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MIDDLESEX COUNTY COALITION ON COMMUNITY WELLNESS

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## Community Health Needs Assessment

JULY 2013 MIDDLESEX COUNTY, CONNECTICUT

# Acknowledgements

## Middlesex County Coalition on Community Wellness

This community health needs assessment was prepared by Chatham Health District, who wishes to thank the Middlesex County Coalition on Community Wellness members, community partners, Connecticut Department of Public Health, Connecticut Association of Directors of Health, Middlesex Hospital, and policy and program key informants who contributed their time, expertise and involvement to the development of this assessment. The Middlesex County Coalition on Community Wellness and this assessment are supported by a Community Transformation Grant from the Centers for Disease Control and Prevention.

This document has been produced for the benefit of the community. Chatham Health District community health needs assessment partners encourage the use of this report for planning purposes and are interested in learning of its utilization. When referenced, please use the citation provided. We would appreciate your comments and questions, which may be directed to Wendy Mis, (860) 365-0884, [wendy.mis@chathamhealth.org](mailto:wendy.mis@chathamhealth.org).

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This assessment was funded by a Centers for Disease Control and Prevention Community Transformation Grant.

This study is available for download at: [www.chathamhealth.org](http://www.chathamhealth.org)

Special thanks to Wendy Mis, MPH, CHES, Director of Community Health at Chatham Health District, for coordination, collection and assembly of this assessment.

*The cover design is a word cloud consisting of words and phrases captured through community conversation while collecting data for this assessment. Words more frequently reported are presented in larger font. At the center of the word cloud is the Middlesex County Coalition on Community Wellness (CoCW) logo, designed by Michael M. Malicki, of Michael Malicki Design/Illustration ([mmalicki@comcast.net](mailto:mmalicki@comcast.net)). The buildings in the logo represent the various sectors of the community. The linked O and C concept symbolize collaboration and inclusiveness. The O represents the strength of the coalition, and the open C signifies the opportunity to join our effort to improve community wellness.*

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## Executive Introduction

For eighteen months, a broad coalition representing Middlesex County worked to produce this county health needs assessment with a focus on chronic disease. The initiative is part of the Centers for Disease Control and Prevention Community Transformation Grant project here in Connecticut. Through oversight from the Connecticut Department of Public Health and Chatham Health District as project lead and grant fiduciary, the assessment reviewed demographics, health indicators, health disparities, and health assets, and performed a policy and environmental scan. The work products of this effort are the County Community Health Needs Assessment Report, which includes a selection of strategic priorities and a Community Health Action Plan, which aligns Middlesex strategic priorities with four other rural counties in Connecticut engaged in the same process.

At the core of the assessment is use of the CDC CHANGE Tool. CHANGE identifies five Sectors: Community at Large, Community Institution/Organization, Health Care, Schools, and Work Site, with a process to consider both policy and environmental assets and needs. Specific attention is placed on policies that address key focus areas: tobacco free living, active living and healthy eating, social and emotional wellness, healthy and safe physical environment, and high quality clinical and other preventive services.

In review of the data, coalition membership selected strategies, taking into account public and political will, cost-effectiveness, feasibility of implementation, likelihood of success, scalability, and long-term impact. These are sustainable approaches that can be readily adopted across sectors by municipalities and many other agencies and organizations.

The Middlesex County Coalition on Community Wellness proposes the following prioritized strategies:

1. Identify quality clinical preventive service protocol for management of patients who are identified with hypertension
2. Prevent and reduce tobacco use through tobacco free policies in public places
3. Improve the availability of affordable healthy foods
4. Focus on opportunities for regular physical activity in schools

We would like to acknowledge the dedication of the Middlesex County Coalition on Community Wellness members who contributed to the data collection, discussion, evaluation, and priority selection. We thank you for participating. Only through your involvement can assessment connect to the community, build lasting new relationships and link public health and health care in such a unique and dynamic way. We invite all who are interested in change to review the data and findings, and become part of the coalition. Success in addressing chronic disease will require the innovation of our approaches through the integration of your ideas.

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Director of Health  
Chatham Health District  
Co-Chair  
Middlesex County  
Coalition on Community Wellness

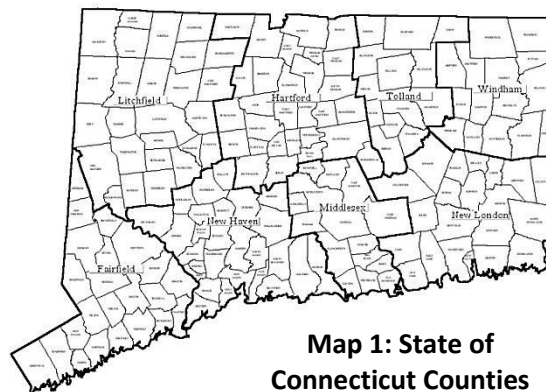
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MIDDLESEX COUNTY  
Coalition on  
Community  
Wellness

## Middlesex County Population and Demographic Overview

Located in the lower central area of the state along the Connecticut River Valley, Middlesex County occupies the smallest land mass of any county in the state (369 square miles). While Connecticut consists of eight counties, there is no county government in Connecticut and local government consists of cities and towns. With a population of 165,676 according to the 2010 Census, Middlesex County ranks 3<sup>rd</sup> of the eight counties in population. This represents a 6.8% increase in population since 2000, which is higher than the average state population growth rate of 4.9% over the past decade.



As reported by the 2010 Census, there were 67,202 households in the county, with an average household size of 2.4 persons. Middlesex County is second highest among Connecticut counties with households including persons over 65 at 26.9%, but has the fewest households with persons under 18 at 29.4%. Compared with the state average of 26.5% and 32.7%, respectively, Middlesex County households have more persons over 65 and fewer persons under 18.

The population of Middlesex County is largely non-diverse; the Census 2010 racial/ethnic composition is 91.0% White, 5.7% Black or African American, 3.1% Asian, 0.6% American Indian, and 4.7% Hispanic or Latino (14.1% minority). Middletown, as the largest municipality in the county, holds the most diversity; the total minority population is 26.2%, as reported by the Connecticut State Data Center of the University of Connecticut.

According to the U.S. Census American Community Survey (ACS) 3-Year estimates for 2008-2010, the predominant ancestries in the county were Italian (25.1%), Irish (22.2%), English (13.9%), German (13.8%) and Polish (11.1%). The ACS also states that among people at least 5 years old living in the United States in 2008-2010, 20% spoke a language other than English at home; 43% of these persons reported that they did not speak English “very well.” In comparison, 11.6% of Middlesex County homes speak a language other than English at home, and only 2.8% reported that they speak English less than “very well.” While the vast majority (88.4%) of county residents speak English, the predominant non-English languages spoken include “Other Indo-European languages” and Spanish. It is important to note that Census ACS data are estimates based on a sample and as such subject to sampling variability. In contrast, the decennial Census data are official population and housing counts. Additional information on the sampling methodology used in the ACS is available at [www.census.gov](http://www.census.gov).

Educational attainment in Middlesex County surpasses the state average; 93.0% are high school graduates or higher, 38.4% have a bachelor’s degree, and 16.0% have a graduate or professional degree. State education averages are 88.5%, 35.6%, and 15.4% respectively, for high school, bachelor’s and graduate or professional degrees.

The median household income in the county as estimated by the 2008-2010 ACS was \$74,301. In 2009, 5.3% of the county’s population was living in poverty, well below the state average of 9.4%. High poverty areas exist in certain communities, and poverty approaches 40% (39.9%) in female-headed households with children under 5 years of age.

With respect to housing, 68.8% of Middlesex County residents own their home, while 31.2% of county residents rent. More than 40% (40.5%) of renters pay 35% or more of their household income towards rent, which is slightly less than the state average of 44% of renters paying 35% or more of their household income towards rent. According to the CERC county profile, 26.8% of Middlesex County housing stock was built prior to 1950, and there are 4,886 subsidized housing units in the county.

## County and Town Designations and Governance

Middlesex County consists of 15 individual municipalities; Chester, Clinton, Cromwell, Deep River, Durham, East Haddam, East Hampton, Essex, Haddam, Killingworth, Middlefield, Middletown, Old Saybrook, Portland, and Westbrook.

While Connecticut is divided geographically into eight counties, these counties do not have any associated government structure, although the county names remain for geographical purposes. The Connecticut General Assembly abolished all county governments in the state on October 1, 1960. The 169 towns of Connecticut are the principal units of local government in the state and have full municipal powers including: corporate powers, eminent domain, ability to levy taxes, public services (low cost housing, waste disposal, fire, police, ambulance, street lighting), public works (highways, sewers, cemeteries, parking lots, etc.), regulatory powers (building codes, traffic, animals, crime, public health), environmental protection, and economic development.



**Map 2: Middlesex County**

Under Connecticut's Home Rule Act, any municipality in CT is permitted to adopt its own local charter and choose its own structure of government. The three principal municipal government structures used in the county are: 1) selectman–town meeting, (Chester, Clinton, Cromwell, Deep River, Durham, East Haddam, Essex, Haddam, Killingworth, Middlefield, Old Saybrook, Portland and Westbrook) 2) mayor–council, (Middletown) and 3) manager–council (East Hampton).

In early 2012, all 15 Middlesex County towns received certification from the Secretary of the State Office of Policy and Management that their request to be designated as a single planning region was approved and that a new Council of Governments had been established. The new organization, the Lower Connecticut River Valley Planning Region, combines and replaces the Midstate Regional Planning Agency and the Connecticut River Estuary Regional Planning Agency.

Over the previous year, each of the 15 towns passed ordinances through their town meetings or councils to create a new organizational structure for the area. A Council of Governments, common in other areas of the state and permitted by State Statute to carry out a variety of regional planning and other activities on behalf of member towns, is led by a Board of Directors consisting of the chief elected officials of each member municipality. The 15 Middlesex County towns are joined by the New London County towns of Lyme and Old Lyme in this new planning region. This provides an interjurisdictional structure to achieve county level Community Transformation Grant (CTG) initiatives.

## Middlesex County Municipality Population and Demographic Highlights

### *2000-2010 Population Comparisons, Growth Projections, and Ethnic/Racial Composition*

**Table 1 2010 University of Connecticut Population and Projections for  
Middlesex County Municipalities, 2015-2030**

Municipality	2010 Population	2015	2020	2025	2030	% Change 2015-2030
Chester	3,994	3,978	4,062	4,168	4,268	7.3
Clinton	13,260	14,318	14,700	15,045	15,364	7.3
Cromwell	14,005	13,604	13,763	13,972	14,163	4.1
Deep River	4,629	4,730	4,725	4,732	4,735	0.1
Durham	7,388	7,980	8,422	8,878	9,306	16.6
East Haddam	9,126	9,507	9,845	10,165	10,441	9.8
East Hampton	12,959	12,256	12,670	13,072	13,426	9.5
Essex	6,683	7,187	7,364	7,525	7,637	6.3
Haddam	8,346	7,731	7,785	7,827	7,835	1.3
Killingworth	6,525	7,027	7,350	7,653	7,963	13.3
Middlefield	4,425	4,236	4,195	4,179	4,196	-0.9
Middletown	47,648	49,086	50,241	51,320	52,141	6.2
Old Saybrook	10,242	10,722	10,694	10,655	10,717	0
Portland	9,508	9,500	9,799	10,121	10,421	9.7
Westbrook	6,938	6,619	6,682	6,783	6,872	3.8
Middlesex County	165,676	168,481	172,297	176,095	179,485	6.5
Connecticut	3,574,097	3,573,885	3,622,774	3,669,990	3,702,400	3.6

Sources: Connecticut State Data Center, University of Connecticut, [http://ctsdc.uconn.edu/projections/ct\\_towns.html](http://ctsdc.uconn.edu/projections/ct_towns.html)

As noted in Table 1, Middlesex County has a total of 15 municipalities, with Middletown distinct from the other towns with a 2010 population of 47,648. Chester, Deep River and Middlefield have a population less than 5,000; Durham, East Haddam, Essex, Haddam, Killingworth, Portland, and Westbrook have populations between 5,000 and 9,999; Clinton, Cromwell, East Hampton and Old Saybrook have populations between 10,000 and 14,999.

