

COMMUNITY WELL-BEING IN THE MONADNOCK REGION

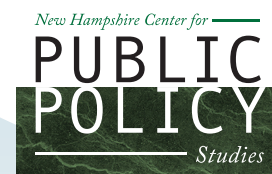


NEW HAMPSHIRE
CHARITABLE FOUNDATION

MONADNOCK REGION



Monadnock United Way



OCTOBER 2012

ABOUT THIS REPORT

This assessment of the determinants of social well-being and community needs in the Monadnock Region of New Hampshire was conducted by the New Hampshire Center for Public Policy Studies at the request of the Monadnock United Way and the New Hampshire Charitable Foundation Monadnock Region and was underwritten by those organizations.

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MONADNOCK REGION COMMUNITY WELL-BEING ASSESSMENT GOALS

- Use data to identify major trends and community needs in the Monadnock region.
- Identify evidenced-based solutions to address these foundational needs.
- Explore a systems approach to address community foundational needs at the root cause.

HOW DOES THE MONADNOCK REGION FARE?

Determinants of Well-Being based on statewide data review

CATEGORY	POSITIVES	NEGATIVES – Issues that need to be addressed
Education		<ul style="list-style-type: none"> • Graduation rates are lower than some rural areas in state • Proficiency in Math and Reading is low • Teacher educational attainment lower
Income	<ul style="list-style-type: none"> • Average poverty rate for children • Income disparity increasing as poverty rate increases and median wage increases 	<ul style="list-style-type: none"> • Higher rate of single parent families • Lower Income • Lower wages relative to livable wage • Poverty rate for seniors higher
Healthcare	<ul style="list-style-type: none"> • About average health care status, access to services 	
Housing	<ul style="list-style-type: none"> • Housing is relatively affordable 	<ul style="list-style-type: none"> • High levels of homelessness • Evidence of overcrowding exists • Property tax rates are high
Environment	<ul style="list-style-type: none"> • Number of Ozone days low • Particulate matter high, though asthma rates are lower • Significant conservation of open space (2nd only to North Country) • Connecticut Valley waters average quality 	
Economic Opportunity	<ul style="list-style-type: none"> • Number of vehicles per worker average • Commute times are average 	<ul style="list-style-type: none"> • Manufacturing is declining • Many retail and healthcare jobs don't pay a livable wage
Behaviors		<ul style="list-style-type: none"> • Drug and Alcohol use among children is higher than average • Teen birth rate is higher than average
Civic Engagement	<ul style="list-style-type: none"> • Charitable giving lower to moderate • Voter participation moderate 	
Safety and Security	<ul style="list-style-type: none"> • Crime is relatively low and declining 	<ul style="list-style-type: none"> • Child maltreatment is high

Monadnock Region averages compared to the rest of New Hampshire.

Monadnock Region Community Needs Assessment conducted by the NH Center for Public Policy Studies nhpolicy.org

PROJECT BACKGROUND

The goal of the community needs assessment conducted by New Hampshire Center for Public Policy Studies for the Monadnock United Way and the New Hampshire Charitable Foundation Monadnock Region was to provide community leaders with a firm understanding of the gaps between the current state of community well-being and what might be desirable in the region. Our work was structured to meet their stated goal of creating a *data-based needs assessment that will identify important community needs and guide decisions for funding of programs best positioned to fill those needs.*¹

This analysis provides interested parties with a data set that will assist them to understand how the Monadnock Region fares in nine domains (and 153 measures within those domains) measuring various aspects of community well-being. The domains include:

- Education
- Economy
- Economic opportunity
- Healthcare
- Housing
- Environment
- Health behaviors
- Civic engagement
- Safety and security

Where possible, data used for this analysis of the Monadnock Region was based on prior community needs assessment work (including Vision 2020 and Kids Count). In addition, data for the Monadnock Region was compared to the state average, which served as a benchmark. A technical advisory committee (See Appendix 1) comprised of community leaders from the region served as a sounding board and helped guide the data collection and analysis process over the course of the project.

While many needs assessments focus solely on measuring the potential areas of need in the community, this assessment is designed to be different in two important ways. First, community needs assessments are often created as silos, separating economic, health and behavioral issues, all of which affect the well-being of citizens in interrelated ways. Our approach in this analysis of community needs was based on the social determinants of health, which is a more integrated approach.

Second, this model accounts for the fact that structural factors – which may or may not lend themselves to action – can have an important impact on health and well-being. These structural factors include social variables such as 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 stigma.”²

Third, the assessment included the provision of solutions to the problems identified in the first phases of our analysis. To do this, we uncovered two resources that have identified rigorously tested programs in other parts of the country that have made demonstrated impacts on community needs that are issues in the Monadnock Region.

As noted, we looked at an extensive range of data to conduct this analysis. The data sets used are available upon request from the Center. The major findings from our analysis of the social determinants of community well-being in the Monadnock Region are presented in the following pages.

¹ Monadnock United Way and New Hampshire Charitable Foundation Request for Proposal, 2011

² 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.

DEMOGRAPHICS

Like New Hampshire in general, the Monadnock Region is in a period of significant demographic change. Over the past 30 years the region has experienced a net in-migration of baby-boomers. However, this pattern has stalled, and the region began seeing net-outmigration since just prior to the beginning of the Great Recession in 2008.

