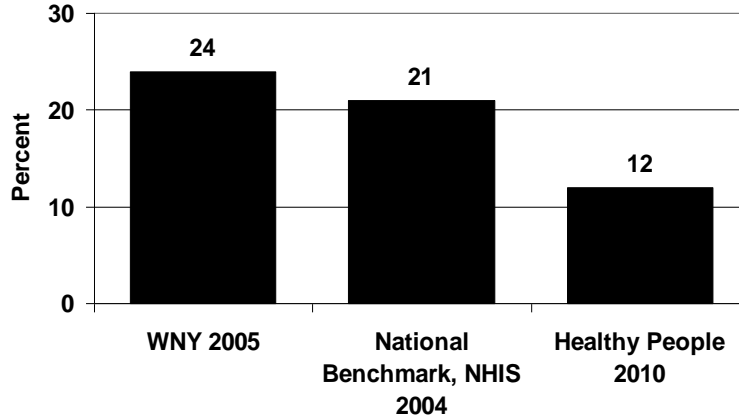
Figure 11: Percentage of WNY Adults 18 years and over Who Smoke, by Insurance Status



Cigarette Smoking

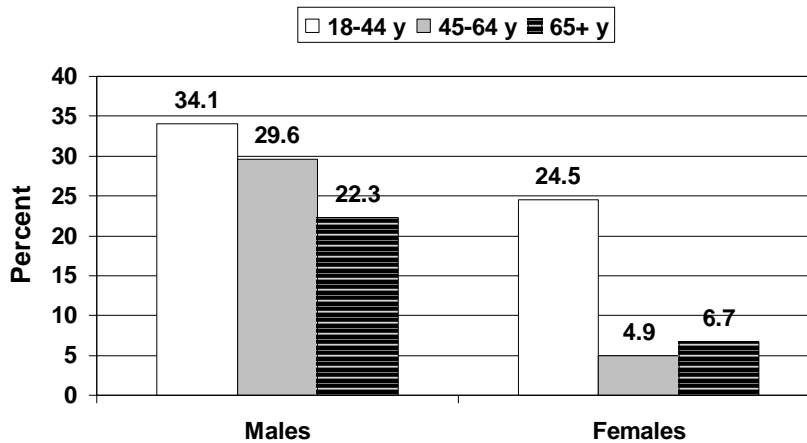
Regular cigarette smoking has been linked to increased levels of heart disease, lung cancer, and other respiratory conditions. Cigarette smoking is the leading cause of preventable morbidity and mortality in the United States. Western New York has a slightly higher prevalence of regular cigarette smokers than the national average (24% and 21%, respectively, see Figure 12). The WNY prevalence rate is double the Healthy People 2010 goal of 12%.

Figure 12: Percentage of WNY and US Adults Who Smoke



The prevalence of regular smokers varies by sex and age. Among the male population in Western New York, individuals 65 years of age or older have the lowest prevalence (22%) and 18 to 44 year olds have the highest prevalence (34%).

Figure 13: Percentage of WNY Adults Who Smoke, by Sex and Age Group



Males and females between the ages of 45 and 64 have very different prevalence rates of regular smoking. Males from all age categories have higher regular smoking rates than females. Females 45 to 64 years of age have the lowest prevalence (4.9%).

The prevalence of regular cigarette smokers in Western New York is similar across geographic areas (see Figures 14 & 15). Smoking prevalence rates are higher in the supplemental areas, as indicated in Figure 15. These data suggest that smoking reduction efforts must target all geographic areas in Western New York.

Figure 14: Prevalence of Adults 18 Years and Over Who are Current Cigarette Smokers in 8 Counties of WNY