For the 15 year period 2015 – 2030, projections from the CT State Data Center show an overall net growth rate in the county of 6.5%, with the highest projected growth rate in Durham and Killingworth. Near zero or negative growth rates are projected in Deep River, Old Saybrook, and Middlefield.

Changes in the ethnic and racial composition of the county by municipality over the past decade, compiled by the CT State Data Center, are shown in Tables 2 and 3. Overall, the county has become more diverse from 2000 - 2010, with the highest increase in the Asian population (1,828 persons or an increase of 82%), surpassing the state average increase of 65%. Based on the increase in absolute numbers of persons, the next highest increase was in White residents (6,268 persons), followed by Hispanic or Latino (3,185 persons), Black non-Hispanic residents (871 persons), and "Other" residents (657 persons). Pacific Islanders saw no increase in population, and American Indians had a decrease of 16 county residents. The greatest gains in the number of minority residents were experienced in Cromwell and Middletown.

**Table 2 Middlesex County Municipality Census 2000 and 2010 Population Counts by Race/Ethnicity\***

Municipality	Total population		White		Black		American Indian		Asian		Pacific Islander		Other		Hispanic or Latino	
	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010
Chester	3,743	3,994	3,623	3,846	32	39	13	5	31	31	2	0	9	21	64	74
Clinton	13,094	13,260	12,550	12,555	74	85	38	20	148	238	3	7	134	174	523	661
Cromwell	12,871	14,005	11,980	12,534	403	593	7	13	159	465	1	3	132	137	410	633
Deep River	4,610	4,629	4,359	4,357	111	85	2	7	37	53	3	2	48	58	136	277
Durham	6,627	7,388	6,407	7,118	76	33	12	10	56	121	n/a	0	20	29	102	159
East Haddam	8,333	9,126	8,105	8,832	70	64	23	21	33	63	n/a	4	38	44	82	210
East Hampton	13,352	12,959	12,466	12,361	273	137	26	10	319	201	7	2	59	67	226	344
Essex	6,505	6,683	6,357	6,431	34	42	6	7	36	81	1	2	23	54	93	183
Haddam	7,157	8,346	6,932	7,985	74	89	8	12	59	121	2	2	12	23	76	139
Killingworth	6,018	6,525	5,870	6,293	25	46	4	13	50	74	n/a	4	15	13	71	141
Middlefield	4,203	4,425	4,109	4,223	31	56	1	5	15	51	1	0	18	22	56	103
Middletown	43,167	47,648	34,540	36,138	5,291	6,110	99	104	1,155	2,319	21	27	857	1,176	2,287	3,949
Old Saybrook	10,367	10,242	9,926	9,617	105	97	8	7	178	243	7	3	47	19	194	342
Portland	8,732	9,508	8,306	8,957	213	207	14	7	45	92	3	1	40	86	171	310
Westbrook	6,292	6,938	6,025	6,576	44	44	8	12	98	94	7	1	45	131	158	309
Middlesex County	155,071	165,676	141,555	147,823	6,856	7,727	269	253	2,419	4,247	58	58	1,497	2,154	4,649	7,834
Connecticut	3,405,565	3,574,097	2,780,355	2,772,410	309,843	362,296	9,639	11,256	82,313	135,565	1,366	1,428	147,201	198,466	320,323	479,087

\* Note: Hispanic or Latino population counts include persons of any race. n/a = not available Source: CT State Data Center, University of Connecticut, [http://ctsdc.uconn.edu/data/2010\\_2000\\_PL\\_Census\\_data\\_comparison\\_towns.xls](http://ctsdc.uconn.edu/data/2010_2000_PL_Census_data_comparison_towns.xls)

**Table 3 Middlesex County Municipality Census 2000 and 2010  
Numeric and Percent Population Change\***

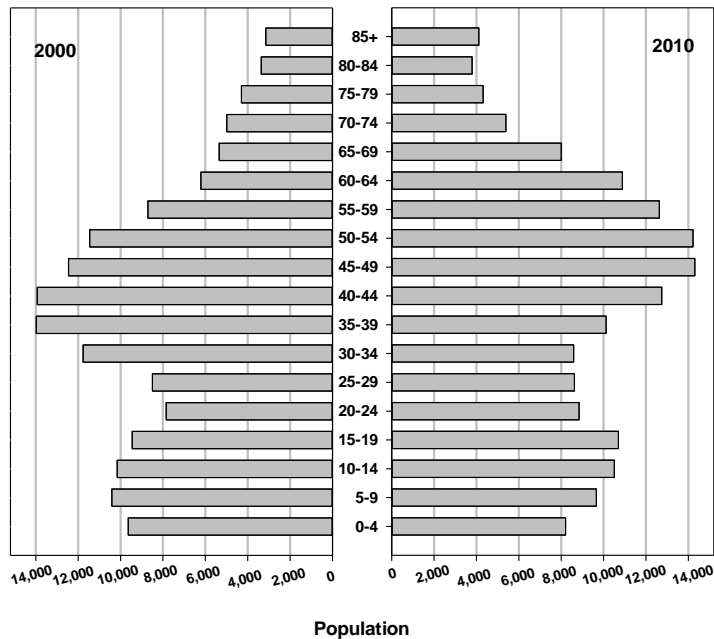
Municipality	Total Population		White		Black non-Hispanic		Asian		Hispanic/Latino	
	# Change	% Change	# Change	% Change	# Change	% Change	# Change	% Change	# Change	% Change
Chester	251	6.7	223	6.1	7	21.9	0	0	10	15.6
Clinton	166	1.3	5	0.04	11	14.9	90	60.8	138	26.4
Cromwell	1,134	8.8	554	4.6	190	47.1	306	192.4	223	54.4
Deep River	19	0.4	-2	-0.05	-26	-23.4	16	43.2	141	103.7
Durham	761	11.5	711	11.1	-43	-56.6	65	116.1	57	55.9
East Haddam	793	9.5	727	9	-6	-8.6	30	90.9	128	156.1
East Hampton	-393	-2.9	-105	-0.8	-136	-49.8	-118	-37	118	52.2
Essex	178	2.7	74	1.2	8	23.5	45	125	90	96.8
Haddam	1,189	16.6	1,053	15.2	15	20.3	62	105.1	63	82.9
Killingworth	507	8.2	423	7.2	21	84	24	48	70	98.6
Middlefield	222	5.2	114	2.8	25	80.6	36	240	47	83.9
Middletown	4,481	10.4	1,598	4.6	819	15.5	1,164	100.8	1,662	72.7
Old Saybrook	-125	-1.2	-309	-3.1	-8	-7.6	65	36.5	148	76.3
Portland	776	8.9	651	7.8	-6	-2.8	47	104.4	139	81.3
Westbrook	646	10.2	551	9.1	0	0	-4	-4.08	151	95.6
Middlesex County	10,605	6.4	6,268	5	871	10.6	1,828	81.5	3,185	76.8
Connecticut	168,532	4.9	-7,945	-2.9	52,453	16.9	53,252	64.7	158,764	49.6

\* Note: Hispanic or Latino population counts include persons of any race. Population change numbers in parentheses ( ) are negative and represent a loss in population for that subgroup. Source: CT State Data Center, University of Connecticut, [http://ctsdc.uconn.edu/data/2010\\_2000\\_PL\\_Census\\_data\\_comparison\\_towns.xls](http://ctsdc.uconn.edu/data/2010_2000_PL_Census_data_comparison_towns.xls)

### ***Age Distribution***

While Middlesex County has a smaller distribution of residents under age 18 when compared to Connecticut overall, (29.4% to 32.7%), it has a greater distribution of residents over age 65 (26.9% to 26.5%). Figure 1 comparing Middlesex County age groups over a ten year period indicates a county population that is shifting toward older age groups. Compared to 2000, the population of young children has declined while the population of teens has increased. The population of residents of reproductive age has also decreased, while the population 50 – 70 years has increased.

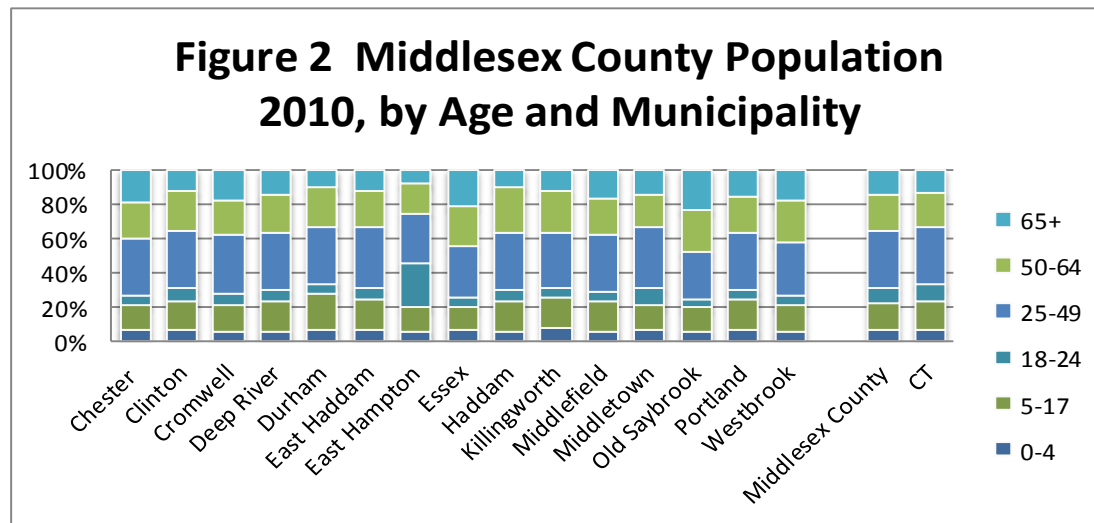
**Figure 1**  
Population of Middlesex County  
2000-2010, by Age Group



Source: U.S. Census, Decennial Census by Age, Race, Sex, Ethnicity, provided courtesy of HISR, Connecticut Department of Public Health <http://www.ct.gov/dph/cwp/view.asp?a=3132&q=488832>, accessed May 2, 2012.

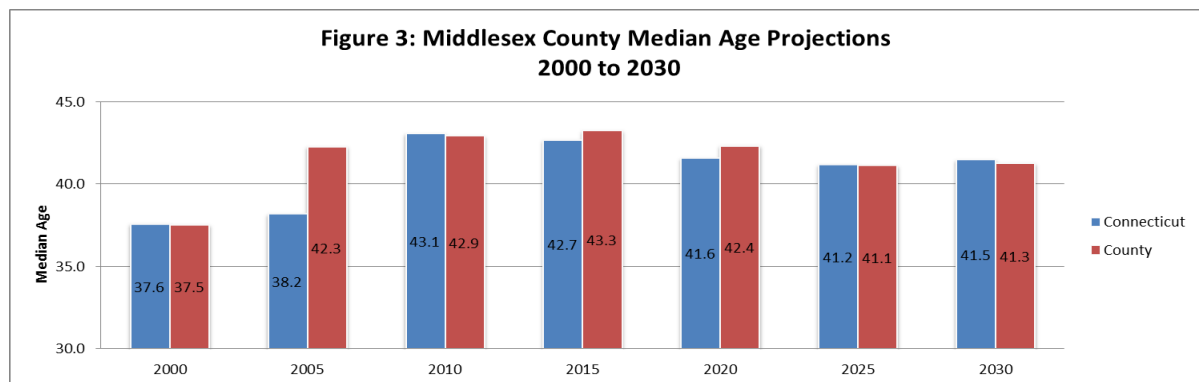
Based on Census 2010 data, the age distribution of the county's fifteen municipalities, compared with the county and the state is shown in Figure 2.