This decline in in-migration, combined with the aging of Baby Boomers already living here, means that the Monadnock region's demographic profile will begin to quickly age. At the same time, the number of children in the area will continue to fall. Both trends have implications for the community, and raise important questions about policy focus.

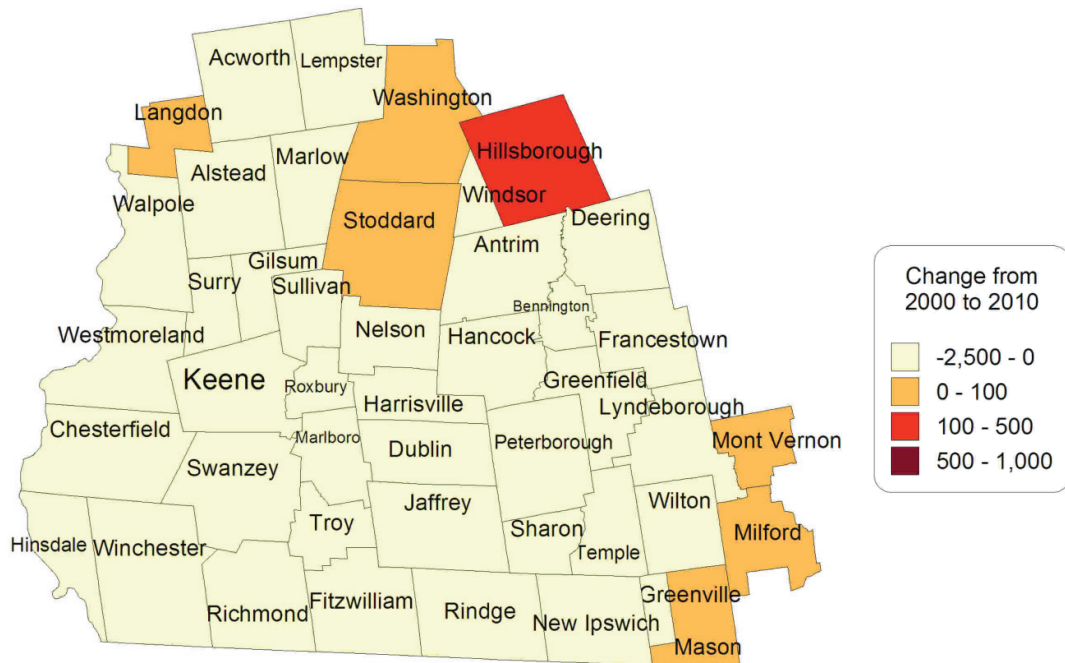
One of the implications of New Hampshire's changing demographics is the decline in the school-aged population.

Only 5 Monadnock Region communities saw an increase in the number of children between 2000 and 2010 – Langdon, Stoddard, Mason, Milford, Mont Vernon, Washington and Hillsborough.

The rest of the communities in the Monadnock Region experienced a decline in the number of children.

Figure 1: The declining number of children in Monadnock Region

NH School Age Population Change by Town, 2000 to 2010



Source: US Census Bureau

FOUNDATIONAL COMMUNITY NEEDS

We identified three foundational areas of community need in the Monadnock Region across the nine domains of the social determinants of health reviewed in this analysis: economic opportunity, education and child welfare.

Declining Economic Opportunity

As shown in Figure 2, the Monadnock Region is losing high-paying jobs in manufacturing and other industries.

Moreover, average wages here (Figure 3) are low when compared to calculations for a “livable” wage (\$18 per hour), in the region. In fact, Cheshire County ranks second lowest in the state in this regard.

With respect to healthcare jobs – one of the only sources of job growth both in the state and the Monadnock Region – wages in Cheshire County, as a share of the livable wage for a single parent with a child, are the lowest of all counties in the state.