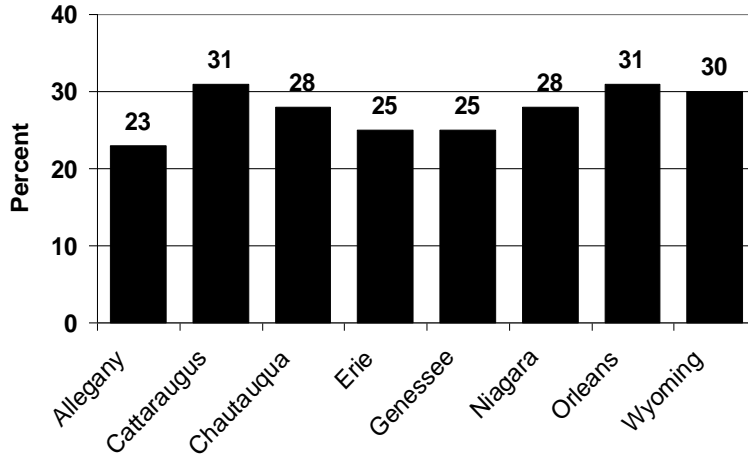
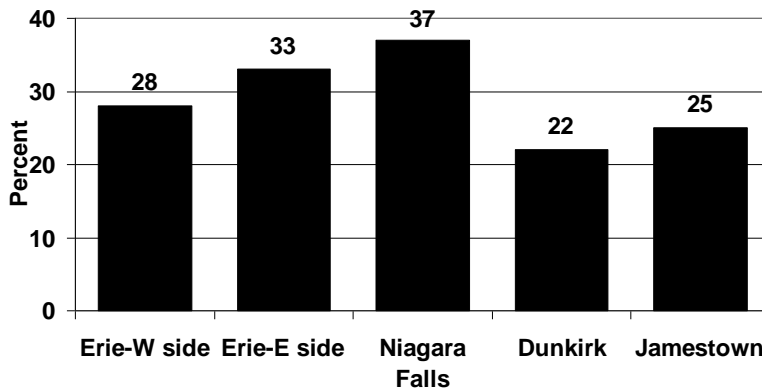
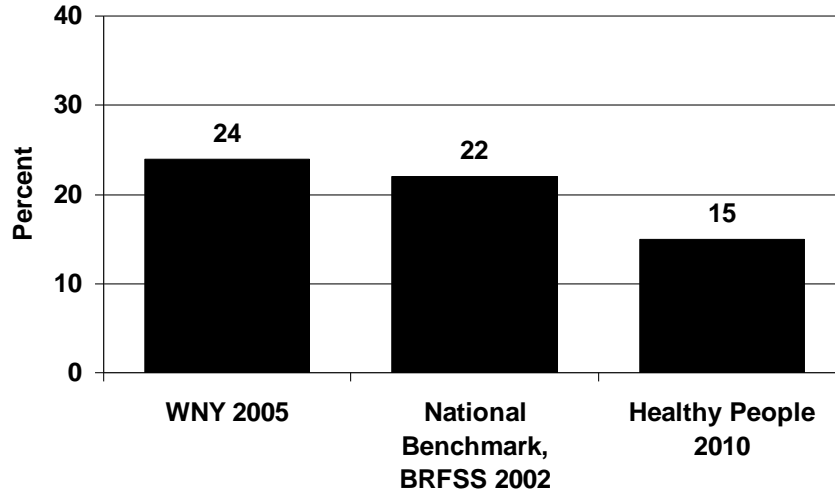


Figure 15: Prevalence of Adults 18 Years and Over Who are Current Cigarette Smokers by Supplemental Sampling Area



Obesity

Figure 16: Prevalence of Obesity (BMI \geq 30) Among Adults 18 Years and Over in WNY and the US Based on Self-reported Height and Weight



The obesity prevalence rates of both Western New York (24%) and the United States as a whole (22%) exceed the health People 2010 goal of 15%. Both prevalence rates exceed the 15% goal of Healthy People 2010.

Figure 17: Percentage of WNY Adults 18 Years and Over Who Are Obese by Sex and Age Groups

