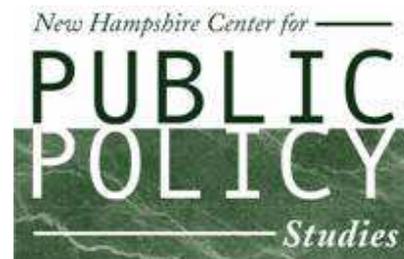


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Health and Equity in New Hampshire: 2013 Report Card

January 2013

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About this paper

This paper is one of a series published by the New Hampshire Center for Public Policy Studies on New Hampshire's healthcare system and demographics. This particular report was funded by the Department of Health and Human Services, Office of Minority Health & Refugee Affairs (OMHRA) with support from the federal State Partnership Grant to Improve Minority Health. The analysis and opinions expressed here, however, are those of the Center alone.

This report aligns with the New Hampshire Health & Equity Partnership's ongoing effort to raise awareness about health disparities based on the 2011 *Plan to Address Health Disparities and Promote Health Equity in New Hampshire* to ensure that everyone in New Hampshire has a fair opportunity to live a long, healthy life. We thank representatives from the technical advisory committee established by OMHRA and its partners for their comments and support of this work.

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Executive Summary

This report presents New Hampshire's first ever Health and Equity Report Card reflecting data to measure key health disparities among the state's racial, ethnic, and linguistic minority populations. Our goal is to provoke questions, illustrate trends and patterns, and generate more interest in collecting and analyzing data to understand health disparities among these groups in order to advance health and equity in New Hampshire.

This Report Card, prepared in partnership with the New Hampshire Department of Health and Human Services, Office of Minority Health & Refugee Affairs, includes existing race, ethnicity and language (REaL) data and compares outcomes for different minority groups to show the degree of equity or inequity within each measure. This is referred to as an "Equity Index." Disparities in health outcomes are linked to the other factors affecting health, each with an explanation as to why that measure matters. We also present a specific examination of health equity among juvenile age groups in New Hampshire, and conclude with suggestions for improving REaL data collection in New Hampshire, and "best practices" from other states.

Understanding how health and equity issues affect racial, ethnic, and linguistic minorities in our state is important for both practical and policy purposes. Policymakers should be concerned about health equity, as research shows that health disparities actually lower overall health care quality and increase overall health care costs. Recent analysis estimates that 30 percent of direct medical costs for Blacks, Hispanics, and Asian Americans are excess costs due to health inequities and that the economy loses an estimated \$309 billion per year due to the direct and indirect costs of such disparities¹.

Our main findings are:

- Examining New Hampshire data by race and ethnicity clearly shows that not everyone in the state has equal opportunities for good health, and that health outcomes vary from one minority group to another.
- Health disparities are often discussed in the context of the provision of medical care, but it is the social determinants of health which are likely more important to the long term well-being of racial, ethnic and linguistic minorities.
- While some of the provisions in the Affordable Care Act were developed specifically to address health equity, state policymakers can address health disparities by raising community awareness and educating the public about health reform and health equity. These efforts can include encouraging cross-agency collaboration to advance policy recommendations, and raising awareness about health equity by framing the issue in terms of quality, cost and justice.
- REaL data collection in New Hampshire should be improved, through common standards for what information is collected, how it is collected, training of data collectors, and how data is utilized.²

¹ "Focus on Health Care Disparities" Kaiser Family Foundation publication #8396, December 2012

² From "Plan to Address Health Disparities and Promote Health Equity in New Hampshire", New Hampshire Health & Equity Partnership, March 2011.

Introduction: What Contributes to Good Health?

New Hampshire consistently leads other states in the country on quality of life and health measures. For example, the 2012 Kids Count report from the Annie E. Casey Foundation³ ranked New Hampshire as the most child friendly state in the country for the ninth time in ten years. The annual state ranking report looks at education, health, family and community support indicators in deriving its assessment of child wellbeing.

New Hampshire was listed as the third healthiest state in the country (behind Vermont and Hawaii), according to the 2012 America's Health Rankings published by the United Health Foundation⁴. The study looked at 24 measures of health, including tobacco and alcohol abuse, exercise, infectious diseases, crime rates, public health funding, access to immunizations, premature birth rates and cancer and heart disease rates.

While New Hampshire ranks very well on the above aggregate measures, not all of New Hampshire's citizens enjoy optimal health status, or have the same opportunity for good health. Examining New Hampshire data by race and ethnicity clearly shows that not everyone in the state has equal opportunities for good health, and that health outcomes vary from one demographic group to another.

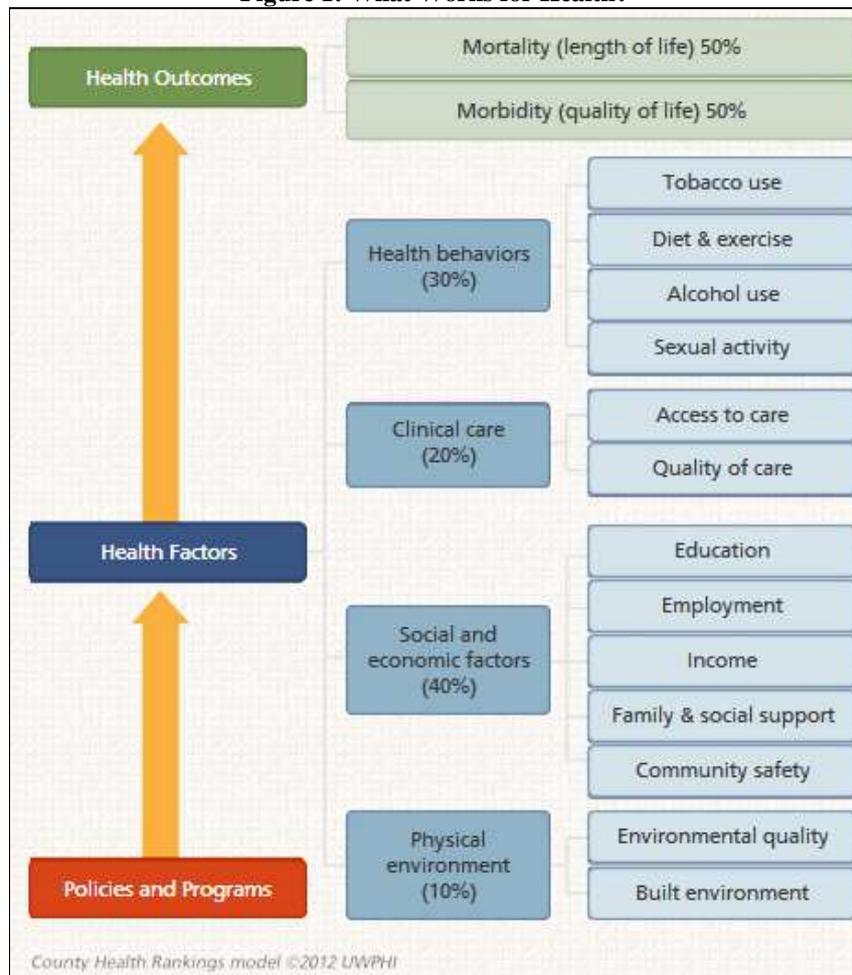
Opportunity for good health goes beyond simply access to quality medical care. According to the Robert Wood Johnson Foundation Commission to Build a Healthier America, the conditions in which we live, learn, work and play have an enormous impact on our health, long before we ever see a doctor⁵. Good health does not begin with a visit to the doctor's office, but instead starts in our homes, schools and communities.

The following chart from the County Health Rankings model illustrates the determinants of good health outcomes. Good health depends primarily on social and economic conditions (which contribute 40 percent), health behaviors (which contribute approximately 30 percent), but also on clinical care (approximately 20 percent), and aspects of physical environment factors (10 percent). Therefore, according to the authors of the report, we must go beyond measuring outcomes alone to a greater understanding of other factors that affect health. For example, health insurance and quality health care are important to our health, but we also know that other factors, such as education and income, affect health in a profound way.

³ Annie E. Casey Foundation Kids Count Data Book, available at <http://datacenter.kidscount.org/>

⁴ United Health Foundation America's Health Rankings, available at <https://www.unitedhealthfoundation.org/Grants/GrantsRankings.aspx>

⁵ <http://www.commissiononhealth.org/Report.aspx?Publication=26244>

Figure 1: What Works for Health?⁶

Understanding health equity therefore means gaining insight into how the above measures may differ for minority populations in New Hampshire.

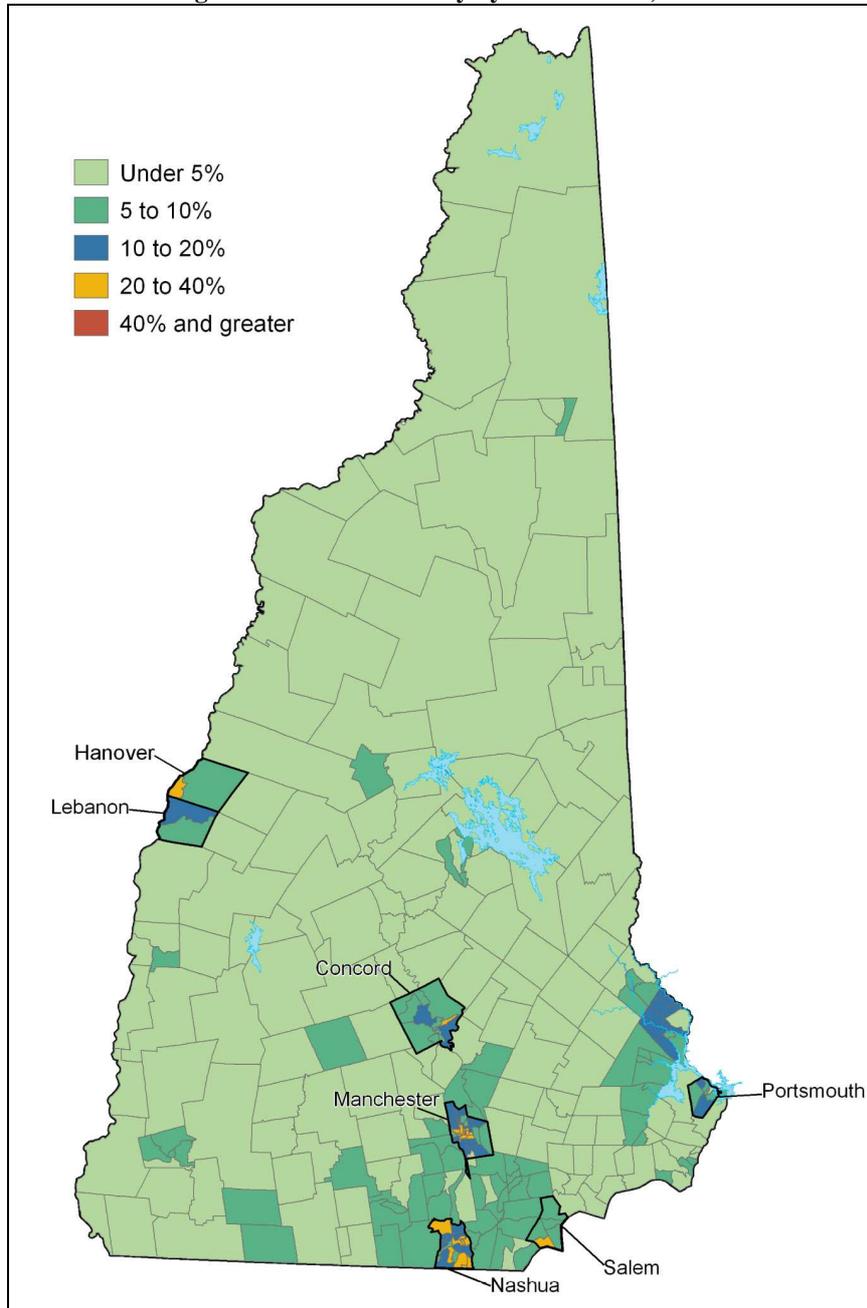
Section 1: Overview of Racial, Ethnic and Linguistic Minority Populations in New Hampshire

Demographer Kenneth Johnson of the University of New Hampshire's Carsey Institute noted in a recent report that New Hampshire is becoming more racially and ethnically diverse, although this diversity remains "spatially concentrated" in the state's larger population centers (See Figure 2). The higher concentration of racial and ethnic minorities in New Hampshire's urban areas may present unique challenges for state policy regarding health and equity. As Johnson noted:

⁶ County Health Rankings & Roadmaps, published by the University of Wisconsin Population Health Institute and the Robert Wood Johnson Foundation, <http://www.countyhealthrankings.org/what-works-for-health>

“Developing programs and policies to address such economic disparities and to meet the needs of an increasingly diverse population is particularly challenging when these pockets of economic and racial diversity exist in a state that is generally affluent, well-educated, and non-Hispanic white.”⁷

Figure 2: Percent minority by Census tract, 2010



Source: Carsey Institute, UNH

⁷ “New Hampshire Demographic Trends in the Twenty-First Century”, Kenneth M. Johnson, The Carsey Institute, University of New Hampshire, May 2012. Available at www.carseyinstitute.unh.edu

The following table shows summary data for New Hampshire, and the cities of Manchester and Nashua, New Hampshire's first and second largest cities. Minority populations in New Hampshire are more concentrated in the cities.

Table 1: Summary for New Hampshire's 2 Largest Cities and the State

New Hampshire REaL Data (Racial, Ethnic, Language)								
Source: American Community Survey 2006-2010								
	Manchester city	Pct of Total	Nashua city	Pct of Total	Rest of NH	Pct of Total	New Hampshire	Pct of Total
TOTAL POPULATION:	109,791	100.0%	87,042	100.0%	1,117,106	100.0%	1,313,939	100.0%
Total:% White Non-Hispanic	96,583	88.0%	74,571	85.7%	1,070,385	95.8%	1,241,539	94.5%
Total:% Black or African American alone	4,324	3.9%	1,913	2.2%	7,949	0.7%	14,186	1.1%
Total:% American Indian and Alaska Native alone	148	0.1%	168	0.2%	2,519	0.2%	2,835	0.2%
Total:% Asian alone	3,759	3.4%	6,133	7.0%	17,862	1.6%	27,754	2.1%
Total:% Native Hawaiian and Other Pacific Islander alone	22	0.0%	27	0.0%	238	0.0%	287	0.0%
Total:% Some other race alone	2,771	2.5%	2,714	3.1%	4,512	0.4%	9,997	0.8%
Total:% Two or more races:	2,184	2.0%	1,516	1.7%	13,641	1.2%	17,341	1.3%
Total:% Two or more races:% Two races including Some other race	301	0.3%	227	0.3%	1,457	0.1%	1,985	0.2%
Total:% Two or more races:% Two races excluding Some other race, and three or more races	1,883	1.7%	1,289	1.5%	12,184	1.1%	15,356	1.2%
	Manchester city	Pct of Total	Nashua city	Pct of Total	Rest of NH	Pct of Total	New Hampshire	Pct of Total
TOTAL POPULATION:	109,791	100.0%	87,042	100.0%	1,117,106	100.0%	1,313,939	100.0%
Total:% Not Hispanic or Latino	101,761	92.7%	79,791	91.7%	1,097,049	98.2%	1,278,601	97.3%
Total:% Hispanic or Latino:	8,030	7.3%	7,251	8.3%	20,057	1.8%	35,338	2.7%

Approximately 1 percent of the New Hampshire population is Black or African American, but this minority group comprises almost 4 percent of the population in Manchester. Hispanics account for 2.7 percent of the population statewide, but comprise 7 percent of Manchester's residents, and 8 percent of Nashua's residents.⁸

While minorities represented only 4.9 percent of New Hampshire's population in 2000, they produced 50 percent of the population gain between 2000 and 2010. Even though the White non-Hispanic population accounts for about 95 percent of the population in the state, minorities are becoming an increasing share of the population throughout the state.⁹

Racial and ethnic diversity is greater among the state's youth populations, with 12.2 percent of New Hampshire's under-18 population belonging to a racial minority in 2010. This is because the minority population in New Hampshire, on whole, is much younger than the non-minority population in the state, as shown in the following population pyramids for the year 2010.