**Figure 2 Middlesex County Population  
2010, by Age and Municipality**



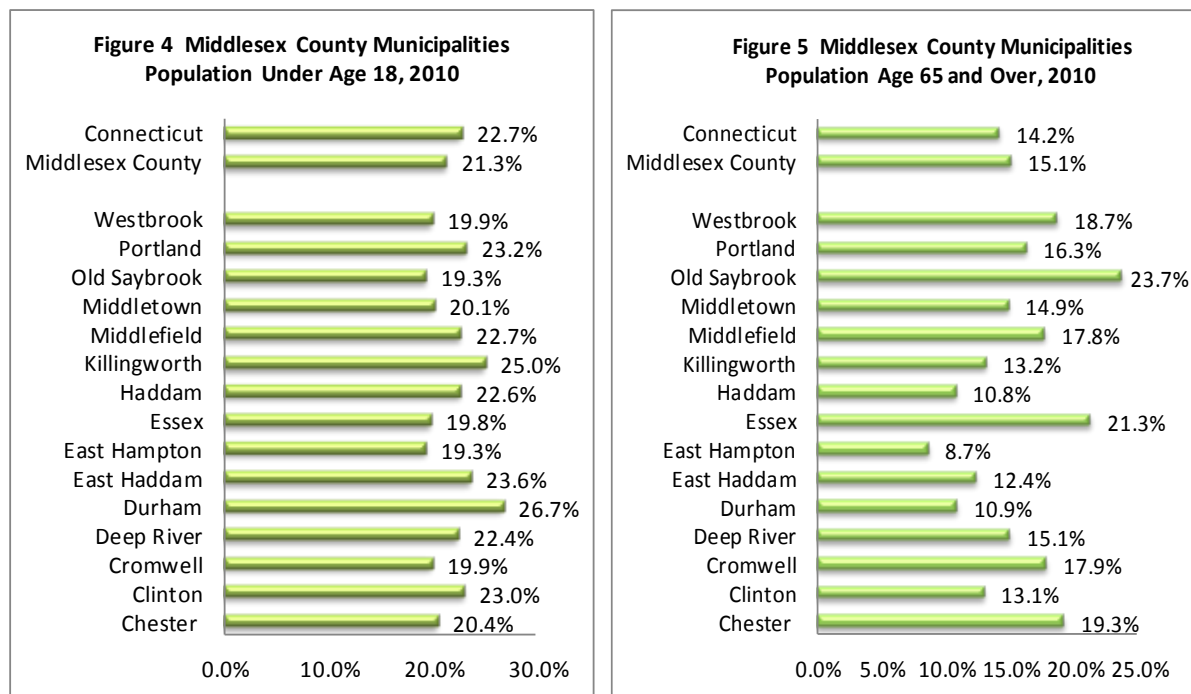
Source: CERC Town Profiles, <http://www.cerc.com>

The upward trend in the age distribution of Middlesex County's population is explained in large part by two factors - the advancing age of the "baby boomer" generation and declining birth rates, both of which are consistent with state and national trends. Growth in the 15- 24 and 50 – 70 age groups can have significant impact on the health care delivery system as the need for health care and support services by residents generally increases with advancing age. The CT State Data Center projects the median age in the county will not decline through 2015, as shown in Figure 3. Short term public health strategies in the county focused on the 15 – 24 and 50 – 70 year age groups would have the greatest impact.



Source: Connecticut State Data Center, University of Connecticut, [http://ctsdc.uconn.edu/projections/ct\\_counties.html](http://ctsdc.uconn.edu/projections/ct_counties.html)

In addition to having a higher percentage of residents 15 – 24 and 50 – 70 years of age, overall the county has a lower percentage of residents under the age of 18 when compared with the state average. The percent of residents under 18 and over 65 for all Middlesex County municipalities are shown graphically below in Figures 4 and 5. This information is important as it has broad implications for health, education, housing, and human services planning.



Source: CERC Town Profiles <http://www.cerc.com>

## Educational Attainment

Advancing levels of education are strongly associated with increased income and the related benefits of improved socioeconomic status. According to the National Center for Educational Statistics, young adults aged 25 – 34 with a bachelor's degree earned more than twice as much as those without a high school diploma or its equivalent in 2009, 50% more than young adults with high school diplomas or its equivalent, and 25% more than young adults with an associate's degree. In 2009, the median earnings of young adults with a master's degree or higher was \$60,000, one-third more than the median for young adults with a bachelor's degree. *Source:*

<http://nces.ed.gov/fastfacts/display.asp?id=77>

Socioeconomic status and health are strongly correlated, with persons of higher socioeconomic status generally experiencing better health status and access to health care. Persons with higher socioeconomic status are also more likely to live in safe neighborhoods, be steadily employed at higher paying jobs with health benefits, and practice healthy lifestyle behaviors. There is a growing body of research suggesting that socioeconomic factors underlie many of the observed racial, ethnic, and gender inequalities in health status, and that socioeconomic factors are powerful predictors of health status and health outcomes.

As indicated in Table 4, from 2000-2010, there was a favorable upward trend in the percentage of Middlesex County residents completing high school and attaining a bachelor's degree. The overall county average for high school completion exceeds the state average. Only Middletown falls below the state average of 89% for achieving high school graduation, while the towns of East Haddam, East Hampton, and Middlefield have rates lower than state average for attaining a bachelor's degree.

**Table 4 Educational Attainment in Middlesex County Residents Ages 25 and Over, 2000 and 2010**

Municipality	High School Graduate or Higher		Bachelor's Degree or Higher	
	2000 (%)	2010 (%)	2000 (%)	2010 (%)
Chester	89	91	36	39
Clinton	92	95	33	36
Cromwell	88	90	33	37
Deep River	89	92	32	36
Durham	91	94	39	42
East Haddam	90	93	30	34
East Hampton	91	93	30	33
Essex	96	96	52	54
Haddam	92	94	34	37
Killingworth	94	94	49	51
Middlefield	86	90	26	30
Middletown	85	88	31	35
Old Saybrook	92	98	38	41
Portland	87	91	32	37
Westbrook	91	93	31	35
Middlesex County	89	92	39	40
Connecticut	83	89	36	35

*Sources: U.S. Census Bureau, 2008-2010 American Community Survey. Selected Social Characteristics in the United States. Connecticut and CERC 2005 and 2011 Town Profiles.*

The Connecticut State Department of Education's (CSDE) Comprehensive Plan for Education includes high school reform to assure all students graduate and are prepared for lifelong learning and careers in the globally competitive economy. As noted in Table 5, with the exception of the East Haddam school district, all school districts in the county surpassed the state average for graduation rate. Similarly, all school districts in the county had cumulative dropout rates below the state average except East Haddam. All districts in the county achieved the *Healthy People 2020* target of 82.4% of students graduating from high school.

**Table 5 High School Graduation Rates and Dropout Rates, School Districts in Middlesex County, 2008**

District Name	Graduation Rate, Class of 2008	Cumulative Dropout Rate (%)
Clinton School District	92.8	6.1
Cromwell School District	96	3.5
East Haddam School District	91.6	7.4
East Hampton School District	98.6	1.4
Middletown School District	96.1	2.7
Old Saybrook School District	98.3	1.9
Portland School District	98.8	1.1
Regional School District 4 (Chester, Deep River, Essex)	93.7	5.7
Regional School District 13 (Durham, Middlefield)	94.7	4.9
Regional School District 17 (Haddam, Killingworth)	98.9	1.1
Westbrook School District	98.9	1.1
Connecticut	92.1	6.8

Source: CSDE CT Data Education and Research [http://sdeportal.ct.gov/Cedar/WEB/ct\\_report/DTHome.aspx](http://sdeportal.ct.gov/Cedar/WEB/ct_report/DTHome.aspx)

Table 6 shows the proportion of racial and ethnic minority students in the county's public school districts. The highest distribution of minority racial/ethnic students during 2009 – 2010 was observed in the Middletown school district, with 43.5% of all the student body reporting a minority race or ethnicity. A substantial percentage of minority students in 2009-2010 was also observed in the Cromwell school district (19.7%).

Consistent with local demographic trends, there was an increase in the minority racial/ethnic population in 10 of the 14 school districts in the county over the past two academic years, with the highest percent increases seen in Cromwell, Portland and Regional School 13 Districts (1.4%, 1.3%, and 1.3% increase, respectively).

Within the county school districts in 2009-2010, Deep River has the highest percent of students who are not fluent in English (5.2%), followed by Old Saybrook (3.4%). However, these school districts do not have a high percentage of minority race/ethnicities.

These data indicate that whereas culturally-appropriate public health strategies are needed in Middletown and Cromwell, linguistically appropriate strategies are needed in Deep River and Old Saybrook school districts.

**Table 6 Percent of Minority and ELL Students Enrolled by School District,  
Middlesex County 2008-2010**

District Name	Minority (%)		Not Fluent in English (%)	
	2008-2009	2009-2010	2008-2009	2009-2010
Chester Elementary School	5.3	6.0	0.0	1.3
Clinton School District	10.2	11	1.5	2.1
Cromwell School District	18.3	19.7	2.5	2.4
Deep River Elementary School	10.8	10.9	4.5	5.2
East Haddam School District	5.3	5.1	0.0	0.1
East Hampton School District	6.1	7	0.6	0.6
Essex Elementary School	8.1	8.9	1.3	1.3
Middletown School District	44.1	43.5	1.1	2.1
Old Saybrook School District	11.6	10.7	3.0	3.4
Portland School District	9.3	10.6	0.5	0.4
Regional School District 4 (Chester, Deep River, Essex)	6.4	6.4	0.3	0.9
Regional School District 13 (Durham, Middlefield)	4.5	5.8	0.5	0.6
Regional School District 17 (Haddam, Killingworth)	3.7	4	0.2	0.2
Westbrook School District	7.0	7.6	1.4	2.3
Connecticut			5.2	5.4

Source: CSDE <http://sdeportal.ct.gov/Cedar/WEB/ResearchandReports/SSPReports.aspx>

### ***Economic Stability – Income, Poverty, and Unemployment***

*Healthy People 2020*, from the U.S. Department of Health and Human Services Office of Disease Prevention and Health Promotion, is a science-based document which provides 10-year national objectives for improving the health of all Americans. *Healthy People 2020* emphasizes the inseparable connections between health and the environments in which we are born, live, learn, work, play, and age. The relationship between poverty and health is particularly strong. Low income persons are more likely to be uninsured, have fragmented health care, and have higher rates of tobacco use, substance abuse, emotional distress and certain chronic diseases such as obesity and diabetes. In addition, persons of low income are more likely to have low levels of education, live in substandard housing and unsafe neighborhoods, be unemployed, and be victims of crime.

As shown in Table 7, East Haddam and Portland have unemployment rates close to the state rate (5.1% vs. 5.2% statewide). Other towns with unemployment rates above the county rate of 3.8% are Middletown (4.6%), Deep River (4.2%), Middlefield (4.1%) and Haddam and Westbrook (4.0%).