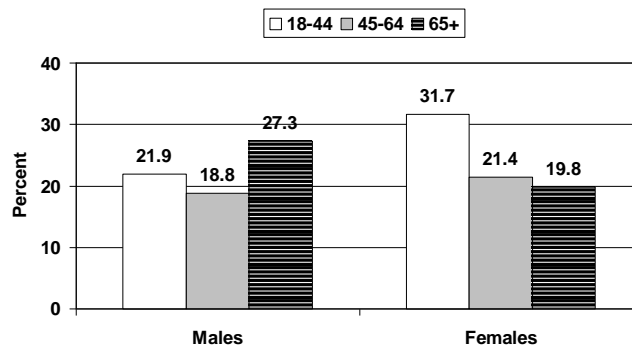
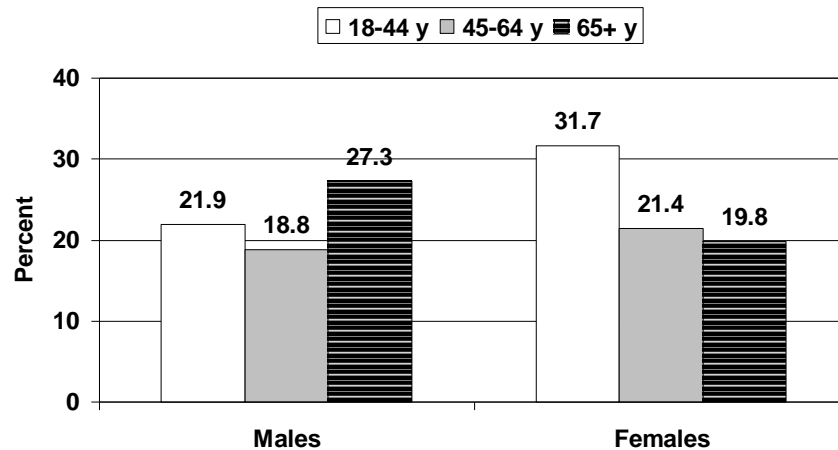


Figure 17a: Prevalence of Obesity (BMI \geq 30) Among Adults 18 Years and Older in WNY by Sex and Age Groups Based on Self Reported Data



As Figure 17 shows, the prevalence of obesity varies according to gender and age groups. Western New York females 18 to 44 have the highest obesity prevalence of the age and sex groups (31.7%). The highest prevalence of obesity found in men is in the 65+ age category (27.3%). These data show that the obesity problem in WNY is shared by all age groups.

The prevalence rates of obesity among the 8 counties are relatively similar throughout, all within the 22%-29% range. In Figure 19, the supplemental areas showed markedly high obesity prevalence, particularly in areas such as Erie’s East Side of Buffalo (44%) and the city of Niagara Falls (31%).

Figure 18: Prevalence of Obesity in Adults 18 Years and Older in 8 County Sample Areas in WNY

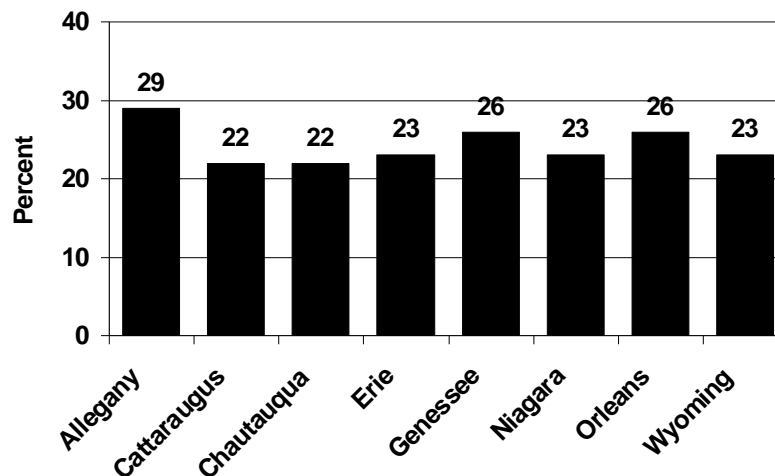
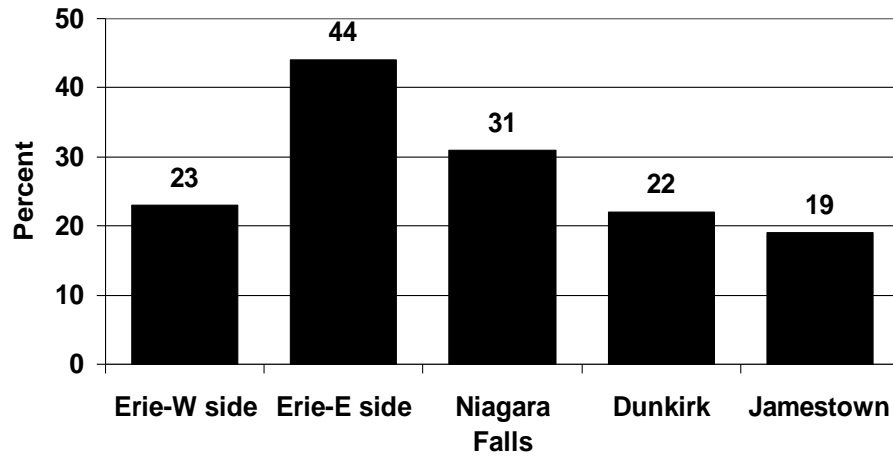