⁸ The "Greater Manchester Community Needs Assessment 2009", with more information on that city, is available at:

<http://www.manchesternh.gov/website/Departments/Health/DataandReports/tabid/700/Default.aspx>

The "City of Nashua Community Health Assessment 2011", with more information on that city, is available at:

<http://www.gonashua.com/CityGovernment/Departments/PublicHealthCommunityServices/2011CommunityHealthAssessment/tabid/1034/Default.aspx>

⁹ IBID

Figure 3: White Alone, Not Hispanic Population by Gender and Age

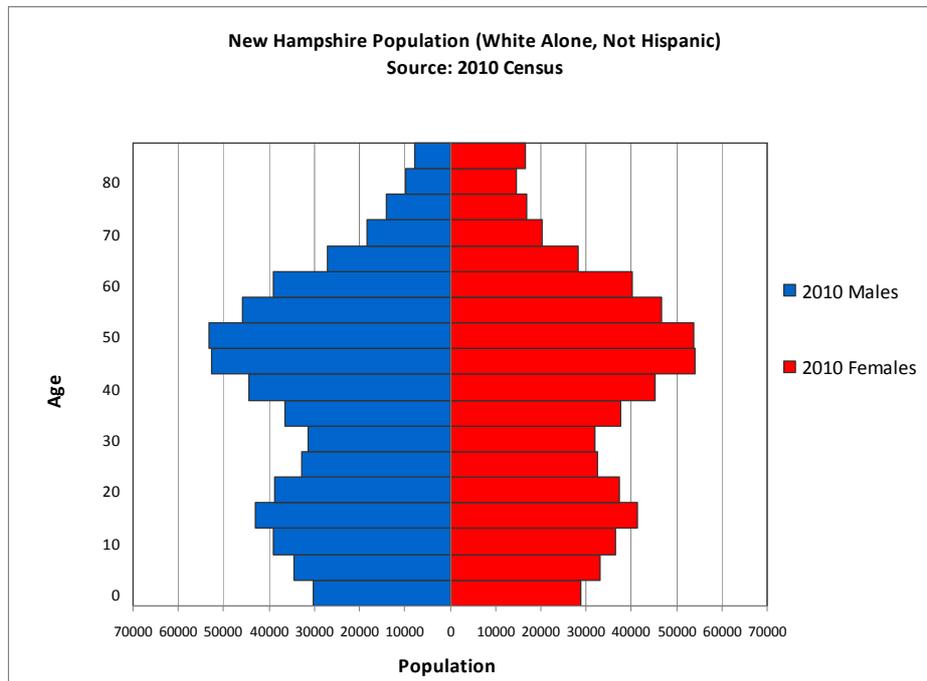
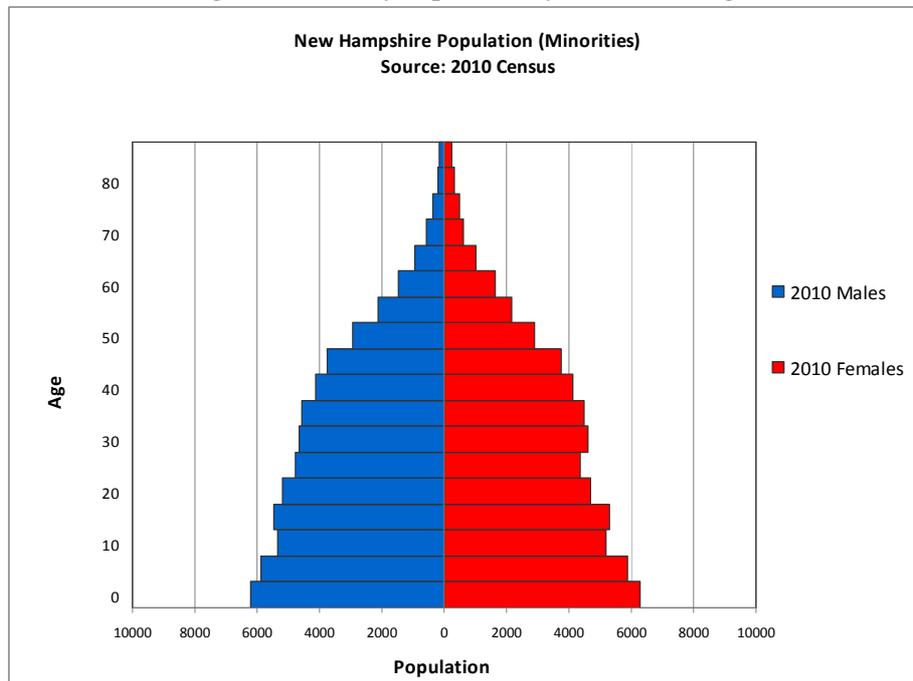
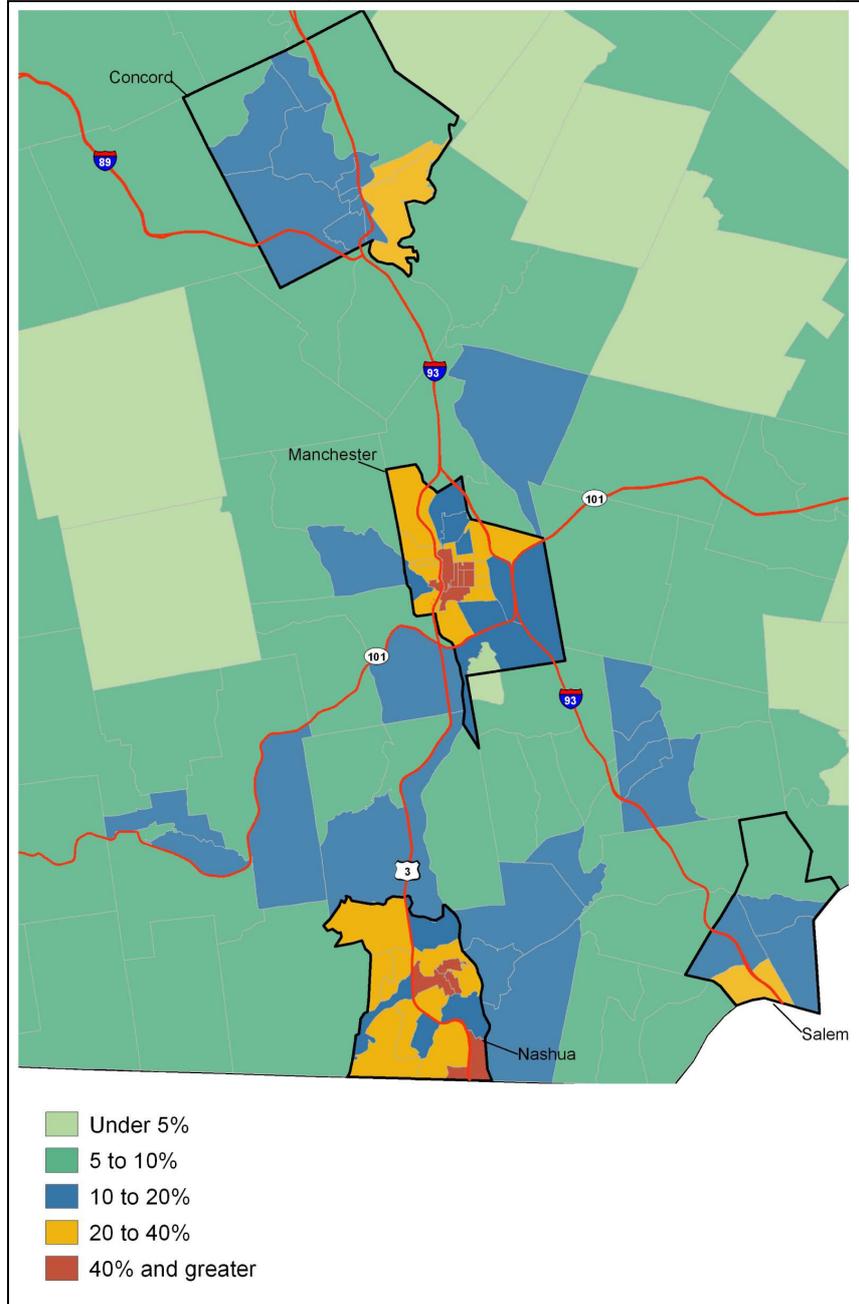


Figure 4: Minority Population by Gender and Age



And this diverse youth population is particularly concentrated in the state’s largest cities, as Johnson has noted (See Figure 5.)

Figure 5: Percent minority under age 18 by Census tract in Merrimack Valley region, 2010



Source: Carsey Institute, University of New Hampshire

The uneven distribution of the state’s minority populations – both in terms of age and geography – could raise policy challenges for those seeking to engage the rest of the state on questions of health equity.

Access to health care and other services can be compromised by the barrier of language. The following table shows the portion of the population over the age of 14 in households

that are linguistically isolated in the cities of Manchester and Nashua, the remainder of the state, and for the total New Hampshire.

Table 2: Linguistically Isolated Households

New Hampshire REaL Data (Racial, Ethnic, Language)								
Source: American Community Survey 2006-2010								
Linguistically Isolated Households								
	Manchester city	Pct of Total	Nashua city	Pct of Total	Rest of NH	Pct of Total	New Hampshire	Pct of Total
HOUSEHOLDS: Total:	45,370		35,114		478,690		513,804	
Total:% English only	35,473	78.2%	26,946	76.7%	429,596	89.7%	456,542	88.9%
Total:% Spanish:	2,548	5.6%	2,630	7.5%	11,106	2.3%	13,736	2.7%
Total:% Spanish:% No one 14 and over speaks English only or speaks English "very well"	699	1.5%	784	2.2%	1,330	0.3%	2,114	0.4%
Total:% Other Indo-European languages:	5,643	12.4%	4,112	11.7%	30,594	6.4%	34,706	6.8%
Total:% Other Indo-European languages:% No one 14 and over speaks English only or speaks English "very well"	1,101	2.4%	498	1.4%	3,015	0.6%	3,513	0.7%
Total:% Asian and Pacific Island languages:	931	2.1%	1,211	3.4%	5,292	1.1%	6,503	1.3%
Total:% Asian and Pacific Island languages:% No one 14 and over speaks English only or speaks English "very well"	378	0.8%	243	0.7%	1,295	0.3%	1,538	0.3%
Total:% Other languages:	775	1.7%	215	0.6%	2,102	0.4%	2,317	0.5%
Total:% Other languages:% No one 14 and over speaks English only or speaks English "very well"	208	0.5%	77	0.2%	257	0.1%	334	0.1%
Households that are linguistically isolated (no one over 14 and over speaks English "very well")	2,386	5.3%	1,602	4.6%	5,897	1.2%	7,499	1.5%

Approximately 1 percent of the households in New Hampshire are linguistically isolated, as defined by no one over the age of 14 speaking English only, or "very well". However about 5 percent of the households in Manchester and Nashua are linguistically isolated.

Section 2: Racial and Ethnic Health Disparities in New Hampshire

One of the leaders in examining the public policy issues surrounding health care, including minority health, is the Henry J. Kaiser Family Foundation, located in Washington, D.C. According to their research, health outcomes and access to health care differ among racial and ethnic populations in many states, including New Hampshire.

In June 2009, the Kaiser Family Foundation published a landmark study examining health, health care access and other social determinants of health¹⁰ across all of the states. The report, "Putting Women's Health Care Disparities on the Map: Examining Racial and Ethnic Disparities at the State Level," documented the persistence of disparities on 25 indicators between white women and women of color, including rates of diseases such as diabetes, heart disease, AIDS and cancer, as well as insurance coverage and health screenings.¹¹

¹⁰ "The social determinants of health are the conditions in which people are born, grow, live, work and age, including the health system. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities - the unfair and avoidable differences in health status seen within and between countries.", World Health Organization, http://www.who.int/social_determinants/en/

¹¹ Data are derived from the Kaiser Family Foundation report, Putting Women's Health Care Disparities on the Map, available at: <http://www.kff.org/womensdisparities/>.

The following table shows the study results for New Hampshire. The table uses ratios to compare racial and ethnic groups in the state. For example, the cardio vascular disease rate shown for all minority women (5.7) was divided by the same rate for non-Hispanic white women (1.8) to yield a disparity score of 3.2. The score means that all minority women are three times more likely to have cardiovascular disease than non-Hispanic white women.

According the Kaiser Family Foundation report, disparities between white women and minority women in New Hampshire are particularly significant for cardiovascular disease, new AIDS cases and certain types of preventive care (no pap test in past three years).

Table 3: New Hampshire Minority Health Disparities for Women¹²

State Health Facts Analysis of Minority Health Disparities				
Women's Health Disparities	Disparity Score	All Women	Non Hispanic White Women	All Minority Women
Fair or Poor Health Status	1.2	9.4%	9.4%	11.2%
Unhealthy Days	1.2	7.2	7.2	8.6
Limited Activity Days	1.3	3.2	3.2	4.1
Diabetes	1.9	3.0%	2.9%	5.4%
Cardiovascular Disease	3.2	2.0%	1.8%	5.7%
Obesity	1.0	20.4%	20.4%	20.5%
Smoking	0.7	20.7%	21.0%	15.2%
Cancer Mortality	0.6	165.9	166.5	87
New AIDS Cases	18.6	2.0	1.1	21.2
Low-Birthweight Infants	1.2	6.7%	6.6%	7.7%
No Health Insurance Coverage	1.6	11.8%	11.4%	18.8%
No Personal Doctor	1.9	8.4%	8.0%	15.2%
No Routine Checkup in Past Two Years	1.1	11.4%	11.3%	12.1%
No Dental Checkup in Past Two Years	1.4	21.2%	20.8%	28.4%
No Doctor Visit in Past Year Due to Cost	1.5	13.7%	13.3%	19.6%
No Mammogram in Past Two Years	1.9	19.0%	18.4%	35.4%
No Pap Test in Past Three Years	2.3	10.2%	9.6%	21.5%
Late Initiation of or No Prenatal Care	1.8	9.2%	8.4%	15.3%
Poverty	2.0	9.2%	8.7%	17.2%
Median Household Income	1.4	\$66,747	\$68,100	\$48,805
No High School Diploma	1.8	5.8%	5.6%	10.0%
Female-Headed Households with Children	1.3	18.7%	18.4%	23.1%
1.0 or Less - No Disparity or Relative Advantage				
1.0 to 1.4 - Small Disparity				
1.5 to 2.1 Disparity Requires Attention				
Greater than 2.1 - More Attention is Needed.				