Figure 2: Job growth by major industry

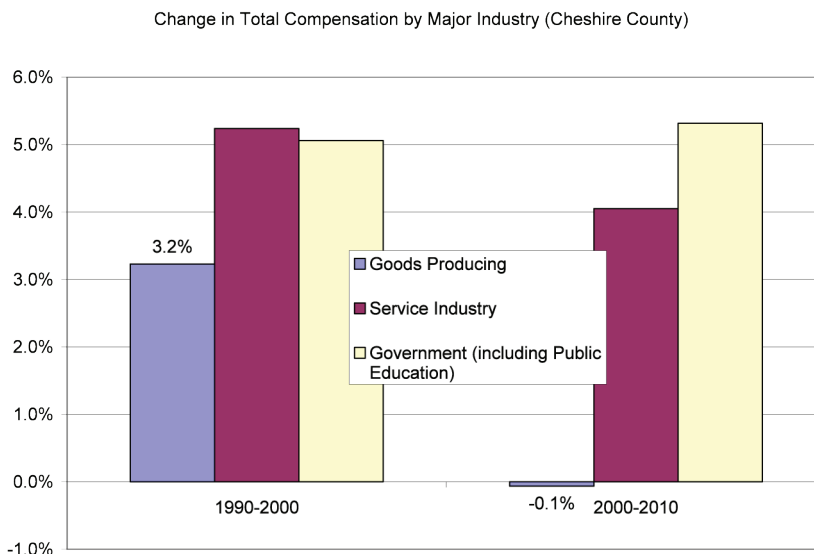
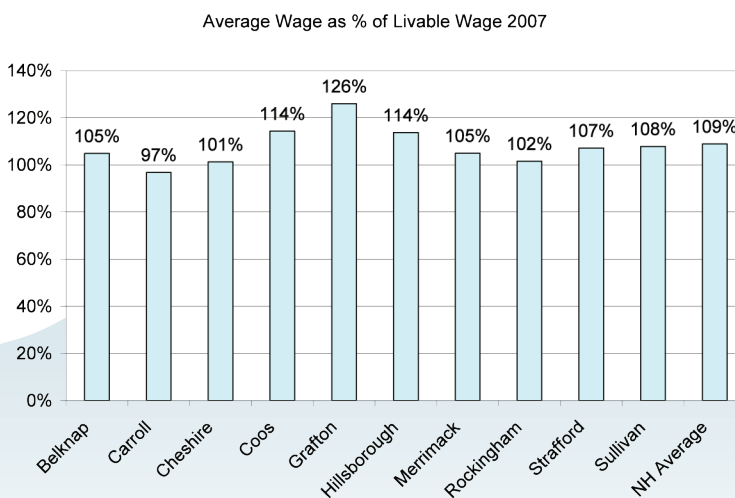


Figure 3: Average wage as a percent of livable wage by county (2007)



Low Educational Attainment

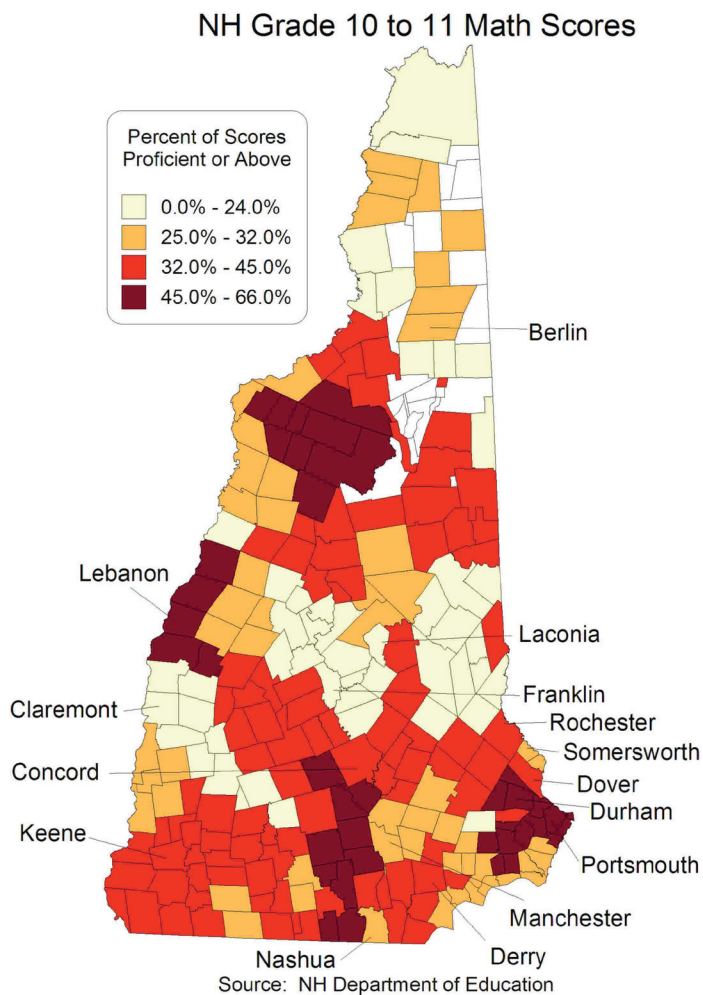
The levels of educational attainment in the Monadnock Region are low compared to the state as a whole and are lower than the project’s technical advisory committee expected to see.

Across three measures – graduation rates in 2011, and math and reading scores for grades 10 and 11 – students in Monadnock communities generally scored below the top 25% of the rest of the state.

As an example, the map below shows the percentage of

each community with grades 10 and 11 math scores “proficient” or above. (Reflecting a four-part scale: substantially below proficient; partially proficient; proficient; proficient with distinction.) No community in the Cheshire County area broke into the top quartile.

These economic and educational factors underlie other community issues identified in the review of the data and other community needs assessments conducted in the Monadnock Region, including Vision 2020.