Figure 19: Prevalence of Obesity in Adults 18 Years and Older in WNY by Supplemental Sampling Areas



Disease Prevalence

Primary prevention methods are activities that promote optimum health and provide protection against the onset of illness. Secondary prevention refers to early detection and treatment of disease. Both are important to the health of the community. Appropriate knowledge, good preventive medicine practices, and early diagnosis are the keys to avoidance of disease and good management of illness.

Diabetes

Figure 20: Prevalence of Self-reported Doctor Diagnosed Diabetes in Adults in WNY and the United States

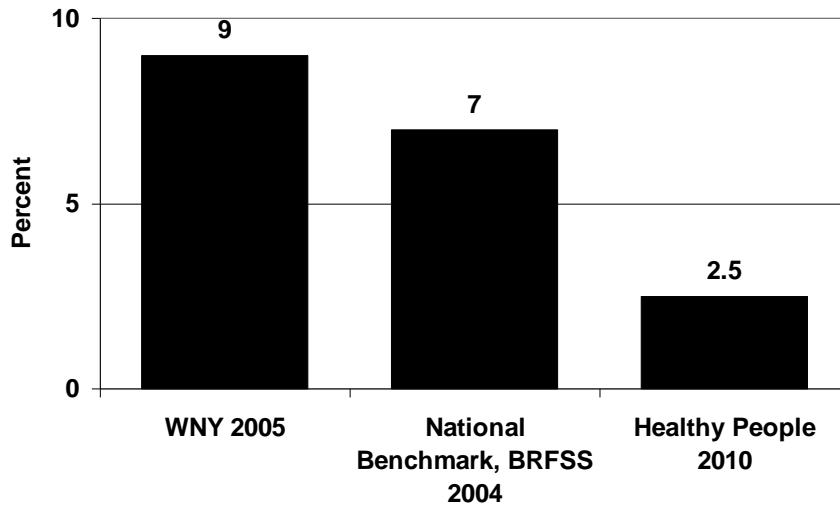
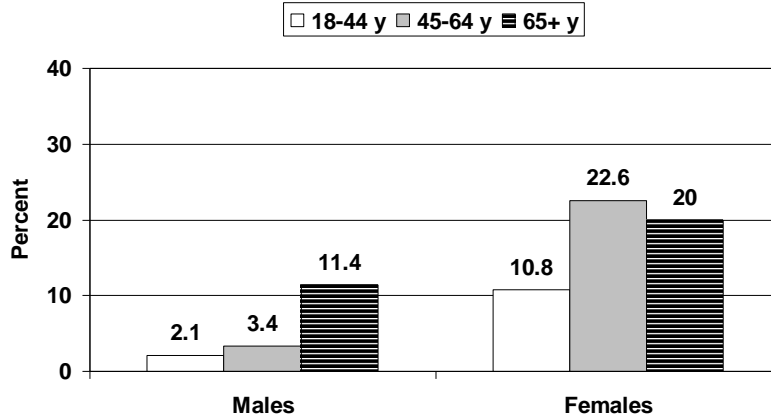


Figure 20 illustrates that the prevalence found in Western New York (9%) is higher than the national benchmark of (7%). Both are considerably higher than the Healthy People 2010 goal of less than 2.5%

Figure 21: Prevalence of Self-reported Doctor Diagnosed Diabetes in WNY Adults, by Sex and Age Groups - unweighted



As Figure 21 shows, females between the ages of 45 to 64 have the highest prevalence rates of diabetes in WNY (22.6%). This rate is substantially above the national benchmark of 6%. WNY males 18-64 have the lowest prevalence rates of diabetes and are near the Healthy People 2010 goal.