Disparity score greater than 1.00 indicates that minority women are doing worse than White women. Disparity score less than 1.00 indicates that minority women are doing better than White women. Disparity score equal to 1.00 indicates that minority and White women are doing the same.

¹² All Minority women includes Black, Hispanic, Asian American and Native Hawaiian/Pacific Islander, American Indian/Alaska Native women, and women of two or more races.

In September 2012, the Kaiser Family Foundation issued a follow up report examining racial and ethnic disparities among men at the state level¹³. As shown on the following table, in New Hampshire disparities between white men and men of color were particularly high for New AIDS cases, access to health insurance and poverty.

Table 4: New Hampshire Minority Health Disparities for Men¹⁴

Men's Health Disparities	Disparity			
	Score	All Men	White	All Minority
Fair or Poor Health Status	1.3	7.9%	7.8%	10.0%
Unhealthy Days	1.0	5.2	5.2	5.3
Limited Activity Days	1.6	3	2.9	4.6
Diabetes	1.7	3.2%	3.1%	5.4%
Cardiovascular Disease	1.3	3.1%	3.1%	4.1%
Obesity	0.9	23.2%	23.3%	21.0%
Smoking	1.1	24.2%	24.0%	25.9%
Binge Drinking	0.7	25.6%	26.1%	18.6%
New AIDS Cases	9.4	5.9	4.2	39.4
No Health Insurance Coverage	2.3	16.8%	15.4%	35.8%
No Personal Doctor	1.3	17.6%	17.3%	22.0%
No Routine Checkup in Past Two Years	0.8	21.7%	22.1%	16.5%
No Dental Checkup in Past Two Years	1.4	25.4%	24.7%	35.6%
No Colorectal Screening in Past Two Years	1.1	34.0%	33.9%	35.5%
No Doctor Visit in Past Year Due to Cost	1.9	9.1%	8.6%	16.3%
Poverty	2.3	8.5%	7.9%	18.0%
Median Household Income	1.7	\$65,900	\$68,100	\$40,600
No High School Diploma	1.7	9.4%	8.9%	15.3%
Incarceration Rate	1.0	375.7	374.6	390.6
Unemployment	1.0	4.8%	4.8%	4.7%

1.0 or Less - No Disparity or Relative Advantage
1.0 to 1.4 - Small Disparity
1.5 to 2.1 Disparity Requires Attention
Greater than 2.1 - More Attention is Needed.

A disparity score greater than 1.00 indicates that minority men are doing worse than white men. A disparity score less than 1.00 indicates that minority men are doing better than white men. A disparity score equal to 1.00 indicates that minority and white men are doing the same.

Public Health Measures

Public health data is collected and reported by the New Hampshire Department of Health and Human Services, Division of Public Health Services. The following table shows several public health indicators collected from the Behavioral Risk Factor Surveillance System, a telephone survey of New Hampshire adults 18 years of age and older. The survey shows that minority populations in New Hampshire are much more likely than the White non-Hispanic population to lack health insurance coverage, to not have a personal

¹³ "Putting Men's Health Care Disparities on the Map: Examining Racial and Ethnic Disparities at the State Level", http://www.kff.org/minorityhealth/minority_racial_disparities_men.cfm

¹⁴ All Minority men includes black, Hispanic, Asian and Native Hawaiian or other Pacific Islander (NHPI), American Indian or Alaska Native, and men of two or more races.

health care provider or not be able to see a doctor because of cost. Minorities in New Hampshire are also more likely to have bad mental health days¹⁵.

Table 5: Selected Behavioral Health Indicators

Health and Health Care Selected Health Indicators New Hampshire BRFSS 2011 Behavioral Risk Factor Surveillance System (BRFSS)			
Indicator	Subpopulation	Percent	Ratio to White Alone
Current smoking	White non-Hispanic	19.0	
	Other non-white, non-Hispanic	30.4	1.6
	Hispanic	25.5	1.3
No personal health care provider	White non-Hispanic	12.2	
	Other non-white, non-Hispanic	23.8	2.0
	Hispanic	27.3	2.2
Could not see doctor due to cost	White non-Hispanic	14.4	
	Other non-white, non-Hispanic	23.8	1.7
	Hispanic	29.6	2.1
No health insurance coverage	White non-Hispanic	12.9	
	Other non-white, non-Hispanic	17.9	1.4
	Hispanic	28.4	2.2
No health insurance coverage, under age 65	White non-Hispanic	15.5	
	Other non-white, non-Hispanic	20.0	1.3
	Hispanic	30.3	2.0
Binge drinking	White non-Hispanic	18.9	
	Other non-white, non-Hispanic	13.7	0.7
	Hispanic	25.2	1.3
14 or more bad mental health days in past 30	White non-Hispanic	11.4	
	Other non-white, non-Hispanic	19.4	1.7
	Hispanic	36.8	3.2
1.0 or Less - No Disparity or Relative Advantage 1.0 to 1.4 - Small Disparity 1.5 to 2.1 Disparity Requires Attention Greater than 2.1 - More Attention is Needed.			

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

¹⁵ Poor or Bad Mental Health Days is the average number of days in the previous 30 days that a person could not perform work or household tasks due to mental illness. The self-reported data relies on the accuracy of each respondent's estimate of the number of limited activity days in the previous 30 days.

Communicable Disease

The New Hampshire STD/HIV Surveillance Program captures information on infectious diseases in New Hampshire. In the following table, we reveal case rates for chlamydia, a disease caused by the bacteria *Chlamydia trachomatis*. It is most commonly sexually transmitted. As shown on the table, Hispanic residents of New Hampshire are 2.5 more likely than whites to carry the sexually transmitted disease chlamydia. Black or African American residents have case rates 3.4 times the rate found in the white non-Hispanic population.

Table 6: Communicable Disease Indicators

Health and Health Care STD/HIV Summary Report New Hampshire Infectious Disease Surveillance Section Chlamydia, Cases and Rates, 2006 to 2010 Average			
State	<u>Number of Cases</u>	<u>Case Rate per 100,000 Persons</u>	<u>Ratio to White Alone</u>
New Hampshire			
Total	2,150	163.0	
White non-Hispanic	1,637	130.1	1.0
Black or African American	78	442.9	3.4
Asian/Pacific Islander	26	94.9	0.7
Am Ind/Alaska Native	9	212.7	1.6
Hispanic	115	331.0	2.5
1.0 or Less - No Disparity or Relative Advantage			
1.0 to 1.4 - Small Disparity			
1.5 to 2.1 Disparity Requires Attention			
Greater than 2.1 - More Attention is Needed.			

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Health Insurance Coverage

The U.S. Census Bureau created the Small Area Health Insurance Estimates (SAHIE) program to develop model-based estimates of health insurance coverage for counties and states. The SAHIE results for the latest year show that Hispanics in New Hampshire are twice as likely to lack health insurance coverage, compared to the white non-Hispanic population.

Table 7: Health Insurance Coverage

Health Insurance Coverage US Census Bureau Small Area Health Insurance Estimates, 2010			
State	Number Uninsured	Percent Uninsured in Demographic Group for All Income Levels	Ratio to White Alone
New Hampshire			
All Races, All Income Levels, Under 65 years Old	143,475	13.0	
White Alone, Not Hispanic	124,337	12.3	1.0
Black Alone, Not Hispanic	2,142	17.6	1.4
Hispanic (any race)	9,568	28.0	2.3
1.0 or Less - No Disparity or Relative Advantage			
1.0 to 1.4 - Small Disparity			
1.5 to 2.1 Disparity Requires Attention			
Greater than 2.1 - More Attention is Needed.			

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

We have shown in this section that health care outcomes and access to health care are not equal among racial and ethnic populations in New Hampshire. We have demonstrated the “what”, but not the “why”. For the underlying causes of health care disparities, we must turn to the social determinants of health.

Section 3: Social Determinants of Health

While disparities are often discussed in the context of the provision of, or outcomes associated with, medical care, it is the social determinants of health which are likely more important to the long term well-being of all our communities. Structural factors which can have an important impact on health and well-being include “physical, social, cultural, organizational, community, economic, legal, or policy aspects of the environment” that impede or facilitate efforts to avoid disease transmission or to live healthy lives. Social factors include the economic and social conditions that influence the health of people and communities as a whole, and include the conditions for early childhood development, education, employment, income and job security, food security, health services, and access to services, housing, social exclusion, and stigma¹⁶. The relationship between these social factors and health outcomes is explained further in this report below each category in the section “Why does it matter?”

¹⁶ Dean HD, Fenton KA. Addressing social determinants of health in the prevention and control of HIV/AIDS, viral hepatitis, sexually transmitted infections, and tuberculosis. Public Health Rep 2010;125 Suppl 4:1-5.

Summary Health and Equity Index

In Table 8 we present a summary measure, based on ten independent indicators, of the social determinants of health for minority populations in New Hampshire. The summary includes an average equity index for each measure, weighted by the population represented in each racial and ethnic grouping¹⁷.

Table 8: Health and Equity Summary Index

Area	Health and Equity Summary Index										
Indicator	Average Over 10 Indicators										
Source:	American Community Survey, 2006 to 2010										
	High School Degree	Single Mother Household	Home Ownership	Over Crowding	Food Stamps	Family Income	Poverty	Unemployment	Job Quality	Business Ownership	Average Index
White non-Hispanic	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Black or African American	1.5	2.5	2.2	6.1	3.3	1.5	3.3	1.6	1.6	8.5	3.2
American Indian	2.4	0.0	1.9	0.0	2.9	1.6	2.2	0.0	1.3	0.0	1.2
Asian	1.1	0.7	1.6	4.3	0.5	0.9	0.0	0.0	0.8	0.8	1.1
Two or More Races	1.3	1.7	1.5	3.5	2.4	1.2	1.7	1.7	1.0	0.0	1.6
Hispanic or Latino	2.3	2.2	2.1	6.7	2.9	1.4	2.2	1.9	1.5	4.2	2.7
Summary Index (weighted)	1.7	1.6	1.9	5.2	2.2	1.3	1.6	1.2	1.2	3.0	2.1
<p>1.0 or Less - No Disparity or Relative Advantage</p> <p>1.0 to 1.4 - Small Disparity</p> <p>1.5 to 2.1 Disparity Requires Attention</p> <p>Greater than 2.1 - More Attention is Needed.</p>											

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

¹⁷ The average index in the last column of Table 8 is a simple average across all ten indicators for each racial or ethnic group.

In the Table 8 above, each cell shows the socio-economic indicator for that racial or ethnic group expressed in relation to that same indicator for the White non-Hispanic population in New Hampshire. For example, Black or African-American households in New Hampshire are two and a half times more likely to be headed by a single female, with no husband present, compared to White non-Hispanic households. Hispanic or Latino residents are twice as likely to be renters, compared to the White non-Hispanic residents of the state.

Table 8 also shows a summary disparity index measure, weighted by the portion of the New Hampshire population in that racial or ethnic group. Overcrowding (more than one person per room in the household) shows the highest disparity in New Hampshire. Minority populations in New Hampshire are five times more likely to live in overcrowded housing, compared to the White non-Hispanic population. Significant disparities are also seen in minority business and home ownership, food stamp usage, poverty and educational attainment.

The summary columns in Table 8 show that overcrowding, food stamps, and business ownership are the indicator categories with the greatest disparities. The average index column shows the highest disparities (compared to the white, non-Hispanic population) are for the Hispanic or Latino adults, and second highest for Black or African American adults in New Hampshire.

Values in the table equal to zero (0) signify an indicator that was not considered statistically precise enough to be included in the health equity scoreboard. Please see the appendix to this report for a more complete discussion of the statistical precision of the estimates used in this analysis.

The following tables show the detail behind Table 8, for each indicator used to construct the Summary Health and Equity Index. Included after each table is a brief discussion as to why that particular indicator is important, and why it was included in the overall index.

Many of these measures (more housing overcrowding, lower incomes, lower rate of homeownership, higher food stamp use, higher unemployment) are related one to the other. For example, poor individuals by definition have lower than average incomes. However, each indicator tells a different part of the story of the social determinants of health.

All of the indicators, with the exception of the business ownership data, come from the U.S. Census Bureau's American Community Survey, a continuous monthly survey of American households, which provides socio economic information for states, counties and county sub-divisions (cities, towns and school districts).

High School Degree

In New Hampshire over 90 percent of the White non-Hispanic adult population has a high school degree or better. Only 9 percent of the White non-Hispanic population in New Hampshire lacks a high school education. Almost 14 percent of the Black or African American residents, and 20 percent of the Hispanic residents in New Hampshire lack a high school degree or better. As shown later in this report (on Table 21) high school completion rates are also lower for minorities in New Hampshire

Table 9: Adults with a High School Degree or Better

Title: New Hampshire Adult Population with a High School Degree			
	Percent with HS or more	Percent Without	Ratio to White Alone
New Hampshire Residents Over Age 25			
State Total	91.0	9.0	
White non-Hispanic	91.1	8.9	1.0
Black or African American	86.4	13.6	1.5
American Indian	78.2	21.8	2.4
Asian	90.3	9.7	1.1
Two or More Races	88.1	11.9	1.3
Hispanic or Latino	79.8	20.2	2.3
1.0 or Less - No Disparity or Relative Advantage			
1.0 to 1.4 - Small Disparity			
1.5 to 2.1 Disparity Requires Attention			
Greater than 2.1 - More Attention is Needed.			

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Why does it matter?

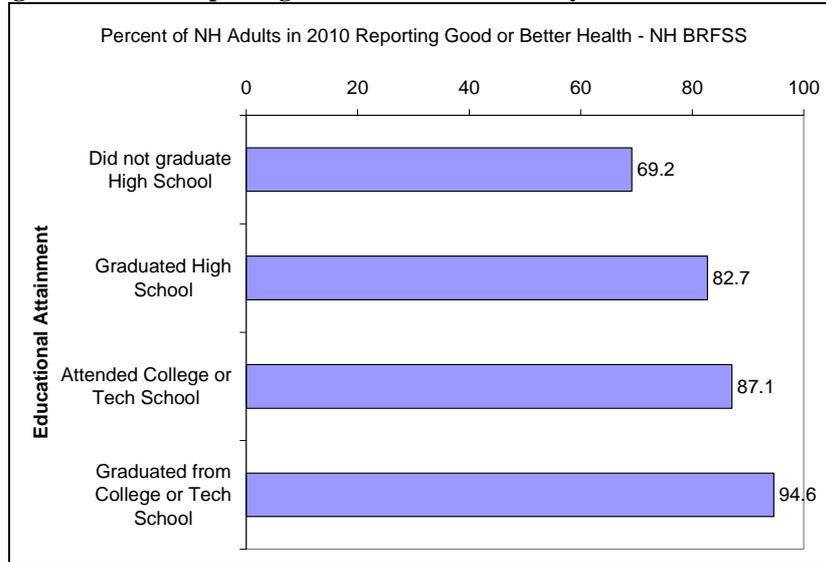
The benefits of having an education and having an educated population are numerous. Among the most obvious is the relationship between education and income. Adults with more education are more likely to be employed and also earn more than adults with lower levels of education.¹⁸ Educational attainment has also been shown to be positively correlated with good health.¹⁹

As shown in the following chart, New Hampshire residents that have graduated from college or a technical school are more likely to report being in good or better health than residents without a college degree. New Hampshire residents with only a high school degree or equivalent are less likely to be in good health, and high school dropouts are the least likely to report being in good or better health.