Monadnock Region Foundational Needs

- Economic opportunity for families (based on analyses of livable wages)
- Educational attainment (and a number of downstream issues, such as teen pregnancy and substance abuse)
- Child welfare (based on measures of child maltreatment)

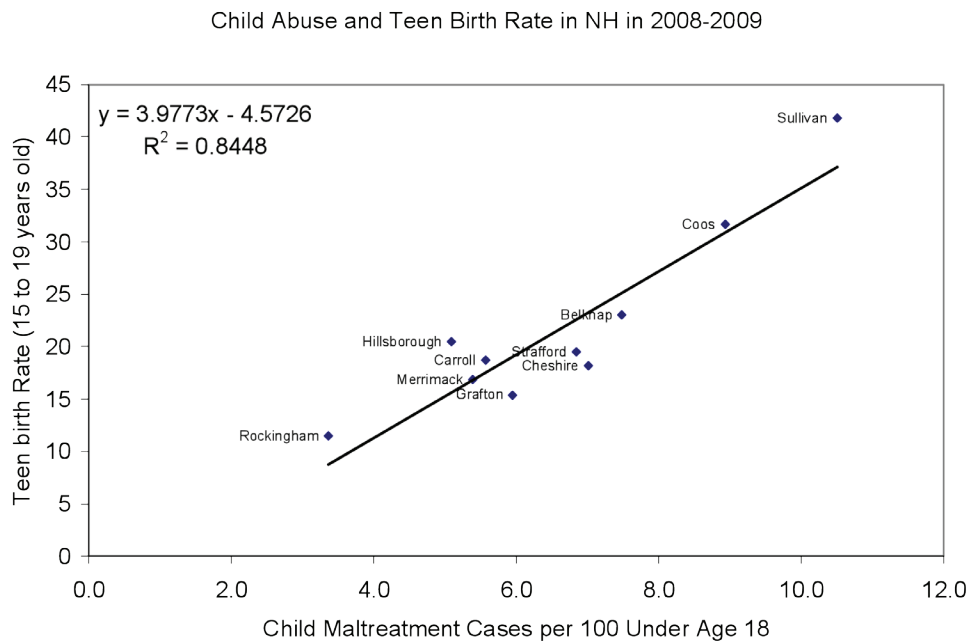
Child Welfare

Educational attainment, child welfare and economic opportunity tend to cycle together. A higher rate of female teens in school correlates with lower teen pregnancy rates, which itself has a correlation with increased levels of child abuse.

Social science research has found that single women with lower levels of educational attainment tend to engage in higher levels of child abuse, and that that women who stay in school tend not to become teen mothers or bear children out of wedlock.

It makes sense. If children are safe at home and are successful in school they tend to be more successful later on in both family life and in work. And the relationship of these factors is cyclical over generations.

As the chart below indicates, in Cheshire County, the cumulative rate of teen births and child maltreatment is higher than all but three counties in the state.



THE GEOGRAPHY OF COMMUNITY WELL-BEING

Not surprisingly, certain areas of the Monadnock Region have significantly higher community needs than others.

The Center developed a Monadnock Community Well-Being Index – which tracks a series of socio-economic indicators and is described in Appendix 3 – identified Hillsborough, Deering, Antrim, Milford, Greenville, Jaffrey, Troy, Swanzey, Keene, Hinsdale and Winchester as high-need areas.

Of these communities, Winchester and Hillsborough had the highest share of their populations in need.

This geographic variation could provide the philanthropic community with an opportunity to focus on an individual community where needs are high and the potential for return on investment is likewise higher.

In the map below, we combine a series of indicators associated with socio-economic conditions to graphically portray the comparative need of communities in the Monadnock Region.

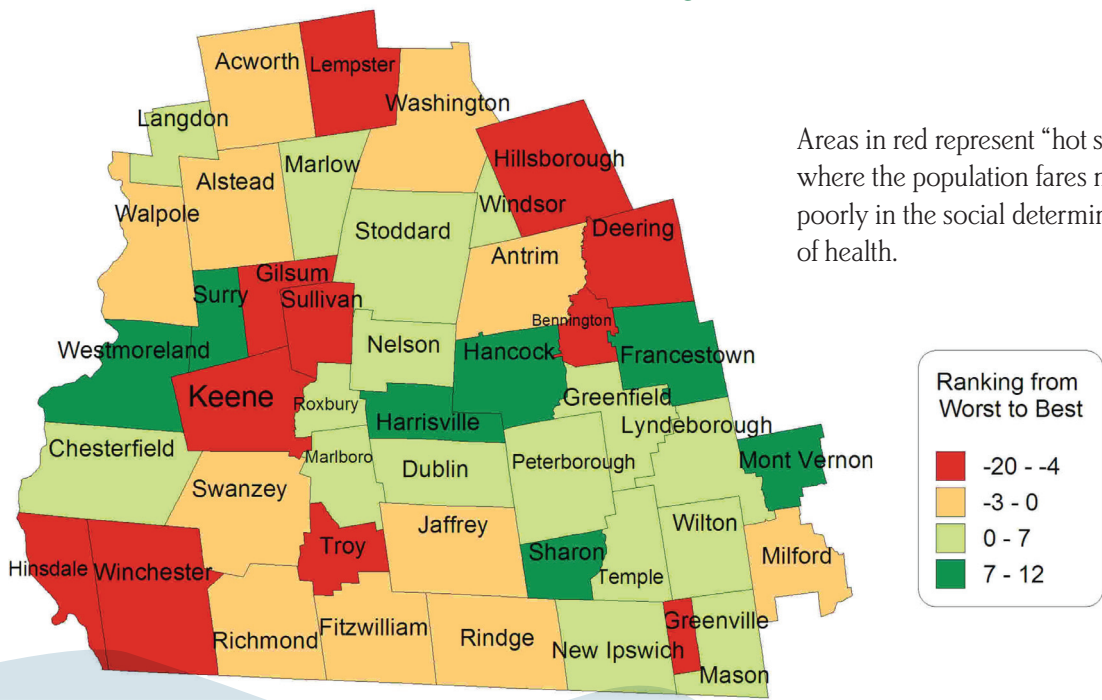
This includes 7 indicators associated with income, 3 factors associated with educational attainment, and individual measures tracking housing and civic engagement.