As seen in Figure 20, diabetes prevalence rates vary across the eight counties of Western New York. Figure 22 illustrates the similarity among all 8 counties (between 6.8-10.6%). Figure 23 (supplemental sample) shows more variation, and higher prevalence rates than that of the 8 county sample areas. Erie’s East Side of Buffalo has the highest rates of diabetes (17%).

Figure 22: Prevalence of Self-reported Doctor Diagnosed Diabetes in WNY, by 8 County Sample Areas

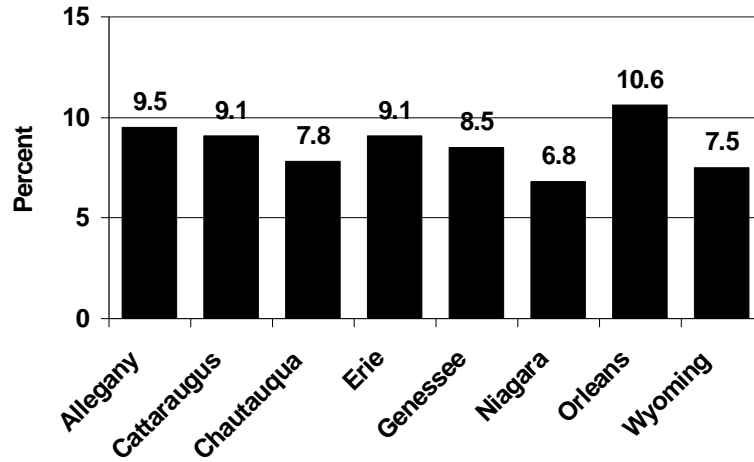
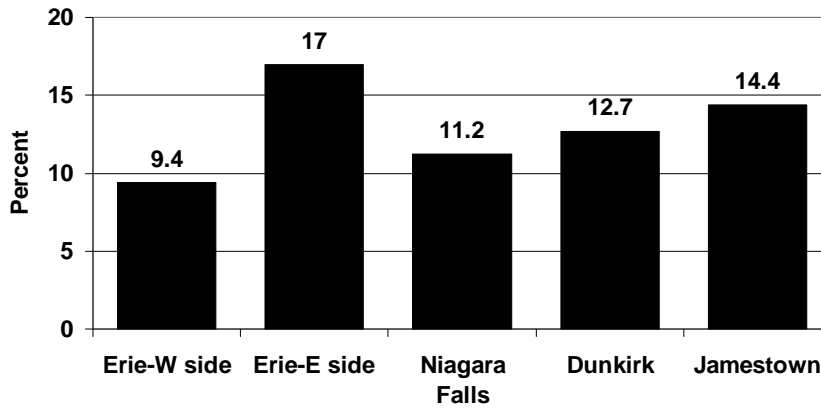
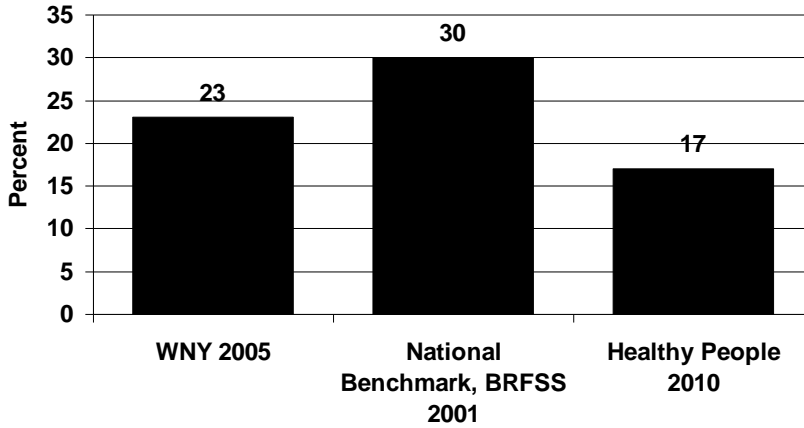


Figure 23: Prevalence of Self-reported Doctor Diagnosed Diabetes in WNY, by Supplemental Sampling Areas