¹⁸ "Education pays in higher earnings and lower unemployment rates", U.S. Bureau of Labor Statistics, http://www.bls.gov/emp/ep_chart_001.htm

¹⁹ "Which Came First—Better Education or Better Health?", Federal Reserve Bank of St. Louis, April 2011, <http://www.stlouisfed.org/publications/re/articles/?id=2092>

Figure 6: Adults Reporting Good or Better Health by Educational Attainment



Single Mother Households

In New Hampshire, about 11 percent of the population lives in single female households. These households are headed by unmarried women, with no husband present in the home. The portion of Hispanic or Latino people living in single female households is more than twice the rate for the White non-Hispanic population. The same ratio holds for the Black or African American population in New Hampshire.

Table 10: Female Headed Households, No Husband Present

Area	Demographics		
Indicator	Family Structure		
Source:	American Community Survey, 2006 to 2010		
Title:	New Hampshire Households in Female Households, No Husband		
		<u>Percent</u>	<u>Ratio to</u>
		<u>Number of Households</u>	<u>White Alone</u>
New Hampshire people in family households: in female householder, no husband present			
State Total	141,009	11.1%	
White non-Hispanic	127,678	10.7%	1.0
Black or African American	3,121	26.7%	2.5
American Indian	306	11.2%	1.1
Asian	1,723	7.2%	0.7
Two or More Races	2,038	17.7%	1.7
Hispanic or Latino	6,585	23.4%	2.2
<div style="background-color: #92d050; padding: 2px;">1.0 or Less - No Disparity or Relative Advantage</div> <div style="background-color: #add8e6; padding: 2px;">1.0 to 1.4 - Small Disparity</div> <div style="background-color: #ffff00; padding: 2px;">1.5 to 2.1 Disparity Requires Attention</div> <div style="background-color: #ff0000; padding: 2px;">Greater than 2.1 - More Attention is Needed.</div>			

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Why does it matter?

Social scientists have found that children growing up in single-parent families are at a disadvantage when compared to children in a two-parent family. The disadvantages for these children are related to the poor economic condition of single-parent families, not just to parenting style.²⁰ Children in single-parent families are more likely to have lower levels of educational achievement than the children of two parent families, are twice as likely to drop out of school, and are more likely to become teen parents.²¹

Home Ownership

Minority populations in New Hampshire are much less likely to own a home, compared to White non-Hispanic residents. Black or African American residents of New Hampshire are twice as likely to be renters, compared to White non-Hispanic residents in New Hampshire. Hispanic or Latino residents are also more likely to be renters than owners, compared to the White non-Hispanic population.

Table 11: Home Owners and Renters

Area		Housing		
Indicator		Home Ownership		
Source:		American Community Survey, 2006 to 2010		
Title:		New Hampshire Households by Tenure (Owners/Renters)		
		<u>Percent</u>	<u>Percent</u>	<u>Ratio to</u>
		<u>Owner Occupied</u>	<u>Renters</u>	<u>White Alone</u>
New Hampshire Households by Type of Tenure				
	State Total	72.6	27.4	
	White non-Hispanic	73.6	26.4	1.0
	Black or African American	40.7	59.3	2.2
	American Indian	49.8	50.2	1.9
	Asian	58.9	41.1	1.6
	Two or More Races	59.4	40.6	1.5
	Hispanic or Latino	45.1	54.9	2.1
		1.0 or Less - No Disparity or Relative Advantage		
		1.0 to 1.4 - Small Disparity		
		1.5 to 2.1 Disparity Requires Attention		
		Greater than 2.1 - More Attention is Needed.		

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Why does it matter?

Benefits of owning a home include tax deduction, appreciation, equity, borrowing power, stability, and freedom²². Some studies suggest that minority home ownership fell more quickly after the Great Recession than non-minority home ownership.²³

²⁰ Single-parent families, <http://www.healthofchildren.com/S/Single-Parent-Families.html#b>

²¹ IBID

²² "6 top benefits of owning a home", <http://www.bankrate.com/brm/news/real-estate/reguide/buy-reasons1.asp>

Overcrowding

The U.S. Census Bureau defines overcrowding as 1.01 to 1.50 persons per room in a single dwelling unit. Severe overcrowding is separately defined as 1.51 persons or more per room. Minority populations in New Hampshire are three to six times more likely to be living in overcrowded housing conditions, when compared to the White non-Hispanic population in New Hampshire.

Table 12: More than One Person per Room

Area		Housing		
Indicator		Over Crowding (More than One Person per Room)		
Source:		American Community Survey, 2006 to 2010		
Title:		New Hampshire Households by Number of Occupants per Room		
		<u>Percent</u>	<u>Percent</u>	<u>Ratio to</u>
		<u>1 or Less</u>	<u>More than</u>	<u>White Alone</u>
		<u>Persons per Room</u>	<u>1 per Room</u>	
New Hampshire Households (%)				
	State Total	99.0	1.0	
	White non-Hispanic	99.0	1.0	1.0
	Black or African American	93.9	6.1	6.1
	American Indian	95.0	5.0	5.0
	Asian	95.7	4.3	4.3
	Two or More Races	96.5	3.5	3.5
	Hispanic or Latino	93.3	6.7	6.7
		1.0 or Less - No Disparity or Relative Advantage		
		1.0 to 1.4 - Small Disparity		
		1.5 to 2.1 Disparity Requires Attention		
		Greater than 2.1 - More Attention is Needed.		

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Why does it matter?

Overcrowded housing conditions causes deterioration in social behavior, as the lack of personal space increases stress within most individuals²⁴. Additionally, overcrowding may have health effects, resulting from the stress on individuals caused by overcrowding.²⁵ Crowded situations can also facilitate the spread of disease. In addition overcrowding can lead to a wide variety of costly problems for municipalities, including

²³ “The State of Communities of Color in the U.S. Economy”, Center for American Progress, <http://www.americanprogress.org/issues/economy/report/2011/01/21/8881/the-state-of-communities-of-color-in-the-u-s-economy/>

²⁴ Krieger J, Higgins D. Housing and health: time again for public health action. Am J Public Health. 2002;92(5): 758-768. and Graham NM. The epidemiology of acute respiratory infections in children and adults: a global perspective. Epidemiol Rev. 1990;12:149-178.

²⁵ <http://www.questia.com/library/1G1-177929872/transient-housing-and-overcrowding-what-are-the-costs>

excessive traffic, parking shortages, increased generation of solid waste and sewer flow, overburdened municipal services, crowded schools and substandard housing units.²⁶

Food Stamps

The U.S. Department of Agriculture Supplemental Nutrition Assistance Program (SNAP) is also commonly called the food stamp program. The SNAP program provides monthly benefits to eligible low-income families which can be used to purchase food. Minority populations (with the exception of the Asian population) are two to three times more likely to be receiving food stamps, when compared to the White non-Hispanic population in New Hampshire.

Table 13: Households Receiving SNAP

Area	Food/Nutrition		
Indicator	Household received Food Stamps/SNAP in the past 12 months:		
Source:	American Community Survey, 2006 to 2010		
Title:	New Hampshire Householder Receiving Food Stamps/SNAP (%)		
	Number of Households	Percent of Households	Ratio to White Alone
New Hampshire Households with SNAP			
State Total	29,881	5.8	
White non-Hispanic	26,597	5.5	1.0
Black or African American	791	18.0	3.3
American Indian	188	16.0	2.9
Asian	252	3.0	0.5
Two or More Races	595	13.4	2.4
Hispanic or Latino	1,497	15.8	2.9
1.0 or Less - No Disparity or Relative Advantage			
1.0 to 1.4 - Small Disparity			
1.5 to 2.1 Disparity Requires Attention			
Greater than 2.1 - More Attention is Needed.			

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Why does it matter?

The SNAP program provides eligible recipients the opportunity to purchase food at participating grocery stores and other retail outlets. Eligibility for SNAP depends on household size, income, expenses and resources. A household's gross monthly income — that is, its income before any of the program's deductions are applied — generally must be at or below 130 percent of the poverty line.²⁷ Therefore, utilization of SNAP benefits is often concentrated among poorer households.²⁸ Since "Food Stamps" is a means tested program, a higher score on the SNAP measure could indicate that minorities are better at

²⁶ Bashir SA. Home is where the harm is: inadequate housing as a public health crisis. *Am J Public Health*. 2002; 92(5):733-738.

²⁷ USDA studies suggest that about half of the poor households that are eligible for SNAP actually access the service. <http://www.fns.usda.gov/ora/menu/Published/snap/FILES/Participation/Techpartrate2007-2009.pdf>

²⁸ http://faculty.gvsu.edu/borderss/Publish/images/Newaygo_SNAP.pdf

accessing services, which in turn could mitigate the health impact. However, SNAP might even contribute to poor health, since it is legal to purchase soda, chips, and cookies using food stamps²⁹. Therefore access to SNAP benefits may not solve the overall problem of poverty and hunger.

Family Income

Median family income is significantly lower for Black or African Americans, and American Indian families, compared to White non-Hispanic families, in New Hampshire. White non-Hispanic family income in New Hampshire is about 40 percent higher than for Hispanic or Latino families in New Hampshire. Median income provides a better measure of what is happening to the “typical” household than reporting average household income, because median income is influenced much less by outliers³⁰.

Table 14: Median Family Income

Source: American Community Survey, 2006 to 2010	
Title: Median household income in the past 12 months (in 2010 dollars)	
	Ratio to 2010 <u>White Alone*</u>
New Hampshire Households Income	
State Total	\$63,277
White non-Hispanic	\$63,340 1.0
Black or African American	\$47,638 1.3
American Indian	\$53,571 1.2
Asian	\$73,495 0.9
Two or More Races	\$55,188 1.1
Hispanic or Latino	\$51,336 1.2

1.0 or Less - No Disparity or Relative Advantage
1.0 to 1.4 - Small Disparity
1.5 to 2.1 Disparity Requires Attention
Greater than 2.1 - More Attention is Needed.

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Why does it matter?

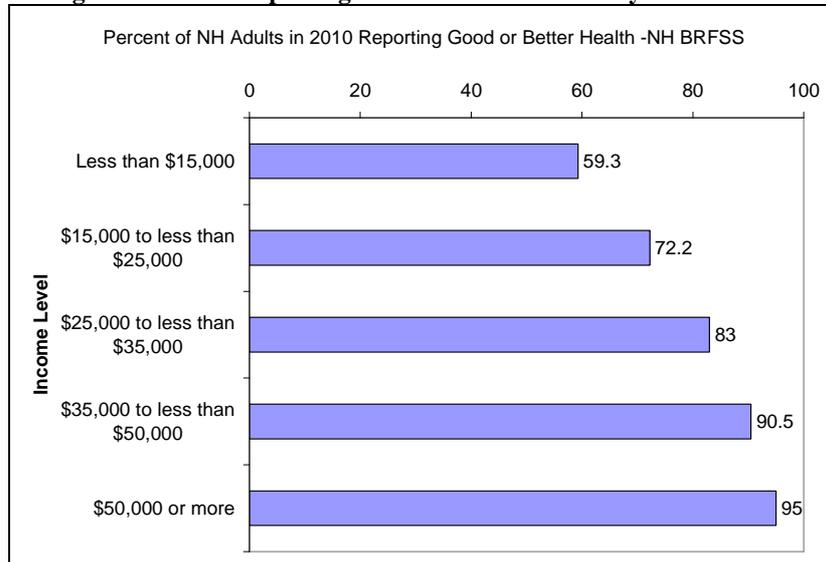
Surveys show that there is a relationship between income and overall health. According to the most recent New Hampshire Behavioral Risk Factor Surveillance System (BRFSS) survey, lower income New Hampshire adults are less likely to report being in good or better health than higher income adults. For example, less than 60 percent of adults in New Hampshire making less than \$15,000 a year report being in good or better health. Over 80 percent of adults earning \$25,000 to \$35,000 report being in good to better

²⁹ For example, a 2008 USDA study found food stamp recipients consumed a higher percentage of calories from fats, alcoholic beverages and added sugars than people not on food stamps
<http://minnesota.publicradio.org/display/web/2012/12/13/health/food-stamp-spending-junk-food/>

³⁰ The Measurement of Economic Performance and Social Progress Revisited - Reflections and Overview, September, 16, 2009, (Stiglitz, Sen, & Fitoussi, 2009)

health, while 95 percent of those earning \$50,000 or more report being in good or better health.

Figure 7: Adults Reporting Good or Better Health by Income Level



Poverty

The percentage of individuals with income below the poverty level differs significantly among racial and ethnic groups in New Hampshire. About 7 percent of the New Hampshire residents who are White non-Hispanic have incomes below the poverty line. The portion of New Hampshire Hispanics living below the poverty line is twice that of the white population. And New Hampshire residents who are Black or African American are three times as likely to be living below the poverty line.

Table 15: Portion of the Population in Poverty

Area	Wealth/Poverty		
Indicator	Percent of Population with Income below poverty level:		
Source:	American Community Survey, 2006 to 2010		
Title:	New Hampshire Population at or below the poverty level		
	<u>Number of</u>	<u>Percent of</u>	<u>Ratio to</u>
	<u>People</u>	<u>Population</u>	<u>White Alone</u>
New Hampshire Population in Poverty			
State Total	99,527	7.8	
White non-Hispanic	86,063	7.3	1.0
Black or African American	3,164	24.2	3.3
American Indian	435	16.2	2.2
Asian	2,523	9.4	1.3
Two or More Races	2,046	12.3	1.7
Hispanic or Latino	5,331	15.8	2.2
1.0 or Less - No Disparity or Relative Advantage			
1.0 to 1.4 - Small Disparity			
1.5 to 2.1 Disparity Requires Attention			
Greater than 2.1 - More Attention is Needed.			

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Why does it matter?

Poverty is linked to a number of negative educational, health-related, and emotional outcomes across all age groups. The effects of poverty are especially punishing on children as the impacts can begin before birth and continue well into adulthood. Children living in poverty are more likely than children from non-poverty families to develop disease and to experience more severe effects from any disease they may develop.³¹

Unemployment

Working age adults who are in the labor force, but do not have a part time or full time job, are classified as unemployed by the Bureau of Labor Statistics. Unemployment also varies among minority workers in New Hampshire. Black or African American workers and Hispanic or Latino workers are more likely to be unemployed, compared to the White non-Hispanic population.