It is important to note that this is not the only configuration of indicators that could be used to analyze community need in the Monadnock Region. Our purpose was to provide local policy makers, community leaders, non-profit organizations and others with a tool to understand the geographic aspect of need across the Monadnock Region.

In the map, areas in red are in the bottom quintile of Monadnock Region communities with respect to these measures of need. That is, these communities – Hinsdale, Winchester, Troy, Keene, Gilsom, Sullivan, Lempster, Hillsborough, Deering, Bennington, and Greenville – all rank poorly on the socio-economic index the Center developed.

Westmoreland, Surry, Harrisville, Hancock, Frankestown, Mont Vernon and Sharon fair the best in terms of the amount of need in their communities as measured by this index.

MUW Socio Economic Ranking



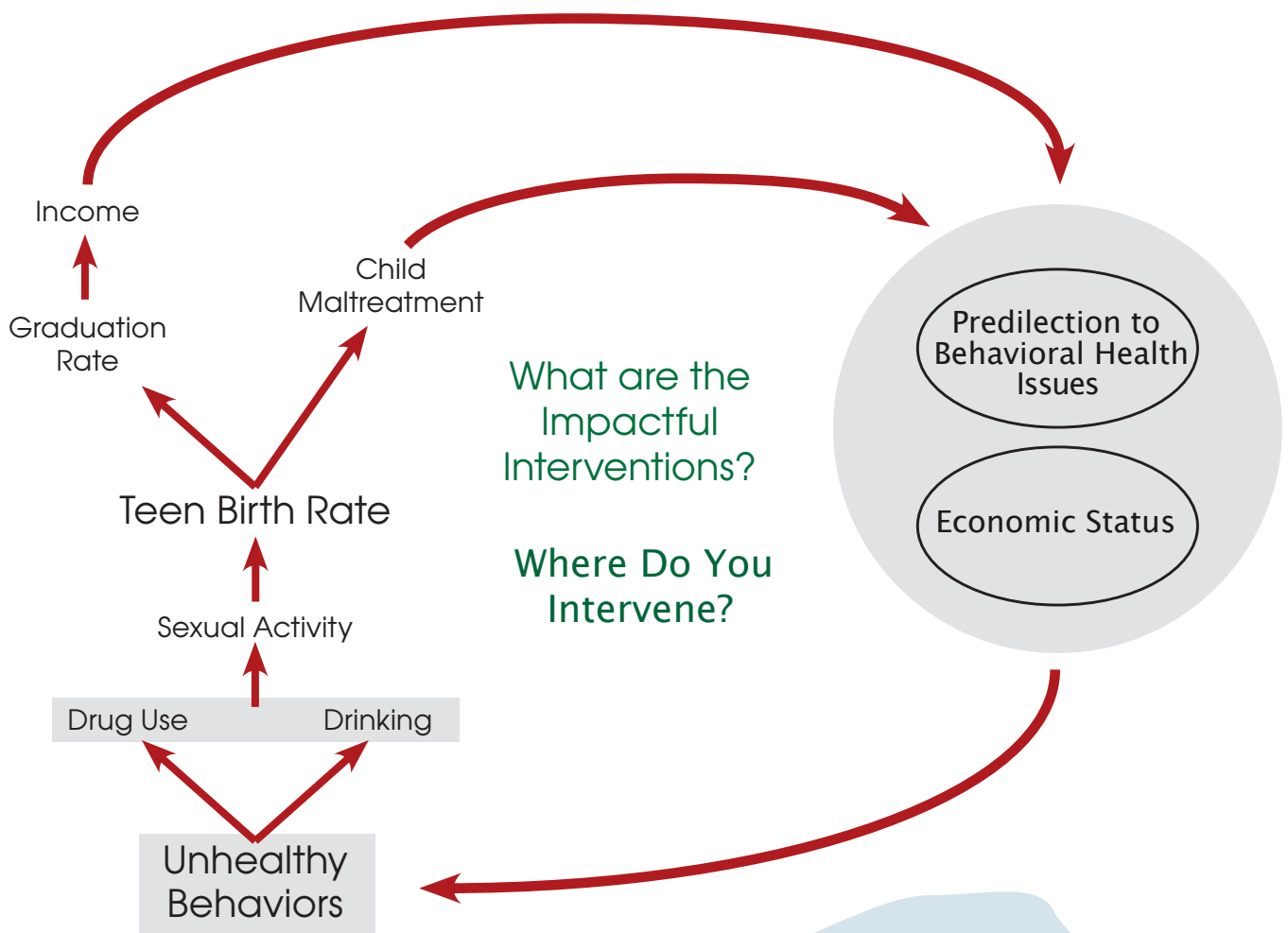
Source: NHCPPS Analysis of Town Data

UNHEALTHY BEHAVIORS

The correlations between education and income and a variety of community needs including high levels of homelessness, substance use, teen births, and child maltreatment in the Monadnock Region are well documented in the literature and described graphically

in the figure below. Efforts designed to significantly impact these issues in the Monadnock Region will have to address the two underlying structural factors that cause them: low education and declining economic opportunity.