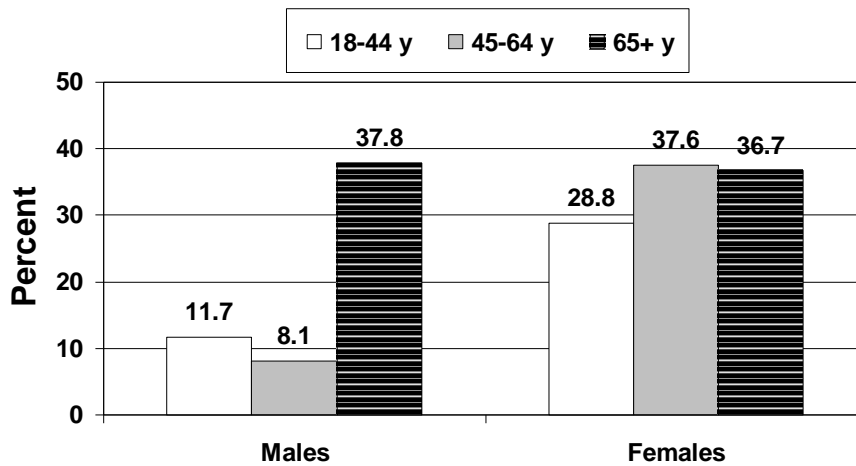
High Cholesterol

Figure 24: Prevalence of Self-reported Awareness of High Blood Cholesterol In WNY and the United States.



The rate of reported high cholesterol in Western New York (23%) is higher than the Healthy People 2010 goal of 17%, but below the National Benchmark of 30%.

Figure 25: Prevalence of Self-reported Awareness of High Blood Cholesterol in WNY Adults, by Sex and Age Groups



As seen in Figure 25, there is significant variation in the prevalence of reported high cholesterol among males in all three age categories. Males over 65 years old report a substantially higher prevalence of high cholesterol (37.8%). Males 45 to 64 have the lowest prevalence rates of reported high cholesterol with 8.1%, and all are all under the

Healthy People 2010 goal. Females are all above the Healthy People 2010 goal but demonstrate smaller variances among age groups. The low self reported high cholesterol in males 18-64 may reflect a lack of awareness on the part of this age group.

There appears to be only modest variation in the prevalence of high cholesterol across geographic areas in Western New York. The eight county sample and most of the supplemental sampling areas experience similar high cholesterol patterns. This suggests that the WNY may require a concentrated effort in order to decrease the current high rates of high cholesterol.

Figure 26: Prevalence of Self Reported Awareness of High Blood Cholesterol in WNY, by 8 County Sample Areas

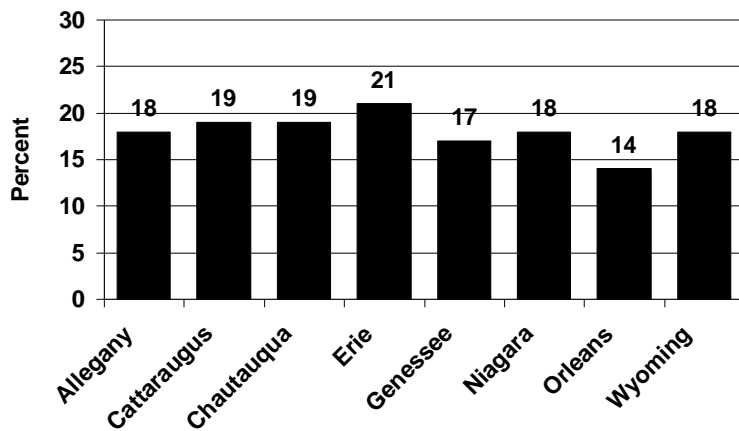
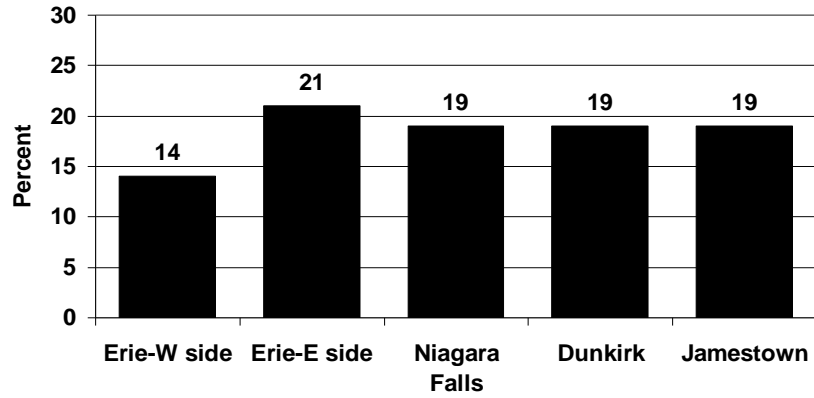