Table 16: Percent of the Workforce Unemployed

Area	Employment		
Indicator	Population 16 to 64 years, In the Civilian labor force and Unemployed		
Source:	American Community Survey, 2006 to 2010		
Title:	New Hampshire Unemployment Rate		
	<u>Number of</u>	<u>Percent of</u>	<u>Ratio to</u>
	<u>Workers</u>	<u>Labor Force</u>	<u>White Alone</u>
New Hampshire Labor Force Unemployed			
State Total	39,546	5.8	
White non-Hispanic	37,776	5.7	1.0
Black or African American	669	9.0	1.6
American Indian	32	2.1	0.4
Asian	350	2.4	0.4
Two or More Races	616	9.5	1.7
Hispanic or Latino	1,770	11.1	1.9
1.0 or Less - No Disparity or Relative Advantage			
1.0 to 1.4 - Small Disparity			
1.5 to 2.1 Disparity Requires Attention			
Greater than 2.1 - More Attention is Needed.			

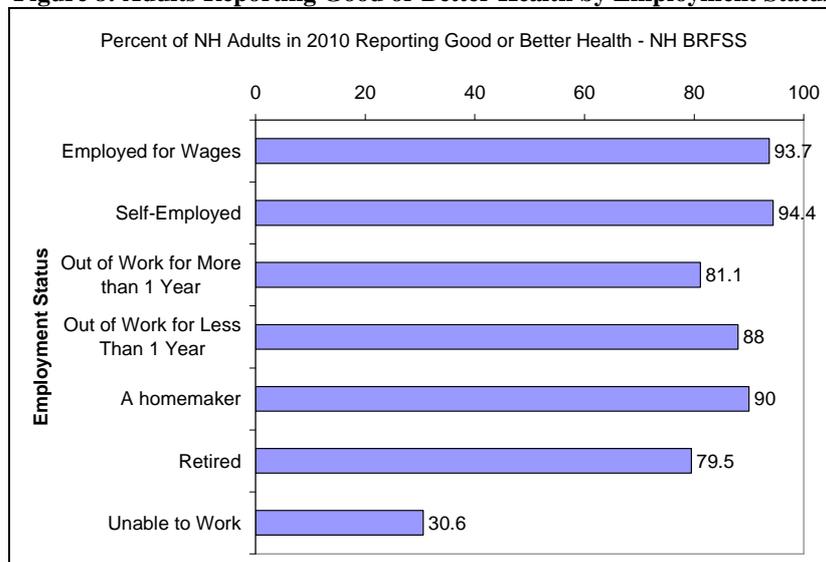
A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Why does it matter?

Adults that are employed are considerably more likely to report being in good or better health, compared to those that are out of work. Adults who are out of work for more than one year are not as healthy as those adults who are out of work for less than one year. Adults who are unable to work are the least likely to report being in good or better health.

³¹ Fremont Area Community Foundation Indicators Project, <http://faculty.gvsu.edu/borderss/poverty.html>

Figure 8: Adults Reporting Good or Better Health by Employment Status



Job Quality

Service occupations in New Hampshire generally pay less than management occupations. Black or African American workers, and Hispanic or Latino workers, are more likely to be employed in service occupations, and less likely to be employed in higher paying management occupations, compared to the White non-Hispanic population.

Table 17: Occupational Employment³²

Area	Employment		
Indicator	Management and Service Occupations (Job Quality)		
Source:	American Community Survey, 2006 to 2010		
Title:	New Hampshire employees by Type of Occupation		
	<u>Number of Employees</u>	<u>Percent of Employed</u>	<u>Ratio to White Alone</u>
New Hampshire Employment in Services			
State Total	101,255	15.2	
White non-Hispanic	98,033	15.0	1.0
Black or African American	1,609	23.3	1.6
American Indian	324	20.0	1.3
Asian	1,598	11.7	0.8
Two or More Races	936	15.7	1.0
Hispanic or Latino	3,222	22.3	1.5
1.0 or Less - No Disparity			
1.0 to 1.4 - Small Disparity			
1.5 to 2.1 Disparity Requires Attention			
Greater than 2.1 - More Attention is Needed.			

³² The table shows service occupations within all industries, not just for the Service Industry itself.

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Why does it matter?

Job quality can have important impacts on overall health of individuals and families. Jobs in the service sector are often times more physically demanding than management occupations. Job insecurity is most often higher in the service sector, which could mean stress related effects on overall health³³. Supervisor support for work-family issues and workplace flexibility are usually less prevalent in service occupations, compared to management occupations. Another study suggests that demanding, unstable and unsatisfying work have more negative effects on mental health than being unemployed³⁴.

Evidence points to a combination of structural factors beyond human capital that lead racial, ethnic and linguistic minorities to be allocated into certain occupations. The structure of the U.S. labor market is such that economic growth in recent decades has led to job growth in low-wage and high-wage occupations which has perpetuated inequalities in earnings among workers³⁵. This has produced a split or dual labor market in which jobs in the primary labor market offer high wages, benefits, good working conditions, and security, while jobs in the secondary labor market offer lower wages, fewer benefits, harsh conditions and little opportunity to advance³⁶. Minorities may also face discrimination in hiring³⁷, and social segregation by job category³⁸ which contributes to these inequalities.

In addition limited English proficiency can create a barrier in the workplace. The following table shows the dichotomy of language and employment in New Hampshire.

Many foreign migrants into New Hampshire are highly educated, and speak English very well, as shown by the above average portion of those employees in Computer, Science, and Production occupations who speak another language, but also speak English well or very well. At the same time we see a clear indication of employment as a social determinant of health, with workers at the lower levels of employment (in Food and Maintenance occupations), who don't speak English well.

³³ <http://www.foxnews.com/health/2012/05/17/best-and-worst-jobs-for-your-health/>

³⁴ <http://healthland.time.com/2011/03/15/study-having-a-bad-job-is-worse-than-no-job-for-mental-health/>

³⁵ Wilson, S. (2004). *The struggle over work: the 'end of work' and employment options for post-industrial societies*. New York, NY: Routledge., page 84

³⁶ Piore, M. (1970). *The dual labor market: theory and implications*. In Grusky, D. (2008). *Social stratification: class, race, and gender in sociological perspective*. Westview Press: Boulder, CO.

³⁷ Pager, D. (2003). *Marked: race, crime and finding work in an era of mass incarceration*. In Grusky, D. (2008). *Social stratification: class, race, and gender in sociological perspective*. Westview Press: Boulder, CO.

Pager, D., & Shepard, H. (2008). *The sociology of discrimination: Racial discrimination in employment, housing, credit, and consumer markets*. *Annual Review of Sociology*, 34, 181-209.

Reskin, B. (2012). *The race discrimination system*. *Annual Review of Sociology*, 38, 17-35.

³⁸ Jacobs, J. (1989). *Revolving Doors: Sex Segregation and Women's Careers*. In Grusky, D. (2008). *Social stratification: class, race, and gender in sociological perspective*. Westview Press: Boulder, CO.

Table 18: Ability to speak English for people who speak another language at home, by occupation³⁹

Major Occupational Group	Estimated population size	Percent of total	Speaks English only at home, %	Speaks another language at home, speaks English well or very well, %	Speaks another language at home, speaks English not well or not at all, %
Total	696,749	100.00	92.49	6.69	0.82
Management	74,498	10.69	93.40	6.51	0.09
Business and Financial Operations	32,914	4.72	93.70	5.93	0.37
Computer and Mathematical	22,581	3.24	85.68	14.22	0.11
Architecture and Engineering	19,006	2.73	93.54	5.97	0.49
Life, Physical and Social Science	5,828	0.84	87.15	12.35	0.50
Community and Social Service	10,446	1.50	91.69	7.92	0.39
Legal	5,613	0.81	95.53	4.04	0.43
Education, Training and Library	46,632	6.69	94.54	5.29	0.17
Arts, Design, Entertainment, Sports and Media	10,837	1.56	92.68	6.50	0.82
Health Care Practitioners and Technical	39,608	5.68	92.15	7.28	0.57
Health Care Support	15,604	2.24	91.71	7.65	0.64
Protective Service	11,306	1.62	95.11	4.89	0.00
Food Preparation and Serving Related	34,554	4.96	90.62	6.57	2.82
Building and Grounds Cleaning and Maintenance	23,887	3.43	89.17	7.57	3.26
Personal Care and Service	21,936	3.15	92.57	6.97	0.46
Sales and Related	83,821	12.03	93.80	5.87	0.33
Office and Administrative Support	94,012	13.49	93.98	5.52	0.50
Farming, Fishing and Forestry	2,405	0.35	94.22	4.66	1.12
Construction and Extraction	40,238	5.78	93.56	5.37	1.07
Installation, Maintenance and Repair	22,405	3.22	96.76	3.24	0.00
Production	44,975	6.45	85.73	11.17	3.10
Transportation and Material Moving	33,643	4.83	92.52	6.35	1.13

³⁹ Source: "Occupational Injury and Illness in New Hampshire: The 2011 Status Report: Data to Inform Programs and Policies", Custom analysis of the 2006-2010 5-year American Community Survey (ACS) Public Use Microdata Sample (PUMS) file for New Hampshire, page 10.

Business Ownership

The U.S. Census Bureau collected data from more than 2 million business owners across the country for the 2007 Survey of Business Owners (SBO). When comparing the number of people working in New Hampshire to the number of businesses owned from the 2007 SBO, Hispanics are 4 times less likely to own a business, and Black or African Americans 8 times less likely to own a business in New Hampshire.

Table 19: Business Ownership

Employment Business Ownership U.S. Census Bureau, 2007 Survey of Business Owners Business Ownership per Employed Person (ACS 2006 -2010)				
	ACS 2006-2010	2007 Survey	Ratio	
	Number of	Number of	Businesses	Ratio to
	Employees	Businesses	per 1,000	White Alone*
			Workers	
State Total	667,200	31,408	47.1	
White non-Hispanic	652,742	26,383	40.4	1.0
Black or African American	6,915	33	4.8	8.5
American Indian	1,620			
Asian	13,676	711	52.0	0.8
Two or More Races	5,972			
Hispanic or Latino	14,458	138	9.5	4.2

* White Alone value divided by minority group value

1.0 or Less - No Disparity or Relative Advantage
1.0 to 1.4 - Small Disparity
1.5 to 2.1 Disparity Requires Attention
Greater than 2.1 - More Attention is Needed.

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Why does it matter?

Research suggests that business ownership can have a positive impact on health. A study by Gallup found U.S. entrepreneurs are less likely than other workers to have ever been diagnosed with chronic health problems, such as high cholesterol, high blood pressure, diabetes and obesity. Specifically, the study found that those who own their own business are more likely than other employed adults to exercise frequently and eat fruits and vegetables regularly. Entrepreneurs express more optimism about their future than other employed adults.⁴⁰

⁴⁰ The research, part of the Gallup Healthways Well-Being Index, was based on surveys of 273,175 adults, of which nearly 7,000 were defined as entrepreneurs, <http://www.well-beingindex.com/newsroom.asp>

Section 4: Youth and Juvenile Measures

Disadvantages in health and economic situations can accumulate over the course of one’s life. The problem is that starting life as a child or juvenile with an advantage (or disadvantage) can put a person on a certain future path. As stated in a recent position paper from the American Academy of Pediatrics, many children in the United States do not reach their full health potential, because “the fundamental determinants of children’s health and well-being, and subsequently the health and well-being of the adults they will become, are rooted in social, environmental, and behavioral factors that lie beyond the purview of the health care system.”⁴¹

Differences between racial and ethnic groups in New Hampshire extend from the adult population, through to the youth and juvenile population. Our research shows that elementary and secondary students in New Hampshire show differences by race and ethnicity in school achievement, high school completion, and in risky behaviors.

School Test Scores

Elementary school test scores for reading are about equal for minority and White non-Hispanic school children in New Hampshire. More disparity exists in Grade 4 Mathematics scores between minority and White populations. Test scores for Asian children are better than for White non-Hispanic children across every grade and discipline measured.

Table 20: Elementary School Test Scores

Area	Education		
Indicator	Academic Test Scores, National Assessment of Educational Progress (NAEP)		
Source:	New Hampshire Department of Education		
Title:	New Hampshire Percent of Students Performing at or Above Proficient, 2009		
	Percent At or Above	Percent Below	Ratio to White
NAEP Grade 4 Mathematics			
State Total	56	44	
White non-Hispanic	57	43	1.0
Black or African American	26	74	1.7
Asian	67	33	0.8
Hispanic	31	69	1.6
NAEP Grade 8 Mathematics			
State Total	43	57	
White non-Hispanic	44	56	1.0
Black or African American	NA		0.0
Asian	62	38	0.7
Hispanic	22	78	1.4
NAEP Grade 4 Reading			
State Total	41	59	
White non-Hispanic	42	58	1.0
Black or African American	28	72	1.2
Asian	45	55	0.9
Hispanic	30	70	1.2
NAEP Grade 8 Reading			
State Total	39	61	
White non-Hispanic	40	60	1.0
Black or African American	NA		0.0
Asian	49	51	0.9
Hispanic	27	73	1.2

1.0 or Less - No Disparity or Relative Advantage
1.0 to 1.4 - Small Disparity
1.5 to 2.1 Disparity Requires Attention
Greater than 2.1 - More Attention is Needed.

⁴¹ “Health Equity and Children's Rights”, Council on Community Pediatrics and Committee on Native American Child Health, <http://pediatrics.aappublications.org/content/125/4/838.full.html>

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

High School Completion

Minority students in New Hampshire (with the exception of Asian students) are less likely to complete high school, compared to white students. High school students with limited English are even less likely to complete high school. The lowest completion rates are for special education students.

Table 21: High School Completion Rates

Education				
High School Graduation Rates				
New Hampshire Department of Education				
2010-2011 Graduation Rates for Class Of 2011 Cohort				
Cohort Method Over Four Years				
New Hampshire Summary				
State Totals by Race/Ethnicity	Cohort	Graduation Rate (%)	Non-Grad Rate (%)	Ratio to White
Total	16,330	86.09	13.91	
Native American	54	77.78	22.22	1.7
Asian	342	87.43	12.57	1.0
Hispanic	563	73.18	26.82	2.0
Black or African American	301	73.42	26.58	2.0
White	14,996	86.82	13.18	1.0
Multi-Race	74	86.49	13.51	1.0
New Hampshire Summary				
State Totals by Sub-Group	Cohort	Graduation Rate (%)	Non-Grad Rate (%)	Ratio to White
Total	16,330	86.09	13.91	
Limited English Proficient	333	72.97	27.03	2.1
Special Education	2,957	69.46	30.54	2.3
Free/Reduced Lunch	4,172	72.15	27.85	2.1
1.0 or Less - No Disparity or Relative Advantage 1.0 to 1.4 - Small Disparity 1.5 to 2.1 Disparity Requires Attention Greater than 2.1 - More Attention is Needed.				

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Risky Behavior

The most recent Youth Risk Behavior Survey shows that minority youth in New Hampshire are more likely to experiment with alcohol and marijuana, and smoke at an early age, compared to White non-Hispanic students. Minority youth are also more likely to not attend school because they felt they would be unsafe at school or on the way to or from school.