The System Intervention approach



Monadnock Region Community Needs Assessment conducted by the NH Center for Public Policy Studies nhpolicy.org

EVIDENCED-BASED SOLUTIONS

Across the country, there is a growing effort to focus on policies that have a demonstrated ability to influence outcomes of interest. Impact Evaluation, as it is called, helps answer key questions for evidence-based policy making: what works, what doesn't, where, why and for how much? This approach has received increasing attention in policy making.³

In this project, the Center took advantage of two initiatives designed to provide policymakers with tested programs showing significant impact on community needs: "Top Tier Evidence"⁴ and "Results First."⁵ Both initiatives have developed rigorous methods to assess the ability of programs to impact public policy problems.

The Center reviewed these program initiatives in light of the needs identified in the Monadnock Region and identified a menu of programs that have been proven effective at mitigating the outcomes of interest and/or have been shown to be cost-effective solutions to problems. Of note, we included in this review, only those that were identified as being the most effective at reaching goals.

Child welfare

Programs shown to have the most significant positive impact on child welfare outcomes included:

- SafeCare – a parent-training curriculum for parents who are at-risk or have been reported for child maltreatment
www.wsipp.wa.gov/rptfiles/3900.SafeCare.pdf
- Alternative Response – referral to Child Protective Services that is an alternative to a traditional investigation
www.wsipp.wa.gov/rptfiles/3900.AltResponse.pdf
- Triple P Positive Parenting – increasing the skills and confidence of parents to prevent the development of serious behavioral and emotional problems in their children
www.wsipp.wa.gov/rptfiles/3900.TripleP.pdf
- Nurse-Family Partnership – A nurse home visitation program for low-income, pregnant women impacting child maltreatment, subsequent births, and children's educational outcomes
www.toptierevidence.org/wordpress/?page_id=168

³ Briceno, B. and Gaarder, M. (2009) Institutionalizing Evaluation: A review of international experience

⁴ For a review of the Top Tier Methods, see www.toptierevidence.org/wordpress/. Top Tier is a national initiative designed to help support legislators make good informed investments in programs with demonstrated success.

⁵ For a review of the Results First initiative, see www.pewstates.org/projects/results-first-328069. Results first is an effort on the part of the Pew Center on the States to support legislators in investing in proven programs.

Educational outcomes

Programs shown to have a positive impact on educational outcomes:

- National Board for Professional Teaching Standards (NBPTS) Certification Bonuses – an advanced teaching credential that complements the state certification process
www.wsipp.wa.gov/rptfiles/2000.NBPTS.pdf
- K-12 Tutoring by Peers – students provide one-on-one assistance to other students struggling to learn to read
www.wsipp.wa.gov/rptfiles/2000.TutorPeer.pdf
- Success for All in grades K-2. A program primarily for high-poverty elementary schools, with a strong emphasis on reading instruction impacting 2nd grade reading ability
www.toptierevidence.org/wordpress/?page_id=178
- Career Academies – Small learning communities in low-income high schools, combining academic and technical/ career curricula through partnership with local employers
www.toptierevidence.org/wordpress/?page_id=176
- Reading Recovery (K-12 Tutoring) – An early literacy tutoring intervention for struggling readers
www.wsipp.wa.gov/rptfiles/2000.ReadingRecovery.pdf
- Early Childhood Education for Low Income 3- and 4-Year Olds
www.wsipp.wa.gov/rptfiles/2000.ECE.pdf

Other issues

Other programs have been identified which have impacted some of the other community needs identified in the Monadnock Region, including teen pregnancy and substance abuse.

- Carrera Adolescent Pregnancy Prevention Program – A year-round youth development program for economically disadvantaged teens with effects on pregnancies and births
www.toptierevidence.org/wordpress/?page_id=172
- LifeSkills Training – A middle-school substance abuse program with effects on smoking and alcohol use
www.toptierevidence.org/wordpress/?page_id=318
- Multidimensional Treatment Foster Care – A foster program for delinquent youth impacting pregnancies
www.toptierevidence.org/wordpress/?page_id=313

If the greater Monadnock community wishes to invest in proven programs designed to meet the structural problems identified in this work, these programs are a good list from which to select a very small number of programs to be fully and successfully implemented.

APPENDIX 1: PROJECT TECHNICAL ADVISORY COMMITTEE

The Monadnock Community Needs Assessment Technical Advisory Committee met periodically to review the Center's findings and to provide feedback on its approach. We appreciate their insight and the time they spent critiquing the project.