Middlesex County households generally have median incomes above the state and well above the national average, and poverty rates lower than the state and national averages. Income by municipality varies considerably, however, and ranged from a low of \$57,655 in Middletown to a high of \$105,417 in Durham. While no municipality in the county has a household median income below the national average, three towns have median household incomes below the state average – Deep River, Middletown, and Westbrook.

Within Middlesex County, 6.1% of families living in Middletown are living below the poverty level, a value twice the county overall percent of 3.0%. Other towns with a high percentage of families living below the poverty level are Portland (3.9%), Old Saybrook (3.3%) and East Haddam (3.2%). Among all three economic indicators, Middletown stands out with a higher percent poverty level, unemployment, and low median household income.

**Table 7 Economic Characteristics of Middlesex County Municipalities, 2006-2010**

	Unemployment rate %	Median Household Income (\$)	Poverty Rate (%)
Chester	2.9	80,185	1.1
Clinton	3.3	74,174	2.2
Cromwell	2.3	82,012	1.3
Deep River	4.2	65,250	3.0
Durham	3.1	105,417	0
East Haddam	5.1	82,695	3.2
East Hampton	3.4	88,281	1.9
Essex	2.3	87,480	0.9
Haddam	4.0	86,179	0.6
Killingworth	3.7	99,500	0
Middlefield	4.1	80,392	0.9
Middletown	4.6	57,655	6.1
Old Saybrook	2.6	79,985	3.3
Portland	5.1	86,661	3.9
Westbrook	4.0	61,069	2.0
Middlesex County	3.8	74,906	3.0
Connecticut	5.2	67,740	6.4
US	7.9	51,914	13.8

Source: US Census Bureau American Community Survey (5 year: 2006 – 2010), B17010,DP03;  
<http://factfinder2.census.gov>

In examining median income and poverty rates, it is important to note that significant inequalities in income and poverty rates exist statewide and within Middlesex County by ethnicity, race, gender, and household composition. The Partnership for Strong Communities report, *2010 Housing in Connecticut: The Latest Measures of Affordability*, indicates that the income disparity in Connecticut

ranks second in the nation and has grown faster than any state in the nation, according to the CT Department of Economic and Community Development (DECD). Source: <http://pschousing.org>

As noted in CT Department of Public Health's *2009 Connecticut Health Disparities Report*, Hispanic/Latino and Black non-Hispanic CT residents were 2 to 3 times more likely to live in poverty than White residents. In terms of household composition, according to U.S. Census ACS estimates, nearly one in four (23%) female-headed households (no husband present) in the county with children under the age of 18 live in poverty. For female-headed households with children under the age of 5, this figure jumps to one in two (51%). An additional consideration is that in areas with a high cost of living families living well above the poverty level often struggle financially. The fair living wage in the county is double the current minimum wage. Source: [http://www.universallivingwage.org/fmrtables\\_2011/CT\\_FMR2011.htm](http://www.universallivingwage.org/fmrtables_2011/CT_FMR2011.htm)

A timely indicator of financial hardship in the community is the percentage of school-age children who are eligible for free or reduced school meals (Table 8). The income eligibility for free meals is 130% or below the federal poverty level; for reduced meals it is more than 130% up to 185% of the federal poverty level. Data indicate that most school districts in Middlesex County fall below the statewide average of 34.4% for free or reduced price meal eligibility, with the exception of the Middletown School District (41.9%). All other Middlesex County school districts had a percentage of no more than 15.1%.

**Table 8 Students Eligible for Free/Reduced Price School Meals, 2010-2011**

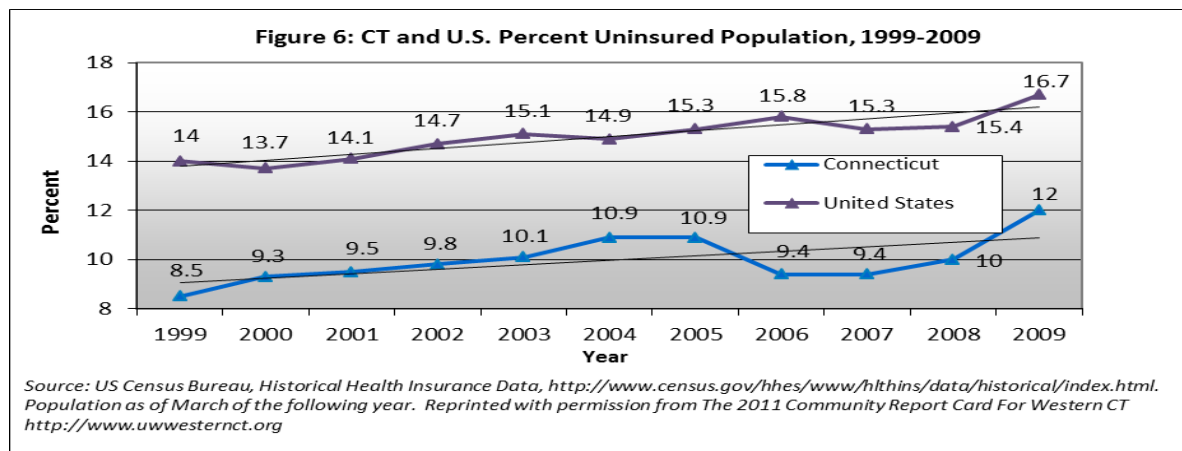
District Name	2010-2011 Eligible for Free/Reduced Lunch (%)
Chester Elementary School	10.5
Clinton School District	13.6
Cromwell School District	14.7
Deep River Elementary School	15.1
East Haddam School District	12.0
East Hampton School District	11.4
Essex Elementary School	6.3
Middletown School District	41.9
Old Saybrook School District	13.3
Portland School District	13.6
Regional School District 4 (Chester, Deep River, Essex)	7.8
Regional School District 13 (Durham, Middlefield)	5.8
Regional School District 17 (Haddam, Killingworth)	6.8
Westbrook School District	10.7
Connecticut	34.4

Source: Connecticut State Department of Education, Student Need Data, [http://sdeportal.ct.gov/Cedar/WEB/ct\\_report/StudentNeedDT.aspx](http://sdeportal.ct.gov/Cedar/WEB/ct_report/StudentNeedDT.aspx)

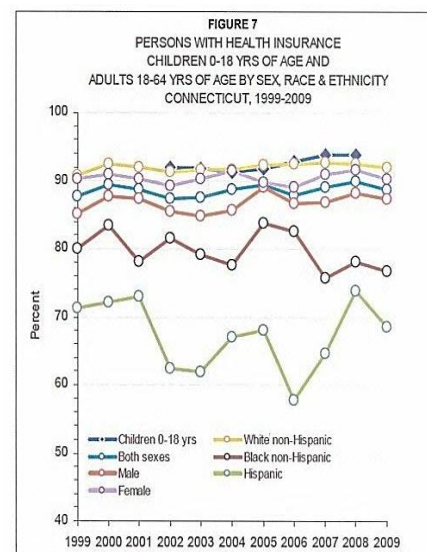
Fortunately Connecticut counties and municipalities have experienced a decline in the unemployment rate over the past year. According to the CT Department of Labor, the state's unemployment rate in March 2011 was 9.2%, and as of March 2012 this had declined to 8.1%, slightly below the national rate of 8.4%. In March 2012, unemployment rates in Middlesex County ranked lowest among the eight CT counties at 6.8%. Unemployment rates ranged from a low of 4.8% in Chester to a high of 7.6% in Westbrook. Source: <http://www1.ctdol.state.ct.us/lmi/laus/laustown.asp>. Unskilled workers, persons with low educational attainment, and minorities are historically at higher risk for unemployment.

## Health Insurance Coverage

Having public or private health insurance coverage is a strong predictor of both access to and regular use of all types of health care services. Studies demonstrate that individuals lacking health insurance are far more likely to receive fragmented health care and experience delayed access to health screenings and diagnosis and treatment for disease. As shown in Figure 6, the percentage of CT residents who are uninsured is well below the national average. From 2007-2009, however, this percentage increased at a faster rate in CT than in the U.S. as a whole.



The CT Department of Public Health's (DPH) report, *Healthy Connecticut 2010*, indicates that the likelihood of being insured in our state varies considerably by population subgroup. As shown in Figure 7, children in Connecticut are more likely than adults to have health insurance, females are more likely than males, and White non-Hispanic residents are significantly more likely than Black non-Hispanic and Hispanic residents to have coverage. HUSKY Health is Connecticut's comprehensive public health insurance program, designed to reduce the number of uninsured individuals and families and increase access to preventive care and diagnostic and treatment services. As reported by the CT Voices for Children in *Uninsured Children in Connecticut, 2010*, the estimated percentage of uninsured persons in Middlesex County in 2010 based on U.S. Census ACS 2011 data, was 7.6% for



Source: Behavioral Risk Factor Surveillance System  
Note: Data for children 0-18 years of age not available until 2002.

Source: *Healthy Connecticut 2010*

persons of all ages and 3.7% for children under age 18. These percentages compare favorably with the 2010 CT rate of 9.1% overall and 3.0 % for children. The report also cites the impact of HUSKY in containing the numbers of uninsured children in spite of the recent economic downturn.

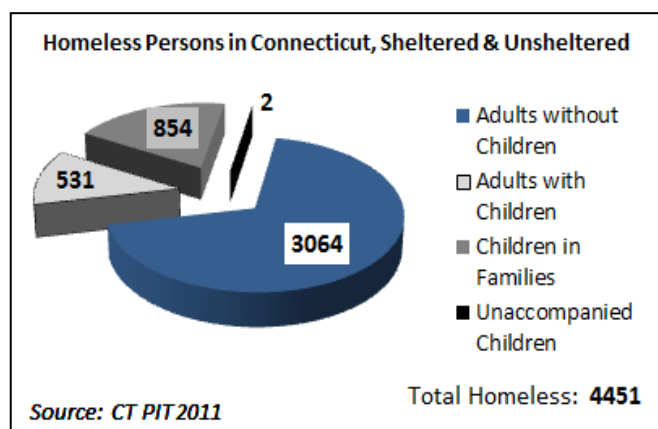
## ***Housing and Homelessness***

The U. S. Department of Housing and Urban Development defines cost-burdened renters or homeowners as those who pay more than 30% of their income for rent or mortgage payments. In many instances, this leaves little money for other necessities such as food, clothing, transportation, utilities, and healthcare. For renters, the situation is typically worst, as the median household income for renters is substantially less on average than for homeowners. According to U.S. Census 2006-2010 American Community Survey data, 48% of renter households in the county are cost-burdened and 41% of households who are paying a home mortgage are cost-burdened.

The National Low Income Housing Coalition's *2012 Out of Reach Study* indicates that Connecticut is the 7<sup>th</sup> most expensive state in the nation for housing. In southern Middlesex County, the hourly wage needed to afford a two-bedroom fair market rate apartment is \$20.77 per hour, 2.5 times the minimum wage. Source: <http://nlihc.org/sites/default/files/oor/2012-OOR.pdf>

According to the 2010 U.S. Census, 74.4% of Middlesex County residents own their homes and 25.6% rent. There is considerable variation of renters by municipality, ranging from 4.9% in Killingworth, to 46.2% in Middletown. In Middlesex County, Killingworth has some of the lowest number of renters, pre-1950 housing stock, and number of subsidized housing units in the county, reflecting the comparatively high median household income and 0% poverty rate previously noted. Middletown has the highest percent of renters in the county (46.2%), as well as the highest number of subsidized units (3,406). Source: <http://www.cerc.com>

**Figure 8**



Since 2007, Connecticut has conducted a statewide standardized and coordinated "census" of homelessness, to enumerate homelessness both in shelters and on the street. Each January, the Connecticut Coalition to End Homelessness coordinates a Point-In-Time Count, to collect data on the exact number of persons experiencing homelessness on a single night in defined geographic areas in the state. The 2011 Point-In-Time Count in Middletown-Middlesex County showed

249 homeless people, of which 89 were children and families, and 160 were adults without children. According to Point-In-Time Count data for 2011, the number of homeless individuals in Connecticut was 4,451, an 8% increase since 2009. The breakdown by type is shown in Figure 8.