Table 22: Youth Risk Behavior Survey

Area: Education						
Indicator: Risky Behavior for High School Students						
Source: New Hampshire Data - 2011 Youth Risk Behavior Survey						
Title: Risky Behavior for Teenagers in New Hampshire						
New Hampshire Data - 2011 Youth Risk Behavior Survey		White	Asian	Black or African American	American Indian or Alaskan Native	Hispanic
Number	Question (Percentages responding yes to the question):					
8	Describe your grades in school as mostly A's and B's.	72.4	77.8	55.7	53.4	57.1
10	When riding in a car driven by someone else, never or rarely wear seatbelt.	10.6	12.8	23.1	20.0	22.2
14	Did not go to school because felt would be unsafe at school or on the way to or from school.	3.9	10.7	15.3	15.6	14.7
15	Percentage in a physical fight one or more times during the past 12 months	22.5	22.6	41.6	42.3	40.5
18	During the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose?	7.3	10.4	18.9	16.3	18.6
21	During the past 12 months, have you ever been bullied on school property?	23.6	19.2	22.6	30.9	26.0
24	During the past 12 months, did you ever seriously consider attempting suicide?	14.2	16.2	20.0	22.6	22.8
29	Percentage smoking before age 13.	8.5	11.2	20.6	17.1	20.1
30	During the past 30 days, did you smoke cigarettes on one or more days?	17.9	14.4	27.7	30.1	27.9
34	Percentage drinking before age 13.	13.3	17.8	28.7	22.7	30.2
35	During the past 30 days, did you have at least one drink of alcohol on one or more days?	37.3	24.3	42.2	42.9	48.5
36	Had 5 or more drinks in a row, within hours, on one or more days?	23.2	15.3	31.1	29.5	33.0
40	Percentage smoking marijuana before age 13.	6.8	7.4	19.6	15.3	18.0
41	During the past 30 days, did you use marijuana on one or more days?	26.5	17.4	38.3	36.4	37.4
45	During your life, have you taken a prescription drug (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) with	18.6	16.4	27.7	28.8	28.2
54	During the past 12 months, anyone offered, sold, or given you an illegal drug on school property?	22.3	20.3	29.9	29.8	33.8
55	Have you ever had sexual intercourse?	44.7	29.0	56.9	57.5	59.5
56	Percentage having sexual intercourse before age 13.	3.5	7.5	17.5	13.3	16.2
60	The last time you had sexual intercourse, did you or your partner use a condom?	63.0	60.9	56.5	64.3	57.7
61	The last time you had sexual intercourse, used birth control pills to prevent pregnancy	29.3	20.1	16.7	18.3	19.2
87	Think people at Great Risk harming themselves (physically or in other ways), if they have five or more drinks of alcohol each weeken	35.6	51.0	36.6	29.5	33.4
	Number of Students	29,911	1,016	901	569	2,313
RATIO TO WHITE HIGH SCHOOL STUDENTS						
8*	Describe your grades in school as mostly A's and B's.	1.0	0.9	1.3	1.4	1.3
10	When riding in a car driven by someone else, never or rarely wear seatbelt.	1.0	1.2	2.2	1.9	2.1
14	Did not go to school because felt would be unsafe at school or on the way to or from school.	1.0	2.7	3.9	4.0	3.7
15	Percentage in a physical fight one or more times during the past 12 months	1.0	1.0	1.8	1.9	1.8
18	During the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose?	1.0	1.4	2.6	2.2	2.5
21	During the past 12 months, have you ever been bullied on school property?	1.0	0.8	1.0	1.3	1.1
24	During the past 12 months, did you ever seriously consider attempting suicide?	1.0	1.1	1.4	1.6	1.6
29	Percentage smoking before age 13.	1.0	1.3	2.4	2.0	2.4
30	During the past 30 days, did you smoke cigarettes on one or more days?	1.0	0.8	1.6	1.7	1.6
34	Percentage drinking before age 13.	1.0	1.3	2.2	1.7	2.3
35	During the past 30 days, did you have at least one drink of alcohol on one or more days?	1.0	0.7	1.1	1.2	1.3
36	Had 5 or more drinks in a row, within hours, on one or more days?	1.0	0.7	1.3	1.3	1.4
40	Percentage smoking marijuana before age 13.	1.0	1.1	2.9	2.3	2.6
41	During the past 30 days, did you use marijuana on one or more days?	1.0	0.7	1.4	1.4	1.4
45	During your life, have you taken a prescription drug (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) with	1.0	0.9	1.5	1.5	1.5
54	During the past 12 months, anyone offered, sold, or given you an illegal drug on school property?	1.0	0.9	1.3	1.3	1.5
55	Have you ever had sexual intercourse?	1.0	0.6	1.3	1.3	1.3
56	Percentage having sexual intercourse before age 13.	1.0	2.1	4.9	3.8	4.6
60*	The last time you had sexual intercourse, did you or your partner use a condom?	1.0	1.0	1.1	1.0	1.1
61*	The last time you had sexual intercourse, used birth control pills to prevent pregnancy	1.0	1.5	1.8	1.6	1.5
87*	Think people at Great Risk harming themselves (physically or in other ways), if they have five or more drinks of alcohol each weeken	1.0	0.7	1.0	1.2	1.1
* White Alone value divided by minority group value						
1.0 or Less - No Disparity or Relative Advantage						
1.0 to 1.4 - Small Disparity						
1.5 to 2.1 Disparity Requires Attention						
Greater than 2.1 - More Attention is Needed.						

A disparity score greater than 1.00 indicates that minorities are doing worse than the white population. A disparity score less than 1.00 indicates that minorities are doing better than the white population. A disparity score equal to 1.00 indicates that minorities and the white population are doing the same.

Improving REaL Data Collection in New Hampshire

In 2010, the Endowment for Health funded the University of New Hampshire Institute for Health Policy and Practice to conduct an Assessment of Race, Ethnicity and Language Data Collection in New Hampshire Public Health Data Sets⁴². Researchers surveyed data stewards of New Hampshire public health data to see how closely they align with data collection guidelines and recommendations from the U.S. Office of Management and Budget (OMB) and the Institute of Medicine (IOM)⁴³. The assessment documented current public health data collection methods in New Hampshire, and recommended ways in which data collection efforts could be modified and streamlined to more effectively track health disparities.

Increasingly health care regulatory bodies and payment methodologies are requiring healthcare organizations to provide evidence that every patient they serve receives appropriate patient- and family-centered quality care. Collecting useful data to identify vulnerable patients will enable health care organizations to improve care and meet reporting requirements. Health inequities can be better managed with accurate data to identify issues of concern and measure the quality of interventions⁴⁴.

According to national best practices, the following five features should be standardized to facilitate collection of valid and reliable data⁴⁵:

- Who provides the data—an individual’s racial or ethnic identity should always be provided by the individual or his or her caretaker. It should be self-identified and never inferred from observation or name alone.
- When to collect the data—data should be collected upon patient registration so that appropriate fields are completed before the patient begins treatment. Ideally, data should be shared (in conformance with privacy rules), so that patients are not repeatedly asked to answer the same questions.
- How data should be stored—demographic data should be held in a standard database format to facilitate aggregation and linking to clinical data.
- How patient concerns should be addressed—standard scripts should be used to reassure patients that data on their race and ethnicity are used to track quality.
- Staff training—staff responsible for collecting demographic data should receive regular training and evaluation.

⁴² Schreiber J, Costello A. Assessment of Race, Ethnicity and Language Data Collection in New Hampshire Public Health Data Sets. Durham, NH: University of New Hampshire, NH Institute for Health Policy and Practice; September 2010. Available at: www.nhhealthpolicyinstitute.unh.edu/pdf/Assessment.pdf

⁴³ The current OMB standard can be found at:

<http://minorityhealth.hhs.gov/templates/browse.aspx?lvl=2&lvlid=172>

⁴⁴ See “Improving Health Care Quality: Racial, Ethnic and Language Data”, at:

<http://www.healthynh.com/images/PDFfiles/nhhep/REaL%20data%20Issue%20Brief%20Final%20Draft%206-14-12.pdf>

⁴⁵ Adapted from: Commission to End Health Care Disparities White Paper on Collecting and using ethnicity and language data in ambulatory settings.

In a positive development the New Hampshire Department of Health and Human Services is developing and will soon release a new online database called WISDOM (Web-based Interactive System for Direction and Outcome Measures). WISDOM promises to be a repository for new and existing information for REaL data in New Hampshire. We expect that future updates of this report will be improved by relying on the WISDOM data sets.

REaL Data Best Practices from Other States⁴⁶

- Minnesota enacted legislation and created a Health Equity Learning Collaborative to create a state standard on REaL data for state health reform activities.
- Connecticut is exploring options for collecting REaL data from the state all-payer claim data base (APCD). 9 states (including New Hampshire) have an APCD
- Ohio and Virginia are working with their Medicaid Managed Care contractors to collect and report REaL data.
- The New Mexico Department of Health has instituted a new model for health planning to create a common language across local, Tribal, regional and state policy, creating a forum for the state and communities to work collaboratively to address mutually identified population health needs.

Improving Health Equity in New Hampshire

In 2010, the Endowment for Health, the Foundation for Healthy Communities, the NH Institute for Health Policy and Practice, the NH Minority Health Coalition, the NH Department of Health and Human Services (DHHS) Office of Minority Health and Refugee Affairs (OMHRA), and partners established the NH Health and Equity Partnership⁴⁷ to examine issues relating to the health of New Hampshire's racial, ethnic and linguistic minorities. The Partnership's vision is for everyone in New Hampshire to have a fair opportunity to live a long, healthy life. The Partnership is guided in its work by the 2011 *Plan to Address Health Disparities and Promote Health Equity in New Hampshire*, which recommends the "development of an equity index reflecting data from health and other sectors." The plan serves as a basis for collaboration between diverse stakeholders, public and private, to promote initiatives and policies that can help make our communities healthier places to live, learn, work and play for all.

The National Stakeholder Strategy for Achieving Health Equity provides a common set of goals and objectives for public and private sector initiatives and partnerships to help racial and ethnic minorities -- and other underserved groups -- reach their full health potential⁴⁸. The strategy -- a product of the National Partnership for Action (NPA) -- incorporates ideas, suggestions and comments from thousands of individuals and organizations across the country. Local groups can use the National Stakeholder Strategy to identify which goals are most important for their communities and adopt the most

⁴⁶ "State Policymakers' Guide for Advancing Health Equity Through Health Reform Implementation", National Academy for State Health Policy, August 2012.

⁴⁷ <http://www.equitynh.org>

⁴⁸ <http://minorityhealth.hhs.gov/npa/templates/content.aspx?lvl=1&lvlid=33&ID=286>

effective strategies and action steps to help reach them. Among the NPA recommendations to state policymakers:

- Increase awareness of the significance of health disparities, and their impact.
- Strengthen and broaden leadership for addressing health disparities at all levels
- Improve health and healthcare outcomes for racial, ethnic, and underserved populations
- Improve cultural and linguistic competency and the diversity of the health-related workforce
- Improve data availability, and coordination, utilization, and diffusion of research and evaluation outcomes.

State policymakers should be concerned about health equity. According to a recent study by the Kaiser Family Foundation, disparities in health care hold back continued improvement in overall health care quality and result in unnecessary costs. Recent analysis estimates that 30 percent of direct medical costs for Blacks, Hispanics, and Asian Americans are excess costs due to health inequities and that the economy loses an estimated \$309 billion per year due to the direct and indirect costs of disparities⁴⁹.

The National Academy for State Health Policy notes that state policymakers are in an excellent position to use the tools of the Affordable Care Act (ACA) to advance health equity for racial and minority populations. Policy levers available through the ACA include expanding insurance coverage through Medicaid expansion and insurance exchanges (improving minority population access to health care services⁵⁰), health care delivery reform (through encouraging medical homes and diversity in the health care workforce), and ACA provisions for data collection and standardization. While the ACA provides a unique platform to catalyze state efforts, advancing health equity does not depend solely on ACA. State policymakers can also encourage cross-agency collaboration, and frame health equity as an issue of quality, cost and justice⁵¹.

⁴⁹ “Focus on Health Care Disparities” Kaiser Family Foundation publication #8396, December 2012

⁵⁰ As demonstrated in Table 7 of this report, minorities in New Hampshire are less likely to have health insurance coverage, compared to the White non-Hispanic population.

⁵¹ “State Policymakers’ Guide for Advancing Health Equity Through Health Reform Implementation”, National Academy for State Health Policy, August 2012.

Appendix: Statistical Precision of the Estimates

Several of the indicators used in this report are based on physical measurements – such as school grade test scores, and high school graduation rates. These actual counts are not subject to issues associated with the statistical precision of the estimates.

Other indicators in this report are based on surveys, usually small samples of a larger population in an area. Such samples are subject to issues related to the statistical precision of the estimates from those surveys.

The American Community Survey

Several of the community indicators, including the percentage of adults in poverty, home ownership, the number of people per room, household and family income, unemployment rates, the number of people living in unmarried female households, educational attainment, and the portion of households receiving food stamps, are taken from the American Community Survey.

The American Community Survey is the replacement for the decennial census long-form, which was last administered by the U.S. Census Bureau in 2000. The long form was a sample of 1 in 6 households, a very large sample size, encompassing almost 17 percent of households. Approximately 100,000 out of 547,000 New Hampshire housing units were sampled with the long form in the 2000 Census.

While the Census still counts people every ten years, the characteristics of the population are now measured by the Census Bureau's American Community Survey (ACS). The ACS is actually a continuous monthly survey of American households, and provides socio economic information much more frequently than every ten years.

However, the ACS is based on a much smaller sample size than in the prior Census long form. The Census Bureau estimates that the ACS now samples a little more than 2 percent of the households across the country. For example, in 2010 the ACS sampled approximately 10,000 New Hampshire households, one tenth as many as by the long form used by the Census in 2000.⁵²

The ACS sample design yields higher margins of error than the census long form data, due primarily to the much smaller sample size in the ACS. In order to reduce the sampling error associated with the smaller sample size in the ACS, the demographic characteristics for small areas, like towns and census tracts, are calculated by the Census based on a five year average. Town level ACS data for New Hampshire is available for the five-year period 2006 to 2010, and is actually an average of survey results over those five years. However, it would take approximately 12 years of data collection to derive a community sample size in the ACS which would be equivalent to the sample size in the old Census long form.

⁵² http://www.census.gov/acs/www/methodology/sample_size_data/index.php .

The Census Bureau includes margins of error (MOE) with the ACS estimates. The Census Bureau does this in order to tell data users that the ACS data has uncertainty, and that reliability of the estimates is an issue. As a rule of thumb, the more detailed the characteristic of the population and the smaller the geography, the higher the margin of error (MOE).

The ACS 2006-2010 MOEs imply large ranges around the point estimate when calculating poverty rates by race and ethnicity in New Hampshire. For example, the Black or African American New Hampshire poverty rate is 24.2 percent, with a range (calculated from the MOE at the 90 percent confidence interval) of 4.6 percent. The Hispanic or Latino poverty rate is 15.8 percent, with a range of 2.7 percent. Estimates for these groups at the city or town level would have even larger MOEs, since the sample sizes would be smaller than the state sample size.