Figure 27: Prevalence Self-reported Awareness of High Blood Cholesterol in WNY, by Supplemental Sampling Areas



Secondary Prevention and Multiple Risk Factors

Heart Condition

A risk factor is a personal behavior or medical condition that increases the likelihood of developing more serious medical conditions. Risk factor examples include smoking, being overweight and physical inactivity. The presence of multiple risk factors substantially increases the risk of developing more serious medical conditions.

Figure 28 shows that 72% adults diagnosed with a heart condition in WNY are also overweight and Figure 29 shows that 15 % of adults diagnosed with a heart condition in WNY are current smokers.

Figure 28: Percentage of WNY Adults Diagnosed with a Heart Condition who are Overweight (BMI \geq 25)

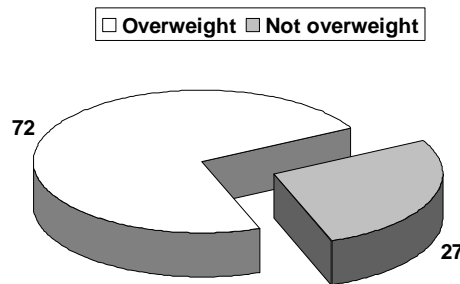


Figure 29: Percentage of WNY Adults Diagnosed With a Heart Condition Who Are Current Smokers

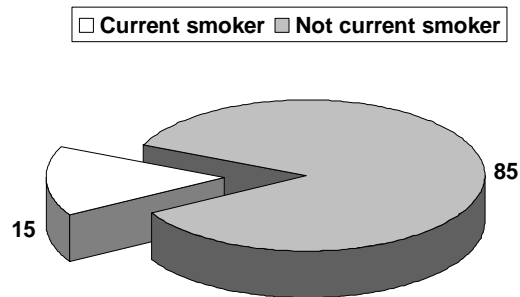
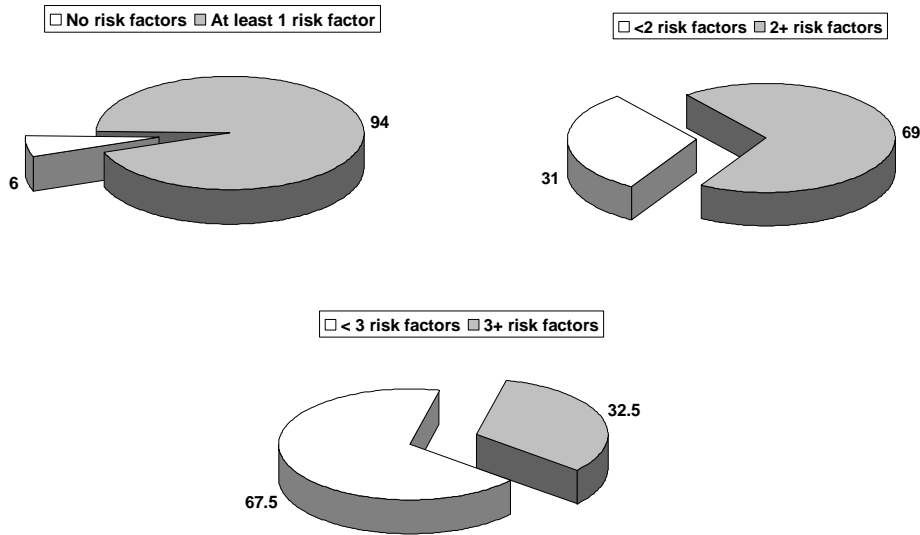


Figure 30 illustrates the number of adults in WNY with a heart condition who have at least one to greater than three risk factors. Of those with a diagnosed heart condition 94% have at least one risk factor, 69% have 2 or greater risk factors and 32.5% have three or more risk factors.