Members

Pam Brenner – Administrator, Town of Peterborough

Yvonne Goldsberry – Senior Director of Community Health, Cheshire Medical Center/Dartmouth-Hitchcock Keene

Kathy Harrington – President, Monadnock United Way

Dick Hill – Monadnock United Way Board Member, Retired Executive

John Hoffman – Retired Attorney

John Kieley – Retired Executive, Monadnock Region Advisory Board

John MacLean – City Manager, City of Keene

Katie Merrow – Vice President of Program, New Hampshire Charitable Foundation

Jeff Miller – Retired Executive

Melinda Mosier – Senior Program Officer, New Hampshire Charitable Foundation

Tim Murphy – Executive Director, Southwest Region Planning Commission

Jim Putnam – Retired Executive

Kelly Steiner – Project Director, Monadnock Voices for Prevention

Jack Wozmak – County Administrator, Cheshire County

APPENDIX 2: THE DATA

Benchmarks and Community Needs Assessment

The indicators or measures of the social determinants of health included in this analysis, while interesting by themselves, provide information to policy makers only to the extent that they can be compared to benchmarks or goals. In this work, the indicators for each major content area were compared to a benchmark value, represented by the average of values for the state of New Hampshire. We chose this measure because the New Hampshire experience is generally considered to be favorable across the indicators reviewed, particularly relative to the rest of the country.

Alternative benchmarks, however, could be completely appropriate. Policy makers could assume, for example, that the top five states within each of the domains is an appropriate benchmark for one or all of the indicators (although the data might not be available across all the areas). Other benchmarks, such as the performance of states similar to New Hampshire, or a goal based on the aspirations of the community are equally valid.

The Data Sources

This analysis was designed to provide interested parties with a set of data that allowed them to generally understand the domains within which the community fared well and less well, or poorly. In total, the Center produced information on 153 indicators across all of the domains. Several of the indicators used in this report are based on physical measurements — such as school grade test scores, town property tax rates, or the number of Medicaid recipients in a town. 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 primary sources of data are identified below.

The American Community Survey

Several of the community indicators at the town level, including the percentage of adults, children and seniors in poverty, the number of people per room, household and family income, commuting times, median age of the town residents, 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 US Census Bureau in 2000. The long form was a sample of 1 in 6 households, a very large sample size, encompassing almost 17% 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% 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. www.census.gov/acs/www/methodology/sample_size_data/index.php

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 2005 to 2009, 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.

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 2005–2009 MOEs imply large ranges around the point estimate, when calculating poverty rates at the municipal level in New Hampshire. For example, Center Harbor, New Hampshire has a poverty rate of 8.0%, with a range (calculated from the MOE at the 90 percent confidence interval) of 5.4%. So the range in Center Harbor is 2.6% to 13.4%, which implies that the Center Harbor poverty rate is not statistically different from the state average poverty rate of 7.7%.

Moving to more detailed characteristics of the population, such as moving from the overall poverty rate, to the poverty rate for children and seniors, increases the MOEs, and the range of uncertainty for each community based on the MOEs. Since child or senior poverty is a more detailed characteristic than the poverty rate for the entire population – the range around the point estimate becomes much larger, due to the smaller sample sizes for those populations.

Another situation is where the point estimate for the state rate is outside the confidence range for a town, but the two confidence ranges (there is a confidence range around the state estimate too) overlap. In this situation, one needs to perform a statistical test to see if there is a difference.

While the ACS produces more timely data (than waiting every ten years for the results from the Census long form), 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.

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. Unfortunately the New Hampshire Department of Health and Human Services does not publish the sample size associated with their regional estimates, nor does the department publish the margins of error (MOE) associated with their regional estimates. Therefore we cannot address statistical precision issues directly in this report.

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.

APPENDIX 3: THE GEOGRAPHY OF COMMUNITY WELL-BEING

The Monadnock Community Well-Being Index was constructed based on a series of key indicators that reflect the socio-economic well-being of a community. Factors included in the index are:

- Education: percent of the population over 25 with a B.A. or better
- Education: 2011 high school graduation rate
- Education: elementary school per-pupil expenditures 2009/10
- Economy: 2010 median household income
- Economy: poverty rate
- Economy: households with food stamps
- Economy: Medicaid beneficiaries as a percent per population
- Economy: low to moderate income percent of population
- Economy: rate of child poverty (under 18)
- Economy: poverty rate for those age 65 plus
- Housing: 2011 actual property tax rate
- Civic Engagement: percent voter participation in the last election

The index was created by first converting the municipal numerical values for each of the key indicators into standard scores. Standardization was necessary because the distributions of the measures were quite different from one to another. By standardizing the variables, as described below, we make sure that each measure is given equal weight in the index. Individual rankings for towns in the region are included on page 19.