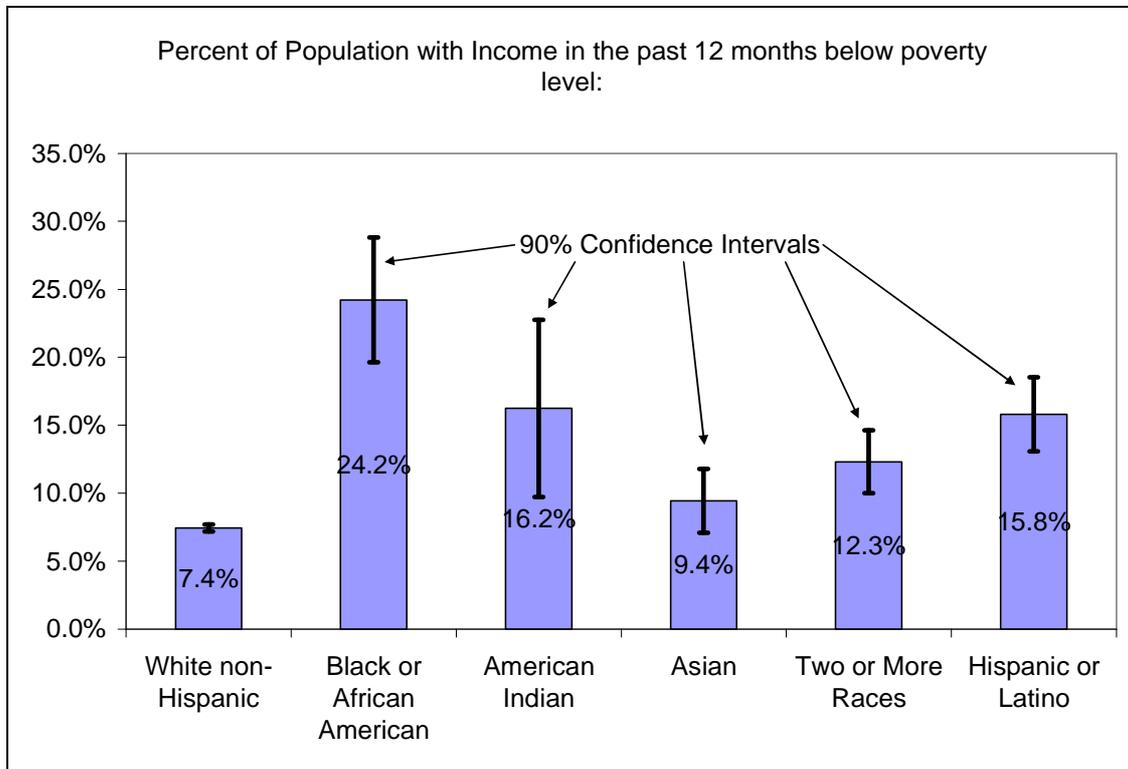
In statistics, a result is referred to as "statistically significant" if it is unlikely to have occurred by chance alone. The minority population in New Hampshire is relatively small. In order to verify that size of the minority population will not limit the statistical significance of these estimates, we examined the statistical significance of the ACS estimates at the state level. We believe that an ACS estimate (for poverty, for example) that is based on sample with measurable statistical precision should be tested to see if the differences between the white and minority populations are in fact differences.

All values were tested to see if the two estimates were significantly different at a 90 percent confidence interval. When the results were found to be statistically significant, this simply means that we can be 90 percent certain that the difference between two estimates exists or that there is a less than 10 percent chance that the difference was entirely due to chance.

Based on our analysis we have concluded that there are significant statistical differences between the white population and most of the minority populations in New Hampshire, across the majority of the indicators. Even Manchester and Nashua show statistically significant differences between the White population and minority populations across indicators. However, the results of our analysis are mixed. For example, the Black poverty rate is significantly different from the White non-Hispanic rate, according to our examination of the 90 percent confidence range around each estimate. However, the Asian poverty rate is not significantly different from the White non-Hispanic rate, according to our statistical testing.

While the ACS produces more timely (than waiting every ten years for the results from the Census long form) data, by far the most significant negative aspect of the ACS as a replacement for the long form is the lack of good data for smaller geographic areas. However, one should consider that many areas, such as small rural communities and established neighborhoods in large cities, change very slowly over time. Therefore, a five year average "snapshot" of an area, even with a relatively large margin of error, can still be of great value in determining the economic and demographic characteristics of the population in a community.

Percent of Population with Income in the past 12 months below poverty level:
 American Community Survey, 2006 to 2010
 New Hampshire Population at or below the poverty level

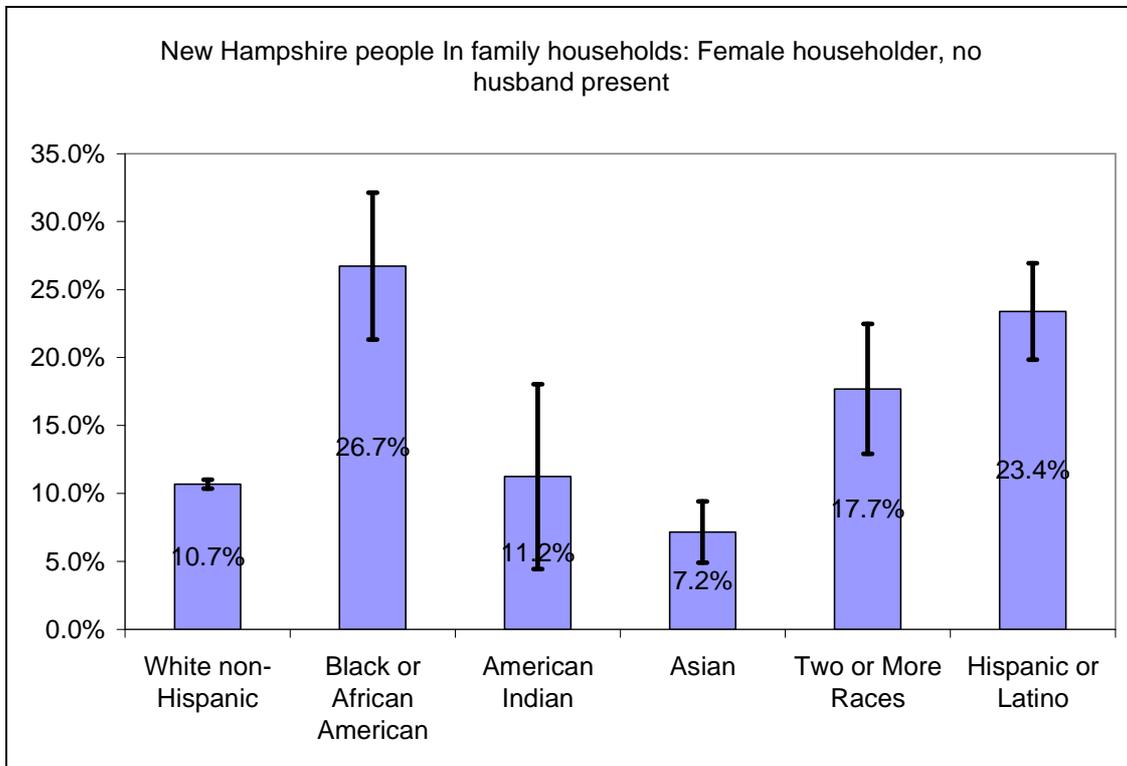


If the 90 percent confidence intervals do not overlap, then the difference is definitely statistically significant⁵³. In the case of poverty the Black or African-American poverty rate and the Hispanic or Latino poverty rate are statistically significant from the White non-Hispanic poverty rate at the 90 percent confidence interval, because the confidence intervals for these estimates do not overlap.

	Population	MOE	Poverty	MOE	Margin of Error	Range Low	Range High
State Total	1,273,957	577	99,527	3,228	7.8%	0.3%	7.6% 8.1%
White non-Hispanic	1,204,811	1,713	89,643	3,115	7.4%	0.3%	7.2% 7.7%
Black or African American	13,063	615	3,164	618	24.2%	4.6%	19.6% 28.8%
American Indian	2,679	394	435	186	16.2%	6.5%	9.7% 22.8%
Asian	26,749	583	2,523	630	9.4%	2.3%	7.1% 11.8%
Two or More Races	16,626	1,025	2,046	406	12.3%	2.3%	10.0% 14.6%
Hispanic or Latino	33,730	286	5,331	921	15.8%	2.7%	13.1% 18.5%

⁵³ The flip side of this “rule of thumb” is not necessarily true. That is, confidence intervals that overlap do NOT necessarily indicate that there is no statistically significant difference.

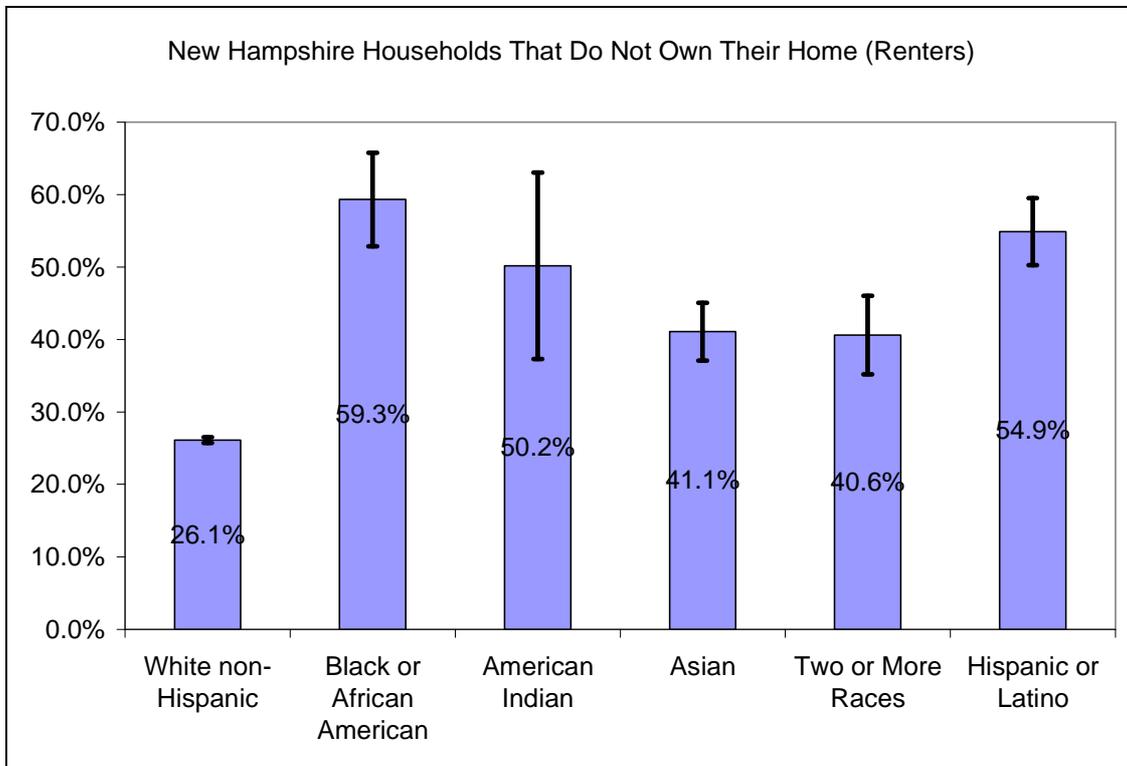
New Hampshire people in family households: Female householder, no husband present
 American Community Survey, 2006 to 2010
 New Hampshire Households in Female Households, No Husband



If the 90 percent confidence intervals do not overlap, then the difference is definitely statistically significant.

	Total Pop in HH	MOE	Single Female HH	MOE	Calculated			
					Rate	MOE	Range Low	Range High
White non-Hispanic	1,196,836	1,920	127,678	3,951	10.7%	0.3%	10.3%	11.0%
Black or African American	11,676	923	3,121	677	26.7%	5.4%	21.3%	32.1%
American Indian	2,723	514	306	194	11.2%	6.8%	4.4%	18.0%
Asian	24,095	757	1,723	544	7.2%	2.2%	4.9%	9.4%
Two or More Races	11,523	1,090	2,038	583	17.7%	4.8%	12.9%	22.5%
Hispanic or Latino	28,160	1,101	6,585	1,032	23.4%	3.5%	19.8%	26.9%

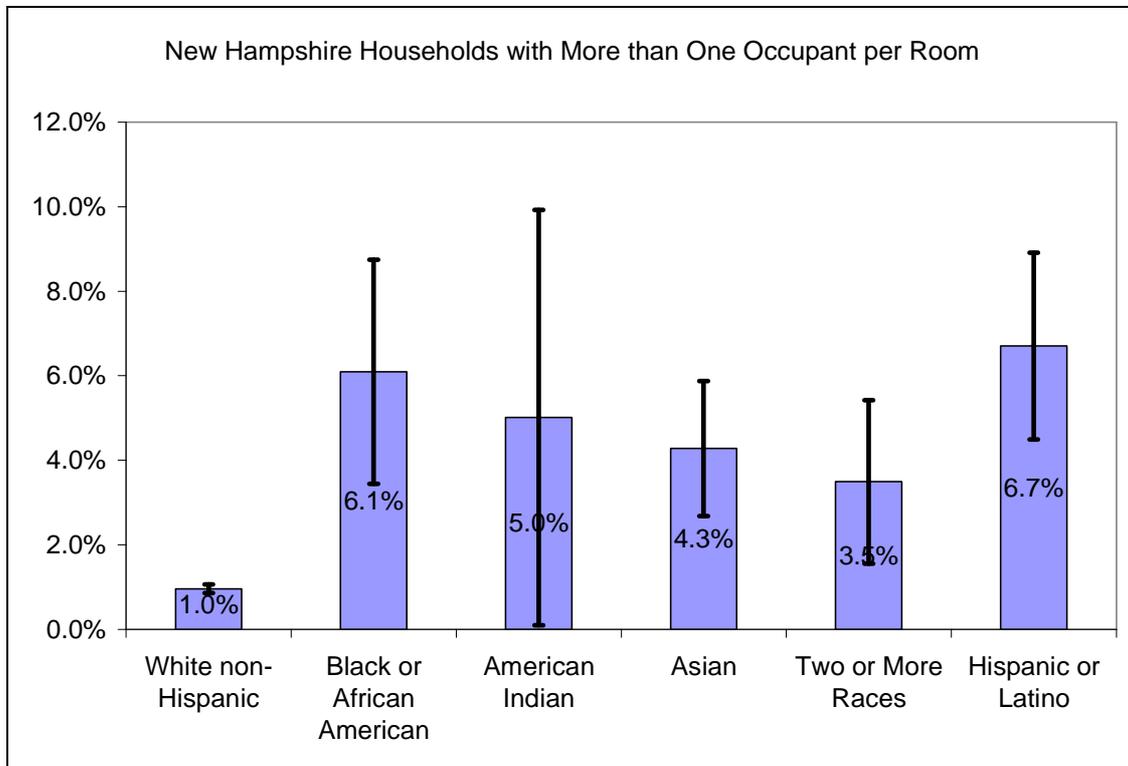
Home Ownership
 American Community Survey, 2006 to 2010
 New Hampshire Households by Tenure (Owners/Renters)



If the 90 percent confidence intervals do not overlap, then the difference is definitely statistically significant.