In 2009-2010, 23 children in Middlesex County (pre-K through grade 12) were identified as homeless on School Strategic Profile Reports. Source: <http://sdeportal.ct.gov/Cedar/WEB/ResearchandReports/SSPReports.aspx>

The CT Coalition to End Homelessness reports that emergency shelters have been at capacity for over two years, and as a result, there has been a 37% increase in the number of unsheltered homeless statewide.

[http://www.cceh.org/files/publications/Connecticut\\_Point\\_in\\_Time\\_Count\\_2011\\_Brief\\_FINAL\\_2012.01.09.pdf](http://www.cceh.org/files/publications/Connecticut_Point_in_Time_Count_2011_Brief_FINAL_2012.01.09.pdf).

According to United Way's 2-1-1 community services database, homeless shelters in the county are only available in Middletown; The Connection-Eddy Shelter offers 30 beds for single adults, and Columbus House offers transitional housing of 7 apartments for families with a total of 42 beds.

These data indicate that the number of homeless individuals and children far exceeds the capacity of homeless shelters.

## ***Community Safety***

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The Uniform Crime Reporting Program (UCR) measures the extent, fluctuation, and distribution of crime in communities across the United States. Seven index offenses are chosen to form the Crime Index, including the violent crimes of murder, rape, robbery, and aggravated assault and the property crimes of burglary, larceny-theft, and motor vehicle theft. The rates of these offenses are totaled to provide a Crime Index Total. The Connecticut Department of Emergency Services and Public Protection has all 102 CT police departments participating in the UCR Program.

Table 9 compares the 2010 Crime Index Total for all Middlesex County municipalities with the county and state rates.

In examining 2010 Crime Index Total Rates by municipality, those with rates above the county and state average included Clinton, Old Saybrook, Cromwell, and Middletown. The lowest total crime rate was found in Killingworth, followed by Essex. It should be noted that due to the small population size of many Middlesex County municipalities, rates may vary considerably from one year to the next.

In Clinton, crime rates specific to rape (50.0 per 100,000), burglary (975.0) and arson (29.1) were higher than state rates. Larceny rates in Clinton, Old Saybrook, Cromwell and Middletown exceeded the state rates. Robbery (44.1) and motor vehicle theft (130.2) in Middletown exceeded county rates (30.7 and 121.0 respectively). *Source:*

<http://www.dpsdata.ct.gov/dps/ucr/data/2010/Middlesex%20County%202010.pdf>

Law enforcement activity in Middlesex County was most frequently conducted for driving under the influence, drug abuse violations, and simple assault; among individuals less than 18 years of age, the highest number of Middlesex County arrests occurred for simple assault, drug abuse violations, and vandalism, with arrest data shown in Table 10.

**Table 9 2010 Crime Index Totals for Middlesex County Municipalities,  
Rank Ordered by Rate**

<b>Crime Index Total 2010 (Rate)</b>	
Clinton	2,983
Old Saybrook	2,859
Cromwell	2,747
Middletown	2,653
East Haddam	1,441
East Hampton	1,220
Deep River	1,199
Chester	1,146
Middlefield	1,043
Westbrook	1,015
Portland	906
Haddam	799
Durham	776
Essex	601
Killingworth	491
Middlesex County	2,115
Connecticut	2,479

Source: <http://www.dpsdata.ct.gov/dps/ucr/data/2010/Middlesex%20County%202010.pdf>

Notes: 2010 rates only include half-year data for Hamden.

Rates are per 100,000 residents. Arson not included in Crime Index Total.

**Table 10 Percent Select Arrests for Middletown, Middlesex County, and Connecticut, 2010**

<b>Index Offense</b>	<b>Middletown %</b>	<b>Middlesex County %</b>	<b>Connecticut Total %</b>
Simple Assault	4.5	11.7	18.2
Driving Under Influence	4.4	19.4	7.6
Drug Abuse Violations	35.0	18.7	13.1
Simple Assault Under 18 Years of Age	18	29.7	24.6
Drug Abuse Violations Under 18 Years of Age	29.2	15.7	10.0
Vandalism Under 18 Years of Age	9.7	10.6	4.5

Indicators of community safety from the CT Health Equity Index, determined by developing a composite score based on crimes against persons and crimes against property, show considerable variation by community, ranging from a low, or least desirable, score of 2 in Middletown and Old Saybrook, to a high, or most desirable score, of 10 in Chester, East Haddam, Essex, and Killingworth. Low levels of community safety are also correlated with certain undesirable health outcomes such as lower life expectancy, higher rates of accidents, and mental illness.

Source: <http://www.dpsdata.ct.gov/dps/ucr/ucr.aspx>

Socioeconomic factors such as unemployment rates, educational attainment, and income levels are strongly associated with both the prevalence and types of crime in communities.

Domestic abuse crosses all socioeconomic levels and is chronically underreported in crime statistics. The Centers for Disease Control and Prevention estimates that one in four women will be a victim of domestic abuse in their lifetime. The Connecticut Coalition Against Domestic Violence (CCADV) reports that from 7/1/10 – 6/30/11 their 18 domestic violence agencies, including their New Horizons agency located in Middlesex County, provided services to 54,178 victims of domestic violence throughout Connecticut.

Source: <http://www.ctcadv.org/Portals/0/Uploads/Documents/FACT-SHT%202010%20-2011%20for%20email%20%20.pdf>

As reported in the September 2010 edition of the *Middletown Press*, New Horizons serviced more than 1,400 people the previous year.

Source:

<http://www.middletownpress.com/articles/2010/09/07/news/doc4c85a46cd41eb752585068.txt?viewmode=fullstory>

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## ***Community Health-Related and Environmental Assets***

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### ***Community Health – Related Assets***

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Middlesex County is home to Middlesex Hospital, which functions within the Middlesex Health System. The Hospital and Health System offer comprehensive community-based inpatient and emergency services and a Family Medicine Residency Program as well as extensive outpatient care, including diagnostic, rehabilitation, behavioral health, disease management, radiology, laboratory, cancer care, homecare, wound care, surgical services and a network of primary care offices. In addition to its Emergency Department in Middletown, the Health System operates two satellite medical centers in Essex and Marlborough (Hartford County) that feature fully accredited, stand-alone emergency departments. <http://middlesexhospital.org/> Residents in lower Middlesex County often choose to receive care at Yale-New Haven Hospital in New Haven (New Haven County). Some key hospital statistics are provided in Table 11.

Community Health Center, Incorporated, is a federally qualified health center. Federally qualified health centers (FQHC) receive federal funding support to provide preventive, primary, and specialty care services in medically underserved areas. As an FQHC, CHC patients without insurance pay for care based on their income using a sliding fee scale, however no one is refused care based on inability to pay. CHC is a statewide, independent, private non-profit organization, with multiple locations, including 3 in Middlesex County. CHC Middletown offers primary care, including medical, dental and behavioral health services. CHC Middletown is the hub for a network of CHC services, including four comprehensive school based health services, homeless shelter clinics, domestic violence shelter, community based case management services, and family wellness and support services. <http://www.chc1.com/Locations/Middletown.html>. CHC Clinton is the hub for other CHC services in lower Middlesex County, including domestic violence support services and school based mobile dentistry. <http://www.chc1.com/Locations/Clinton.html>. CHC Old Saybrook offers comprehensive primary dental care for children and adults ranging from toddlers through geriatric patients. <http://www.chc1.com/Locations/OldSaybrook.html>

**Table 11 Hospitals Utilized by Middlesex County Residents, 2010**

	Middlesex Hospital	Yale-New Haven Hospital (Outside Middlesex County)	Statewide
Discharges	13,918	56,602	428,276
Patient Days	57,829	284,705	2,055,873
Avg Length of Stay (days)	4.2	5.0	4.8
Staffed Beds	178	871	6,848
Occupancy of Staffed Beds	89.0%	89.6%	82.3%
Avg Daily Census	158	780	5,633

Source: Department of Public Health, Office of Health Care Access, Hospital Reporting System

According to data compiled by the Chatham Health District, there are 16 Chronic and Convalescent Nursing Homes in the county, located in Chester (2), Cromwell (3), Durham (1), East Haddam (1), East Hampton (1), Essex (1), Middletown (4), Old Saybrook (2), and Portland (1). The combined bed capacity of these facilities is 1,439.

Municipalities within the county are served by 2 full-time multi-town health districts, 2 full-time municipal health departments, and 6 part-time municipal health departments. Four of the county's municipalities are served by the Chatham Health District, including East Haddam, East Hampton, Haddam, and Portland. Connecticut River Area Health District serves Clinton, Deep River and Old Saybrook. Full time municipal health departments include Cromwell and Middletown; part time health departments are located in Chester, Durham, Essex, Killingworth, Middlefield, and Westbrook. Phone, email, and website contact information for all health department/districts is available at <http://www.ct.gov/dph/cwp/view.asp?a=3123&q=397740>.

There is a wide variety of additional health-related resources within the county. United Way of CT Infoline 2-1-1 maintains an up-to-date online searchable community resource database of health and human service providers, agencies, and organizations, available at <http://www.211ct.org/referweb/search.aspx>. United Way also publishes an annual report, *The 2-1-1- Barometer - Identifying Unmet Needs in CT*, highlighting gaps between service requests and available resources in the community. This report can be accessed at: <http://www.ctunitedway.org/Media/Barometer/June2011.pdf>

The 2012 County Health Rankings report indicates that Middlesex County has a ratio of 1 primary care physician to every 829 residents, which ranks 4<sup>th</sup> among CT counties and well below both the national benchmark of 1 primary care physician for every 631 persons and the state average of 1 primary care physician per 729. Source: <http://www.countyhealthrankings.org>

## ***Environmental Assets***

With its sizable land mass and low population density, the county abounds in open space areas for recreation. Twenty two state parks and forests total more than 9,800 acres for low and no cost recreation throughout the county. Activities ranging from mountain biking to cross country skiing and swimming are available seasonally throughout the year. In addition, the county offers countless opportunities for year round outdoor recreation through greenways, trails, conservation areas, and numerous lakes, ponds, rivers, and streams. However, access to many of these resources is limited to residents with private transportation.

Middlesex County receives public transportation services from the Estuary Transit District which operates a fixed route bus system and Dial-A-Ride. Shoreline East commuter rail system is available throughout lower Middlesex County. Middletown Area Transit operates a fixed bus route system covering the greater Middletown area and more northerly sections of Middlesex County. According to the Census 2010 ACS 1 Year Estimates, only 0.9% of Middlesex County residents use public transportation to commute to work.

Due to the rural character of many of the county's town centers and roadways, there is limited existing infrastructure such as sidewalks, street lights, or bike lanes to promote walking or biking as a mode of transportation within and among county communities.