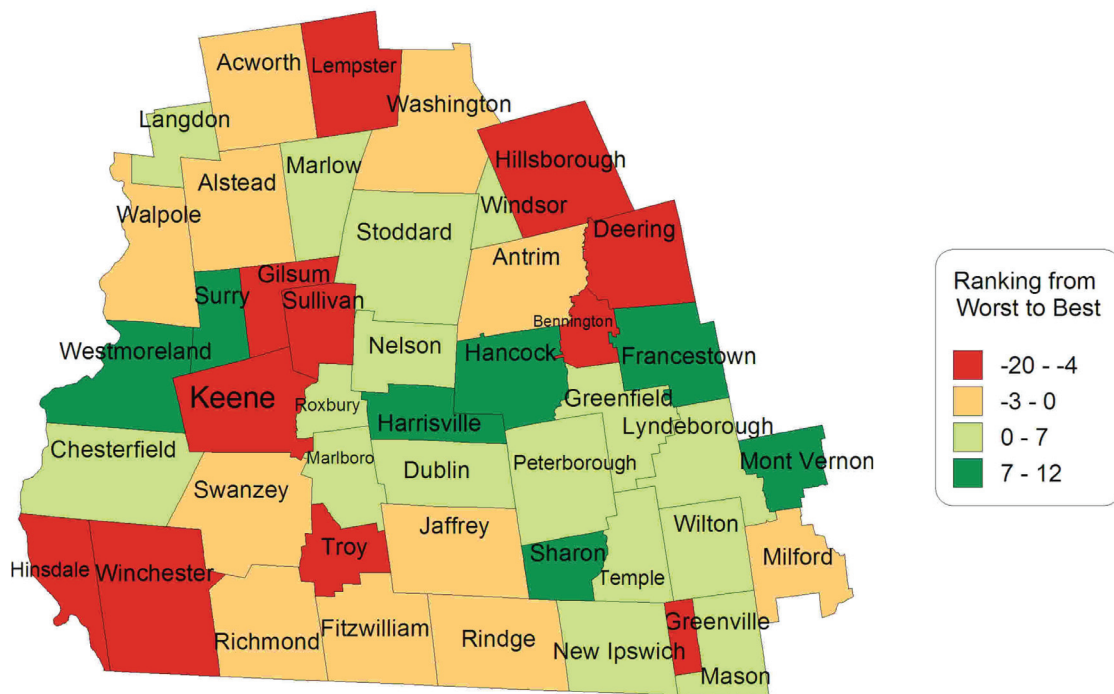
The map on this page shows the relative rankings for the Monadnock Region using this methodology, ranking communities by quartiles.

Based on the above socio-economic factors, Winchester (with a score of -20) is the Monadnock Region community most in need. It has the lowest level of educational attainment in the region (based on the percentage of the adult population with a BA or better), the lowest median income in the region, the highest portion of the population receiving food stamps and on the state Medicaid rolls in the region, one of the highest poverty rates, and the lowest voter participation rate in the region.

Hinsdale (-16) is the second neediest town in the region. Hinsdale has one of the highest portions of its senior population below the poverty level, and also has low levels of voter participation, and high portions of its population on Medicaid and receiving food stamps.

At the other end of the spectrum, Frankestown (+12) is the least needy town in the Monadnock Region. It has high levels of civic engagement (as measured by voter participation), less of its population on Medicaid than the regional average, above regional average educational attainment, median income and high school completion rates.

MUW Socio-Economic Ranking



Source: NHCPPS Analysis of Town Data

Ranking Communities in the Monadnock Region

The overall Monadnock Community Well-Being Index was constructed by first converting the municipal numerical values for each of the key indicators into standard scores. Standardization was necessary because the distributions of the measures were quite different from one to another. By standardizing the variables, as described below, we make sure that each measure is given equal weight in the index.

For each variable, standard scores were derived by subtracting the Monadnock regional average value from the town estimate and dividing that amount by the standard deviation for that distribution of town estimates, as shown in the following formula.

$$Z = \frac{X - \mu}{\sigma}$$

In the formula “x” represents the town estimate, the Greek letter Mu represents the mean across the Monadnock regional values, and the Greek letter Sigma represents the standard deviation:

For each variable where a higher town value is worse (like poverty), the Z score is multiplied by -1. We then summed those standard scores to create a total standard score for each of the towns in the Monadnock Region. Finally, we ranked the towns in the Monadnock Region on the basis of their total standard score in sequential order from lowest/worst to highest/best.

Town by Town Ranking for Monadnock Community Well-Being Index

Needs Improvement		Average or Better	
Community	Overall Score	Community	Overall Score
Winchester	-20.3416	Marlborough	0.158763
Hinsdale	-16.6315	Peterborough	0.39971
Troy	-10.8878	Wilton	1.825077
Greenville	-10.4066	Langdon	1.845809
Hillsborough	-8.47477	Roxbury	1.85239
Sullivan	-7.31423	Marlow	2.287936
Keene	-6.80902	Greenfield	2.905085
Deering	-6.67513	New Ipswich	3.723522
Lempster	-6.46502	Windsor	3.807469
Gilsum	-6.1704	Nelson	3.877128
Bennington	-5.15821	Temple	3.900891
Acworth	-3.18891	Stoddard	4.656655
Alstead	-2.9954	Mason	5.208462
Richmond	-2.98154	Lyndeborough	5.922939
Antrim	-2.96256	Chesterfield	6.108793
Swanzey	-2.77176	Dublin	6.713458
Jaffrey	-2.60296	Westmoreland	7.211698
Washington	-1.64071	Hancock	8.478165
Fitzwilliam	-0.8477	Mont Vernon	9.692903
Walpole	-0.51495	Harrisville	10.44752
Milford	-0.4949	Surry	11.51951
Rindge	-0.38272	Sharon	11.73382
		Fracestown	12.44068

Data sets created by the New Hampshire Center for Public Policy Studies for its analysis of community well-being in the Monadnock Region are available upon request from the Center. Call 603-226-2500 or email info@nhpolicy.org.

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