	Total HH	MOE	Renters	MOE	Calculated			
					Rate	MOE	Range Low	Range High
White non-Hispanic	486,047	2,064	126,866	1,957	26.1%	0.4%	25.7%	26.5%
Black or African American	4,383	326	2,600	343	59.3%	6.5%	52.9%	65.8%
American Indian	1,178	228	591	190	50.2%	12.9%	37.3%	63.0%
Asian	8,446	409	3,469	377	41.1%	4.0%	37.1%	45.1%
Two or More Races	4,443	411	1,804	292	40.6%	5.4%	35.2%	46.0%
Hispanic or Latino	9,491	392	5,209	488	54.9%	4.6%	50.3%	59.5%

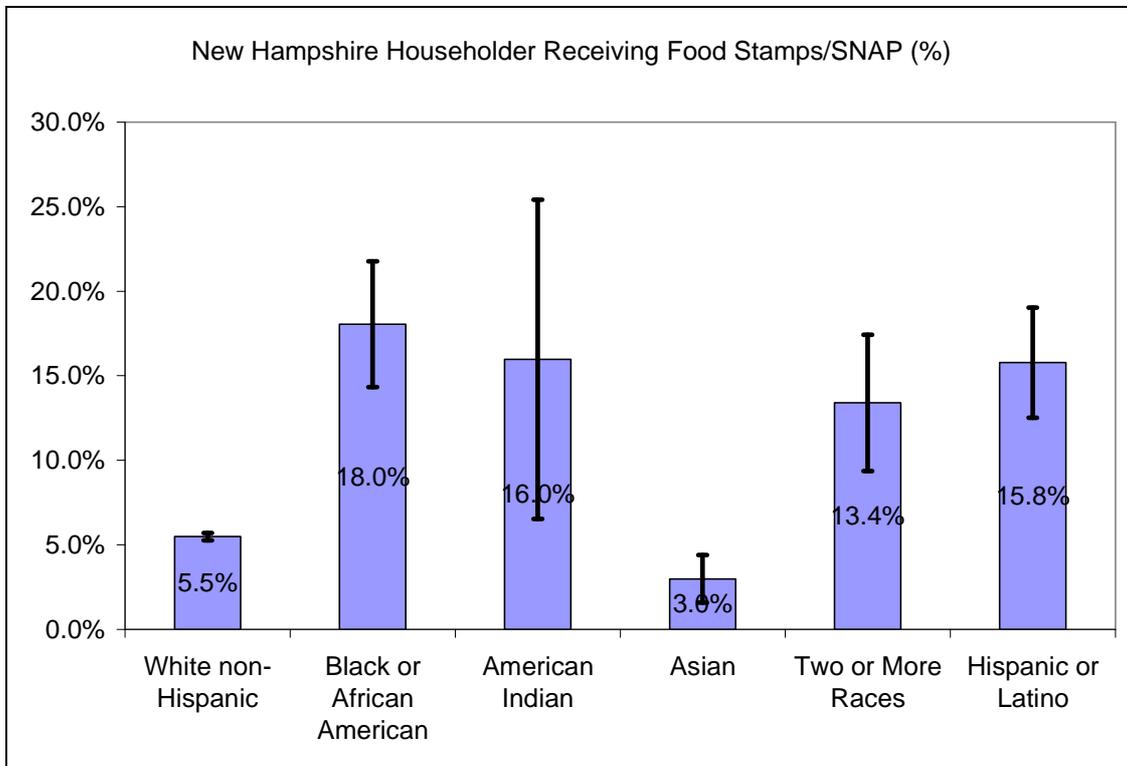
Over Crowding (More than One Person per Room)
 American Community Survey, 2006 to 2010
 New Hampshire Households by Number of Occupants per Room



If the 90 percent confidence intervals do not overlap, then the difference is definitely statistically significant.

	Total HH	MOE	Total: 1.01 or more occupants per room		Calculated			
			MOE	Rate	MOE	Range Low	Range High	
White non-Hispanic	486,047	2,064	4,645	492	1.0%	0.1%	0.9%	1.1%
Black or African American	4,383	326	267	118	6.1%	2.7%	3.4%	8.7%
American Indian	1,178	228	59	59	5.0%	4.9%	0.1%	9.9%
Asian	8,446	409	361	136	4.3%	1.6%	2.7%	5.9%
Two or More Races	4,443	411	155	87	3.5%	1.9%	1.6%	5.4%
Hispanic or Latino	9,491	392	636	211	6.7%	2.2%	4.5%	8.9%

Household received Food Stamps/SNAP in the past 12 months:
 American Community Survey, 2006 to 2010
 New Hampshire Householder Receiving Food Stamps/SNAP (percent)



If the 90 percent confidence intervals do not overlap, then the difference is definitely statistically significant.

	Total HH	MOE	SNAP	MOE	Rate	Calculated MOE	Range Low	Range High
White non-Hispanic	486,047	2,064	26,597	1,073	5.5%	0.2%	5.3%	5.7%
Black or African American	4,383	326	791	173	18.0%	3.7%	14.3%	21.8%
American Indian	1,178	228	188	117	16.0%	9.4%	6.5%	25.4%
Asian	8,446	409	252	119	3.0%	1.4%	1.6%	4.4%
Two or More Races	4,443	411	595	187	13.4%	4.0%	9.4%	17.4%
Hispanic or Latino	9,491	392	1,497	316	15.8%	3.3%	12.5%	19.0%

Deriving New Margins of Error

New Margins of Error (for the poverty rate, etc.) on the preceding tables are calculated according to the following formula:

$$\frac{\sqrt{(\text{MOE}_{\text{num}})^2 - p^2 * (\text{MOE}_{\text{den}})^2}}{X_{\text{den}}}$$

Where:

$$p = \frac{X_{\text{num}}}{X_{\text{den}}}$$

And

MOEnum: Margin of Error of the numerator

MOEden: Margin of Error of the Denominator

Xnum: Numerator

Xden: Denominator

Public Health Data

The New Hampshire Behavioral Risk Factor Surveillance System (BRFSS) is a national system of state based health surveys under the Centers for Disease Control (CDC). The BRFSS in New Hampshire is administered by the New Hampshire Department of Health and Human Services.

Information for the BRFSS is collected by telephone interview from adults aged 18 or older living in the community with telephones. (After 2009, cellular telephones were included with land line phones.) The survey does not include residents of institutions such as nursing homes, hospitals, prisons, and also excludes households with no telephones (2 percent to 3 percent of adults). In 2005, the New Hampshire BRFSS sampling plan was modified and the sample size increased to allow reliable estimates for the 10 New Hampshire counties, Manchester and Nashua. The New Hampshire BRFSS sample size is approximately 6,000 adults, who are asked approximately 120 questions on approximately 23 topics.

According to the CDC, the procedures for estimating variances given in most statistical texts and the programs available in most statistical software packages are based on the assumption of simple random sampling. The data collected in the BRFSS are obtained through a complex sample design; therefore, the direct application of standard statistical analysis methods for variance estimation and hypothesis testing may yield misleading results.

Although the overall number of persons in the BRFSS is quite large for statistical inference purposes, subgroup analyses can lead to estimators that are unreliable. Consequently, analysis of subgroups, especially within a single data year or geographic area, requires that the user pay particular attention to the subgroup sample size. Small sample sizes may produce unstable estimates.

Another potential source of imprecision is associated with a telephone survey itself. Compared with in-person interviewing techniques, telephone interviews are easy to conduct and monitor, and cost efficient. However, telephone interviews have limitations. Telephone surveys may have higher levels of non-coverage than in-person interviews because a percentage of U.S. households cannot be reached by telephone.

Finally surveys based on self-reported information may be less accurate than those based on physical measurements. For example, respondents are known to underreport their own weights. Although this type of potential bias is an element of both telephone and in-person interviews, it should be considered by the analyst interpreting self-reported data.

We requested the Bureau of Public Health Statistics and Informatics New Hampshire Division of Public Health Services run a summary of the BRFSS for selected questions and minority groups. As expected, the sample sizes for other than white non-Hispanic are small. Comparison with the Census results indicates that the new 2011 BRFSS

methodology (which includes sampling from cell phones) is a bit better at representing the NH adult population. According to the statisticians that work with the BRFSS, that much is encouraging, since that was a key objective anyway.

Race/ethnicity	BRFSS 2006-2010		BRFSS 2011		2010 Census, age 18 and older	
	Unweighted frequency	Weighted percentage	Unweighted frequency	Weighted percentage	Total	Percent
White only, non-Hispanic	29,238	94.6	5,940	93.3	962,931	93.6
Black only, non-Hispanic	146	0.7	36	0.7	9,436	0.9
Asian only, non-Hispanic	249	1.3	55	1.0	20,822	2.1
Native Hawaiian or other Pacific Islander only, non-Hispanic	25	0.1	3	0.1	264	0.0
American Indian or Alaskan Native only, non-Hispanic	207	0.7	45	0.8	2,124	0.2
Other race only, non-Hispanic	115	0.4	62	1.0	1,237	0.1
Multiracial, non-Hispanic	237	0.7	39	0.8	9,488	0.9
Hispanic, any race	353	1.6	88	2.3	22,934	2.2
Total	30,570	100.0	6,268	100.0	1,029,236	100.0
Other non-Hispanic	979		240		43,371	

The Centers for Disease Control (CDC) reliability criterion is a coefficient of variation not exceeding 30 percent. The following tables show the results for both survey summaries.

New Hampshire BRFSS 2011					
Indicator	Subpopulation	Percent	Lower 95% CI	Upper 95% CI	CV
Current smoking	White non-Hispanic	19.0	17.5	20.4	4.0
	Other non-white, non-Hispanic	30.4	22.2	38.6	13.8
	Hispanic	25.5	10.8	40.2	29.5
No personal health care provider	White non-Hispanic	12.2	10.9	13.4	5.3
	Other non-white, non-Hispanic	23.8	16.1	31.5	16.4
	Hispanic	27.3	11.8	42.8	29.0
Could not see doctor due to cost	White non-Hispanic	14.4	13.0	15.7	4.9
	Other non-white, non-Hispanic	23.8	16.8	30.7	14.9
	Hispanic	29.6	13.3	46.0	28.1
No health insurance coverage	White non-Hispanic	12.9	11.6	14.2	5.1
	Other non-white, non-Hispanic	17.9	11.5	24.4	18.4
	Hispanic	28.4	13.3	43.5	27.2
No health insurance coverage, under age 65	White non-Hispanic	15.5	13.9	17.1	5.2
	Other non-white, non-Hispanic	20.0	12.7	27.3	18.6
	Hispanic	30.3	14.3	46.3	26.9
Binge drinking	White non-Hispanic	18.9	17.3	20.5	4.4
	Other non-white, non-Hispanic	13.7	7.8	19.6	21.9
	Hispanic	25.2	11.2	39.3	28.5
Heavy drinking	White non-Hispanic	7.9	6.9	9.0	6.8
	Other non-white, non-Hispanic	6.2	1.6	10.7	37.5
	Hispanic	11.9	0.0	24.9	55.6
Obese	White non-Hispanic	26.5	24.9	28.0	3.0
	Other non-white, non-Hispanic	22.9	15.8	30.1	15.9
	Hispanic	22.6	8.6	36.7	31.7
Told have diabetes	White non-Hispanic	8.5	7.7	9.3	4.9
	Other non-white, non-Hispanic	9.5	5.3	13.8	22.8
	Hispanic	11.6	3.3	19.8	36.5
14 or more bad physical health days in past 30	White non-Hispanic	11.6	10.5	12.6	4.7
	Other non-white, non-Hispanic	15.4	9.3	21.5	20.1
	Hispanic	10.2	2.0	18.4	41.0
14 or more bad mental health days in past 30	White non-Hispanic	11.4	10.2	12.5	5.2
	Other non-white, non-Hispanic	19.4	12.6	26.2	18.0
	Hispanic	36.8	20.0	53.7	23.3

As shown in the above table 2011 results could be considered unreliable for non White heavy drinking, Hispanic obesity, Hispanic diabetes, and Hispanic bad physical health days.

New Hampshire BRFSS 2006-2010					
Indicator	Subpopulation	Percent	Lower 95% CI	Upper 95% CI	CV
Current smoking	White non-Hispanic	17.5	16.8	18.1	1.8
	Other non-white, non-Hispanic	21.6	17.9	25.3	8.7
	Hispanic	21.4	15.2	27.5	14.7
No personal health care provider	White non-Hispanic	10.7	10.2	11.3	2.6
	Other non-white, non-Hispanic	18.5	14.8	22.1	10.1
	Hispanic	14.1	9.1	19.2	18.3
Could not see doctor due to cost	White non-Hispanic	10.0	9.5	10.5	2.6
	Other non-white, non-Hispanic	18.2	14.9	21.6	9.4
	Hispanic	16.4	11.0	21.9	16.8
No health insurance coverage	White non-Hispanic	10.8	10.3	11.4	2.6
	Other non-white, non-Hispanic	17.5	14.1	20.8	9.8
	Hispanic	18.5	12.6	24.4	16.3
No health insurance coverage, under age 65	White non-Hispanic	12.8	12.1	13.6	3.0
	Other non-white, non-Hispanic	18.6	14.7	22.6	10.8
	Hispanic	16.8	10.4	23.2	19.4
Binge drinking	White non-Hispanic	15.7	15.1	16.4	2.2
	Other non-white, non-Hispanic	11.4	8.3	14.6	13.9
	Hispanic	19.7	12.6	26.9	18.5
Heavy drinking	White non-Hispanic	5.9	5.5	6.3	3.4
	Other non-white, non-Hispanic	4.5	2.5	6.5	23.1
	Hispanic	8.1	2.8	13.4	33.5
Obese	White non-Hispanic	25.1	24.4	25.8	1.4
	Other non-white, non-Hispanic	22.8	19.2	26.5	8.1
	Hispanic	28.3	21.6	34.9	12.0
Told have diabetes	White non-Hispanic	7.4	7.0	7.7	2.4
	Other non-white, non-Hispanic	8.2	6.4	10.0	11.3
	Hispanic	8.1	4.0	12.2	25.6
14 or more bad physical health days in past 30	White non-Hispanic	9.4	9.0	9.8	2.2
	Other non-white, non-Hispanic	11.2	9.0	13.4	10.1
	Hispanic	10.6	6.4	14.8	20.2
14 or more bad mental health days in past 30	White non-Hispanic	9.2	8.7	9.7	2.5
	Other non-white, non-Hispanic	12.1	9.2	14.9	11.9
	Hispanic	11.3	6.8	15.8	20.2

As shown in the above table 2006-2010 average results could be considered unreliable only for Hispanic heavy drinking.