According to the 2012 County Health Rankings report, 34% of all restaurants in Middlesex County are fast food restaurants, surpassing the national benchmark of 25%. Fast foods, although convenient, often do not meet recommended daily nutritional requirements, and tend to include foods high in fat, sugar, calories, and low in fiber and nutrients. Fast food high in sodium and fat may increase the risk of high blood pressure that can lead to stroke and heart disease. Consumption of foods high in sugar can lead to weight gain and an increase in insulin resistance, a risk factor for type 2 diabetes. Source: <http://www.countyhealthrankings.org>

Fresh, locally grown food provides higher levels of nutrients than foods shipped from distant locations. Middlesex County is home to 8 Certified Farmers' Markets that afford access to fresh, locally grown produce. These markets, open to all residents, now accept state and federal vouchers that have been provided to low income residents by government agencies. Source: <http://www.localharvest.org/farmers-markets/M22647>

## ***Special Populations***

Within Middlesex County, key vulnerable groups include residents experiencing financial hardships, language and social barriers, and difficulty accessing health care; perinatal women; the very young and very old; persons with disabilities; and persons residing in group quarters. As shown in Figure 1 on page 8, there has been considerable growth in the county population ages 50 - 70, and this population can bring specialized needs in the areas of supported living environments and health care services.

Persons in group quarters are in a group living arrangement that is owned or managed by an independent entity. Group quarters include such places as college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, and correctional facilities. Census 2010 reports a total of 5,085 persons living in group quarters in the county, including 1,881 individuals (896 male, 985 female) in institutions. The remaining 3,204 individuals (1,712 males and 1,492 females) reside in non-institutional settings.

Recent Census data on the extent and type of disabilities in county residents of all ages was not yet available at the time of publication. Disability information for school-age children as reported by CSDE indicate that in 2010-2011, overall 11.7% of CT K-12 students had one or more disabilities. The most common types of disabilities reported were learning disabilities, followed by speech/language impairments, other health impairments, autism, and emotional disturbances. Data for individual schools in Middlesex County for 2009-2010 show the proportion of K-12 students with disabilities by school, ranging from a low of 7.8% to a high of 12.8%.

Source: [http://sdeportal.ct.gov/Cedar/WEB/ct\\_report/SpecialEducationDTCategory.aspx](http://sdeportal.ct.gov/Cedar/WEB/ct_report/SpecialEducationDTCategory.aspx)

Related to maternal, infant, and child health, the DPH *Maternal, Infant, and Early Childhood Home Visiting Needs Assessment* examined existing services and compared data to relevant risk factors of families of young families. East Hampton was found to have a moderate need for maternal and infant services. Source: [http://www.ct.gov/dph/lib/dph/needs\\_assessment\\_complete\\_091510.pdf](http://www.ct.gov/dph/lib/dph/needs_assessment_complete_091510.pdf).

Middletown's Early Childhood Plan, a Graustein Discovery Community initiative, presents a community-designed implementation plan that seeks to have all children "ready by 5 and fine by 9". Source: [http://www.discovery.wcqmhf.org/sites/default/files/resources/sps\\_resource\\_1242.pdf](http://www.discovery.wcqmhf.org/sites/default/files/resources/sps_resource_1242.pdf)

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## Health Status of County Residents

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A number of indicators are used to describe the health status of residents in a specific geographic area. These include the presence or absence of health promoting behaviors; access to and utilization of health screenings, primary care and specialized health care services; the incidence and prevalence of chronic and communicable diseases; and the leading causes of premature death and disability.

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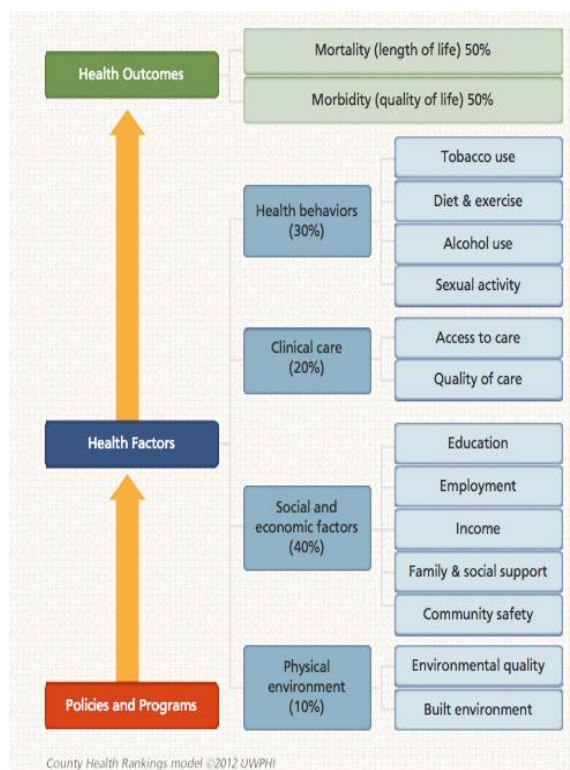
### *State and County Health Rankings*

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According to the United Health Foundation, in 2011 Connecticut ranked third highest in health status in the nation, a continued positive trend from a rank of seventh in 2009 and fourth in 2010. Specific strengths cited include low rates of smoking, a lower prevalence of obesity when compared to other states in the nation, a low percentage of children in poverty, a low rate of uninsured population, high immunization coverage, and relatively high proportion of primary care physicians. Areas where improvements are needed include a high rate of binge drinking and moderate levels of air pollution. The report indicates that CT has demonstrated success in reducing deaths from cardiovascular disease and cancer and, in the past ten years, smoking prevalence has decreased dramatically. Source: <http://www.americashealthrankings.org/CT/2011>

The 2012 County Health Rankings, a collaboration of the University of Wisconsin's Population Health Institute and the Robert Wood Johnson Foundation, ranks CT counties based on health outcomes and health factors. Counties receive a Health Outcome rank based on mortality and morbidity and a Health Factor rank based on health behaviors, clinical care, social-economic factors, and the physical environment. Figure 9 shows the weighting structure used to calculate the rankings. This quantifies the interconnectedness of personal health behaviors, clinical care, social and economic factors and the physical environment in which we live.

**Figure 9 County Ranking Weighting**



Within CT, counties are ranked from 1 to 8 on health factors and outcomes, with a rank of 1 being the “healthiest”. Health outcomes represent the overall health of the county; health factors represent what influences the health of the county.

Health outcomes are based on an equal weighting of mortality (how long people live) and morbidity (how healthy people feel) factors. Middlesex County ranked 2<sup>nd</sup> out of the eight CT counties for health outcomes (Table 12b). Health factor rankings are based on the weighted average for the four different types of factors (% used for weighting are shown in parentheses in Figure 9). Middlesex County ranked 1<sup>st</sup> out of the eight counties for health factors. Selected findings specific to Middlesex County, with CT and U.S. comparisons follow.

**Table 12a Middlesex County Health Indicators, 2012**

INDICATOR	Middlesex County	Error Margin	National Benchmark*	CT
Premature Death	4,927	4,551 - 5,302	5,466	5,641
Poor or fair health	10%	9-12%	10%	11%
Poor physical health days	2.7	2.4-3.1	2.6	2.9
Poor mental health days	3.1	2.7-3.6	2.3	3.1
Adult smoking	16%	14-18%	14%	16%
Adult obesity	23%	21-26%	25%	23%
Physical inactivity	21%	18-24%	21%	23%
Excessive drinking	19%	17-21%	8%	18%
Preventable hospital stays	54	51-58	49	63
Diabetic screening	86%	82-91%	89%	83%
Mammography screening	75%	70-79%	74%	71%
Access to recreational facilities	16		16	14
Limited access to healthy foods	7%		0%	5%
Fast food restaurants	34%		25%	38%

\* 90th percentile, i.e., only 10% are better Note: Blank values reflect unreliable or missing data Source: <http://countyhealthrankings.org>

As noted in Table 12a, Middlesex County meets National Benchmarks and compares favorably to the state on a number of indicators including: premature death, residents reporting poor or fair health, prevalence of physical inactivity, mammography screening, and access to recreational facilities. The county also compares favorably to the state for residents’ self-report of poor physical health days, preventable hospital stays, diabetic screening, and percentage of fast food restaurants and has comparable rates for poor mental health days, adult smoking, and prevalence of adult obesity. County indicators that do *not* meet National Benchmarks include excessive drinking (county rate is more than twice the National Benchmark), access to healthy foods, and the density of fast food restaurants.

**Table 12b: County Health Rankings**

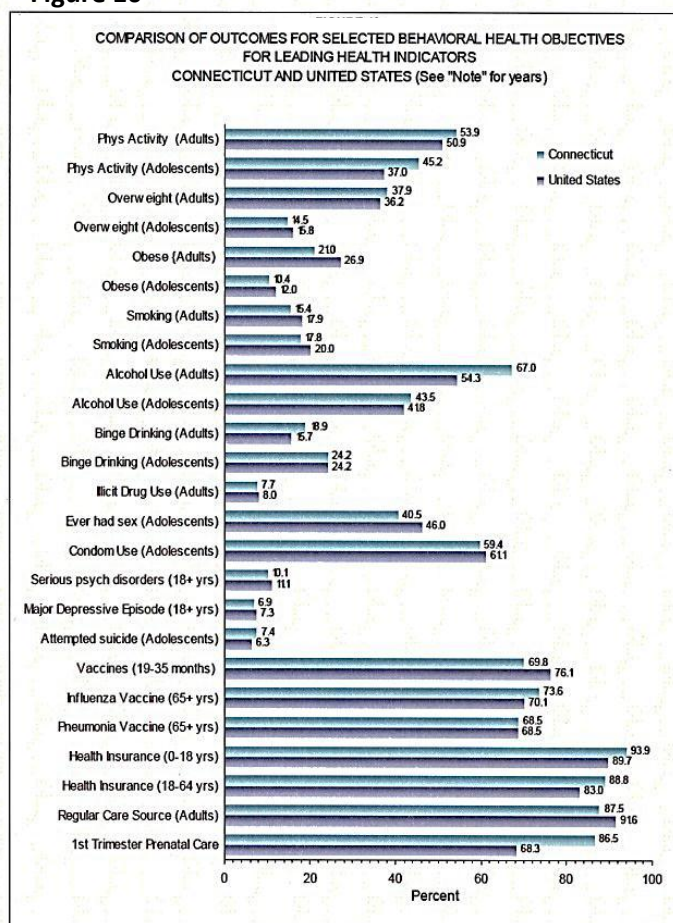
Rank	Health Outcomes	Rank	Health Factors
1	Tolland	1	Middlesex
2	Middlesex	2	Tolland
3	Fairfield	3	Litchfield
4	Litchfield	4	Fairfield
5	New London	5	New London
6	Hartford	6	Hartford
7	Windham	7	New Haven
8	New Haven	8	Windham

### ***Lifestyle Behaviors and Risk Factors***

As stated in *Healthy People 2010*, individual behaviors and social-environmental factors account for about 70% of premature deaths in the U.S. Health promoting lifestyle behaviors such as avoiding tobacco, illicit drug, and excessive alcohol use; healthy eating; regular physical activity; and managing stress are key to reducing the burden of chronic disease and premature death in county residents.

The CT DPH report, *Healthy Connecticut 2010*, compares outcomes in U.S. and CT residents for selected behavioral health objectives related to *Healthy People 2010* leading health indicators—physical activity, overweight/obesity, tobacco use, substance abuse, sexual behaviors, mental health, injury and violence, environmental quality, immunization, and access to health care. Key findings are presented in Figure 10.

**Figure 10**



Sources: Behavioral Risk Factor Surveillance System, Connecticut School Health Survey, Youth Risk Behavior Survey, National Immunization Survey, National Survey on Drug Use and Health.

Notes: Data years: Physical Activity, Overweight, Obese, Smoking, Alcohol Use, Binge Drinking (Adults 2009, Adolescents 2009); Illicit Drug Use, Serious Psychological Disorders, Major Depressive Episode (2006-2007); Sex, Condom Use (during last sexual intercourse), Attempted Suicide (2009); Vaccines (2009); Health Insurance (Children 2007-2008, Adults 18-64 yrs 2009).