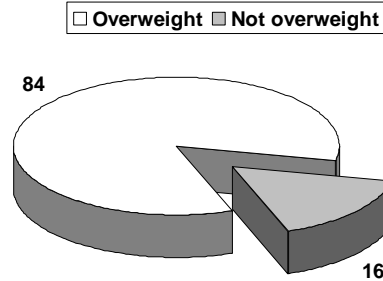
Figure 30: Percentage of WNY Adults Diagnosed With a Heart Condition Who Have at Least One, Two or Three Risk Factors



Diabetes

A similar pattern appears when we look at Diabetes. In Figure 31, note that 84% of those diagnosed with diabetes are also overweight. In Figure 32, of those diagnosed with Diabetes, 10% are also current smokers. Looking at risk behaviors patterns for the WNY diabetic population (Figure 33), 89% have at least one risk factor, 38% have 2 or more risk factors and 13% have 3 or more risk factors.

Figure 31: Percentage of WNY Adults Diagnosed with Diabetes who are Overweight (BMI \geq 25)



Six percent of Western New York adults have been diagnosed with diabetes. Among these individuals 53.6% are obese (not shown)

Ten percent of diagnosed diabetics are regular cigarette smokers. Ninety percent of diabetics have at least one risk factor, 32.5% percent have at least two risk factors, while 11% have three or more risk factors.

Figure 32: Percentage of WNY Adults Diagnosed with Diabetes Who are Current Smokers

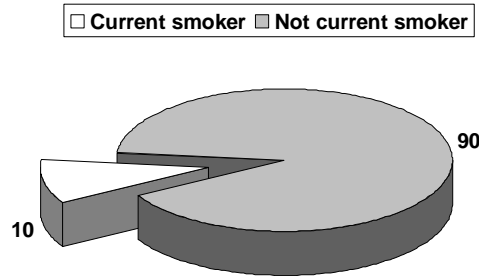
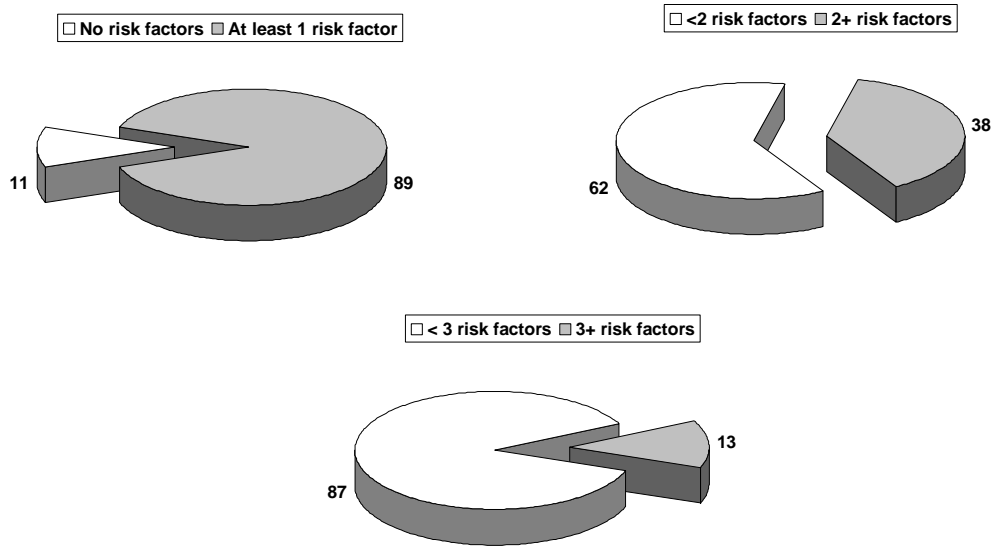


Figure 33: Percentage of WNY Adults Diagnosed with Diabetes Who Have at Least One, Two or Three Risk Factors



Smoking, being overweight, and physical inactivity are all preventable risk factors for a host of chronic diseases. We are challenged with the task of developing primary prevention intervention strategies that change risk behaviors in the population and developing secondary interventions that prevent existing conditions from deteriorating.