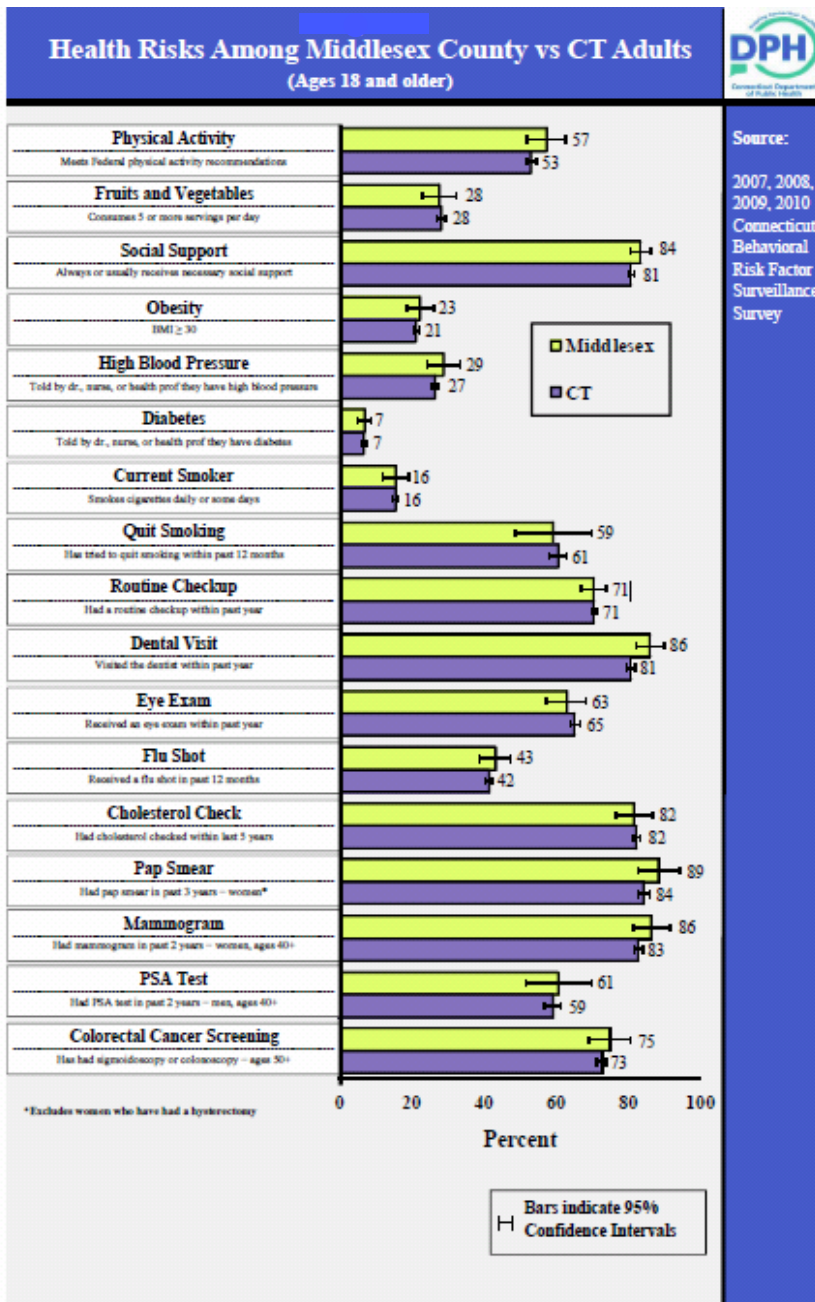
In general, CT residents had a lower prevalence of most behavioral risk factors than the average U.S. resident and were more likely to be physically active, not be obese, and not smoke. In contrast, there was a higher prevalence of alcohol use in both teens and adults, and overweight and binge drinking in adults.

The Centers for Disease Control and Prevention (CDC) Community Transformation and the national Million Hearts™ initiatives both target reduction of major risk factors for heart disease and stroke, which are leading causes of death and disability in the nation, state, and county. These risk factors include tobacco use, poor diet, physical inactivity, and unhealthy weight. In addition, control of high blood pressure and high cholesterol are imperative for maintaining cardiovascular health.

## Behavioral Risk Factor Surveillance

The CDC Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing random telephone survey of adults ages 18 and over conducted in all 50 states. The BRFSS originally collected data on health behaviors related to the leading causes of death, but has since expanded to include survey questions

**Figure 11**



related to health care access, utilization of preventive health services, and emerging health issues.

Comparative BRFSS data for Middlesex County and the state for the years 2007-2010 are presented in Figure 11. In general, Middlesex County residents had similar rates (identical or within 1 point) to the state related to fruit and vegetable consumption, prevalence of diabetes, number of current smokers, having routine medical check-ups, participation in influenza vaccination, and cholesterol testing.

County residents reported more physical activity, social support, and more frequent participation in routine dental care, pap smears, mammography, PSA testing (in men), and colorectal cancer screening.

Though these increases were not statistically significant, county residents reported slightly more obesity or high blood pressure than CT residents overall, and slightly fewer smokers reported attempts to stop smoking or participate in routine eye exams.

## Tobacco Use

Smoking is the single most avoidable cause of chronic disease and death. Smoking increases the risk of lung, bronchus, trachea, and esophageal cancer as well as many other types of cancers, heart disease, stroke, and chronic lung diseases. As reported in *Healthy Connecticut 2010*, over 5,000 CT adults die each year due to smoking and from exposure to secondhand smoke. As reported in the *2011 United Health Foundation's Health Rankings*, Connecticut has one of the lowest rates of current smoking in adults, and in 2011, ranked 3rd lowest among U.S. states (13.2% compared to 17.3% nationally).

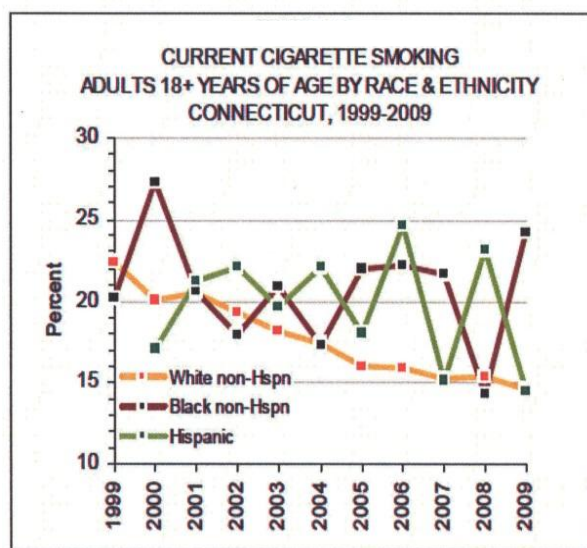
Smoking among Connecticut adults has declined by 40% over the past 20 years, with the greatest decrease occurring during the last decade. As shown in Figure 12, smoking prevalence has decreased for all adult groups other than Black non-Hispanics since 1999. Source:

[http://www.ct.gov/dph/lib/dph/state\\_health\\_planning/healthy\\_people/hct2010\\_final\\_rep\\_jun2010.pdf](http://www.ct.gov/dph/lib/dph/state_health_planning/healthy_people/hct2010_final_rep_jun2010.pdf).

In spite of these positive trends, continued efforts to avoid tobacco use are imperative to future reductions in morbidity and mortality from cancer, respiratory, and cardiovascular diseases. In CT adults, smoking prevalence is highest in males, persons ages 18-24, those with less than a high school education, and those with incomes below \$25,000 (26.4%). Based on BRFSS age-adjusted rates, Middlesex County ranked sixth among the eight counties in smoking prevalence among CT counties in 2007-2009.

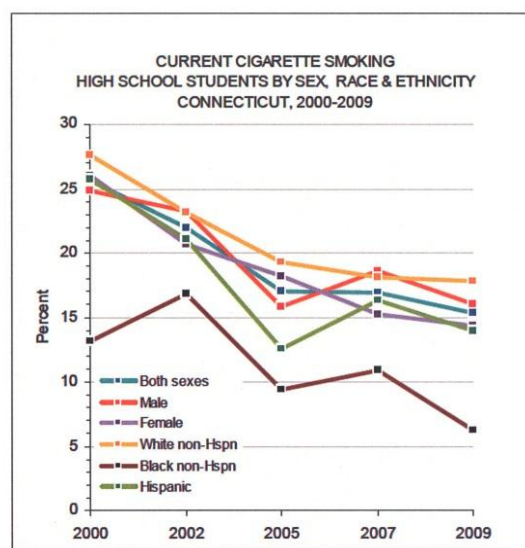
*Healthy Connecticut 2010* reports smoking rates in adolescents have also shown a dramatic decline from 2000-2009 (66% among middle school and 40% among high school students). In middle school, Hispanic or Latino students had the highest smoking rates. While in high school, White non-Hispanics had the highest smoking rates, as seen in Figure 13.

**Figure 12**



Source: Behavioral Risk Factor Surveillance System

**Figure 13**

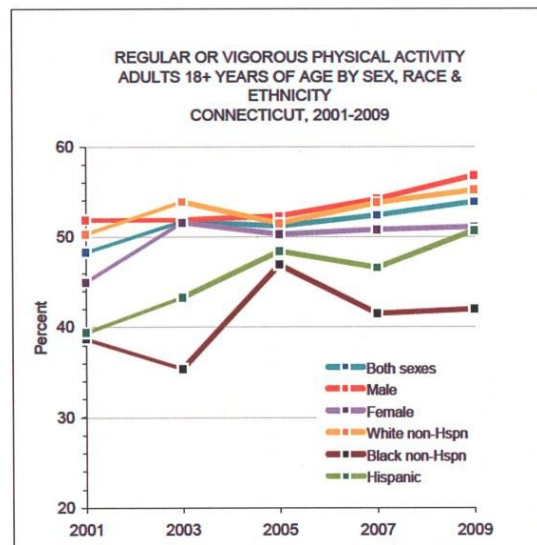


Source: Connecticut Youth Tobacco Survey

### ***Physical Activity, Healthy Eating, and Healthy Weight***

Regular or vigorous physical activity is important to overall health and weight management. Regular activity reduces the risk of obesity, heart disease and stroke, colorectal and breast cancers, type 2 diabetes and metabolic syndrome, high cholesterol, high blood pressure, and osteoporosis. Activity also improves mental health and mood and lowers the overall risk of premature death. As shown in Figure 14, physical activity among CT adults increased from 2001-2009, with the greatest gains in Hispanic residents. There was significant disparity in the reported level of activity for Black and White non-Hispanics.

**Figure 14**



Source: Behavioral Risk Factor Surveillance System

Based on 2007-2009 BRFSS data, adults more likely to meet physical activity recommendations were male, White non-Hispanic, ages 18-24, and those with higher education and income levels. Based on age-adjusted data, Middlesex County ranked second lowest among CT counties in the percentage of adults who did *not* meet recommended requirements (moderate physical activity for 30 minutes or more 5 times per week or vigorous physical activity for 20 minutes or more 3 times a week).

According to the National Survey of Children's Health, in 2007 CT children were more likely than their counterparts nationwide to be physically active for at least four days per week (36.2% versus 34.4%), and less likely to spend one hour or more a day in front of a television or computer screen (42.7% versus 50.1%). Source: <http://childhealthdata.org/docs/nsch-docs/connecticut-pdf.pdf>

The CT DPH 2009 CT School Health Survey - Youth Behavior Component report indicates that the percentage of adolescents who are physically *inactive* increases by grade from 11.2% in grade 9 to 19.9% in grade 12; female and Black or Hispanic students are much more likely to be inactive.

Another measure of the level of physical fitness in youth is the percentage of students in local school districts passing all four components of state physical fitness tests. These standardized tests include four areas of fitness: aerobic endurance, flexibility, muscular strength and endurance.

The results for K-12 students enrolled in school districts within the county are presented in Table 13. Within Middlesex County, seven of the 14 school districts performed more poorly than the statewide percent (51.0%). In the school district of Chester, only 19.5% of the students passed all four of the physical fitness test components. The school districts of East Haddam (33.4%), Middletown (39.3%), Portland (40.2%) and Clinton (41.3%), also performed poorly compared to the state percent. These data suggest an increased focus among school children on physical activity and fitness.

**Table 13 Percentage of K-12 Students Passing  
All Four Physical Fitness Test Components, 2010-2011**

District	% K-12 Students Passing
Chester School District (Elementary)	19.5
Clinton School District	41.3
Cromwell School District	49.6
Deep River School District (Elementary)	76.8
East Haddam School District	33.4
East Hampton School District	53.5
Essex School District (Elementary)	52.6
Middletown School District	39.3
Old Saybrook School District	60.1
Portland School District	40.2
Regional School District 04 (Chester, Deep River, Essex)	42.9
Regional School District 13 (Durham, Middlefield)	61.3
Regional School District 17 (Haddam, Killingworth)	63.3
Westbrook School District	59.8
State	51.0

Available county level BRFSS survey data (2007-2009) on healthy eating are limited to fruit and vegetable consumption. Survey findings indicate that only 28.4% of CT adults and 27.2 % of county adults consume the recommended 5 or more servings of fruits and vegetables per day. Eating the recommended amount of fruits and vegetables is more common in females, White non-Hispanics, persons ages 65 and over, and those with higher education and income levels. Based on age-adjusted data, Middlesex ranks third among CT counties in the percentage of persons consuming less than the recommended quantity of fruits and vegetables. Related to healthy eating by youth, the *CT School Health Survey - Youth Behavior Component* (2009) reports that overall only 21% of CT high school students consume 5 or more servings of fruits and

vegetables, and male students are more likely than female students to consume the recommended amounts (at statistically significant levels). Source: [http://www.ct.gov/dph/lib/dph/hisr/pdf/cshs\\_2009\\_ybcreport.pdf](http://www.ct.gov/dph/lib/dph/hisr/pdf/cshs_2009_ybcreport.pdf)  
Source: CT State Dept Education [http://sdeportal.ct.gov/Cedar/WEB/ct\\_report/PhysicalFitnessDTVviewer.aspx](http://sdeportal.ct.gov/Cedar/WEB/ct_report/PhysicalFitnessDTVviewer.aspx)

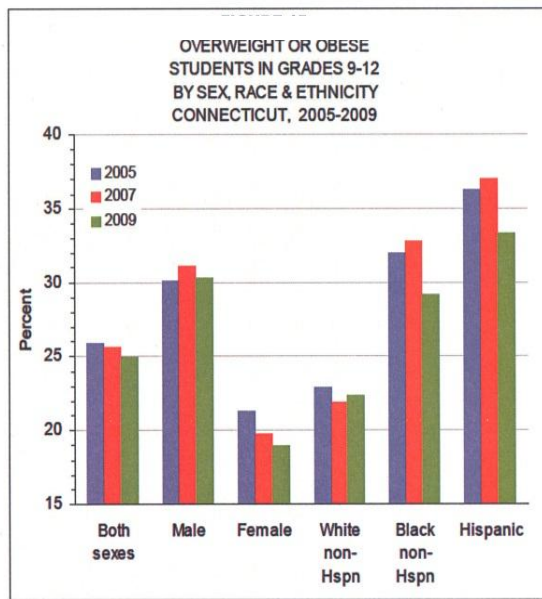
Obesity and overweight in children, adolescents, and adults have reached epidemic proportions in the U.S. According to the CDC, the prevalence of childhood and adolescent obesity has more than tripled in the past 30 years. The percentage of children aged 6–11 years in the nation who were obese increased from 7% in 1980 to nearly 20% in 2008. Over this same time period, the percentage of adolescents aged 12–19 years who were obese increased from 5% to 18%.

The long-term health consequences of childhood and adolescent obesity are serious. Youth who are obese are more likely to experience social and psychological problems due to poor self-esteem. They are more likely to be overweight adults, and consequently at a greater risk for developing heart disease, hypertension, type 2 diabetes, stroke, osteoarthritis, and certain types of cancer. Source: CDC, *Adolescent and School Health*, <http://www.cdc.gov/healthyyouth/obesity/facts.htm>.

According to the National Survey of Children's Health, in 2007 approximately 95,000 Connecticut children ages 10-17 years (25.7%) were considered overweight or obese according to Body Mass Index (BMI) for age standards. Hispanic/Latino (40.4%) and Black non-Hispanic (38.1%) children in Connecticut are almost two times more likely than White children (21.8%) to be overweight or obese.

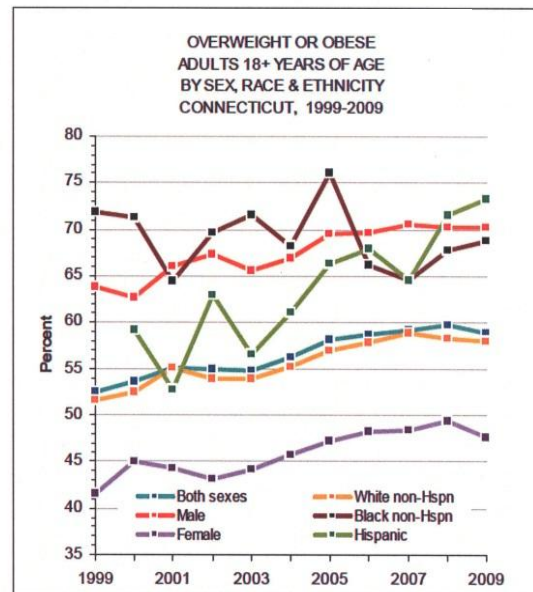
*Healthy Connecticut 2010* reports racial and ethnic disparities in overweight and obesity in adolescents and adults, as shown in Figures 15 and 16. In high school students, obesity is more prevalent in males and in Hispanic students followed by Black non-Hispanic students. In adults, obesity is more prevalent in these same groups, with rapid rise in obesity in Hispanic adults from 2007-2009.

Figure 15



Source: Youth Risk Behavior Survey

Figure 16



Source: Behavioral Risk Factor Surveillance System

Based on 2007-2009 BRFSS data, 21.2% of adults in the county are obese. Obesity is also more common in adults with lower educational and income levels. Middlesex County ranked third lowest among CT counties in the age-adjusted rate of obesity in adults.

*Obesity Among Older Americans*, a February 2009 Congressional Research Service Report for Congress, projected that by 2010, 37.4% of American adults aged 65 and older would be obese. An unabated trajectory projects that nearly half of Americans 65 years and older will be obese in 2030. While no county-specific information is available, data from the 2007 BRFSS shows the prevalence of obesity among Connecticut residents 65 years and older is 19.1%.

These data indicate the need among adults for increased healthy eating and the need among children for both healthy eating and active living.

## ***The Burden of Chronic Disease***

According to the Centers for Disease Control and Prevention (CDC), 7 out of 10 deaths among Americans each year are the result of chronic diseases, and almost 1 out of every 2 adults has at least one chronic illness. Chronic diseases are also estimated to be responsible for 75% of health care costs in the U.S.

The burden of chronic disease is not shared equally among population subgroups in our nation, state or county – significant disparities exist. *Healthy People 2020* defines a *health disparity* as “a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to

discrimination or exclusion.” Powerful, complex relationships exist between health and biology, genetics, and individual behavior, and between health and health services, socioeconomic status, the physical environment, discrimination, racism, literacy levels, and legislative policies. These factors, which influence an individual’s or population’s health, are known as *determinants of health*.

The burden of chronic disease in county residents is assessed in several ways – through examination of disease surveillance data, health care utilization data (such as emergency department visit and hospitalization rates by type of diagnosis), and mortality data.

The most prevalent category of chronic diseases in the U.S. is cardiovascular diseases (CVD). Major cardiovascular diseases include coronary heart disease (CHD), cerebrovascular disease (stroke), and heart failure. CVD is the leading cause of death in Connecticut, accounting for about one-third of all resident deaths. More than half (55%) of these deaths are among females. Risk factors for CVD may be modifiable or non-modifiable. Modifiable risk factors include high blood pressure, high blood cholesterol, smoking, diabetes, obesity, and physical inactivity. Non-modifiable risk factors include increasing age and family history of heart disease and stroke. The age-adjusted mortality rates for CVD have declined significantly for CT residents over the past decade. However, there are considerable disparities in mortality rates from CVD, with Black non-Hispanic residents having the highest rates. *Source: CTDPH, the Burden of Cardiovascular Disease in Connecticut, 2010 Surveillance Report, [http://www.ct.gov/dph/lib/dph/hisr/pdf/2010cvd\\_burdendoc\\_final.pdf](http://www.ct.gov/dph/lib/dph/hisr/pdf/2010cvd_burdendoc_final.pdf).*

High blood pressure and elevated cholesterol levels are both major risk factors for CVD. Data from the 2007-2010 BRFSS show that more than one in four (27%) CT adults have been told they have high blood pressure by a health professional. High blood pressure is more common in males, Black non-Hispanic adults, persons ages 65 and over, and in persons with lower education and income levels. Based on BRFSS data from 2007-2009, Middlesex County ranks third highest among CT counties in the prevalence of high blood pressure in adult residents (26.8%).

Data from the 2007-2010 BRFSS show that the majority of CT (82%) and county adults (82%) had their cholesterol checked in the past 5 years. BRFSS data from 2007-2009 indicate that adults most likely to have their cholesterol checked were female, White non-Hispanic, ages 65 and over, (95% vs. 40% in persons ages 18-24), and adults with higher education and income levels. Adults who most frequently reported they had never had their cholesterol checked were Hispanic or Latino (31%), and persons with less than a high school education and annual incomes below \$25,000. Based on age-adjusted rates, Middlesex County ranked fourth out of the eight counties in the percentage of adults who reported never having their cholesterol checked (17.0%).

Data on the prevalence of elevated cholesterol in adults compiled from the 2007-2009 BRFSS show that 37.8% of CT adults have been told by a health professional that their blood cholesterol is high. High blood cholesterol is more common in males, White non-Hispanic residents, persons ages 65 and over, and persons with less education and income. Based on age-adjusted rates, Middlesex County residents have the highest prevalence of high cholesterol among CT counties (40.8%).

The second most frequent type of chronic disease in CT is malignant neoplasms or cancer. The incidence rate of new cancer cases and mortality rates have been steadily decreasing. This is the result of increased primary prevention efforts, earlier detection and improved treatment options.

*Source: CTDPH, Connecticut Comprehensive Cancer Control Program, Connecticut Cancer Plan 2009-2013, [http://www.ct.gov/dph/lib/dph/comp\\_cancer/pdf\\_files/ctcancerplan\\_2009\\_2013\\_cdversion.pdf](http://www.ct.gov/dph/lib/dph/comp_cancer/pdf_files/ctcancerplan_2009_2013_cdversion.pdf)*

In 2008, the age-adjusted cancer incidence rate in Connecticut was estimated at 499.8 per 100,000 people, a decrease from the 2007 rate of 502.5 per 100,000 people.

*Source: <http://www.statecancerprofiles.cancer.gov>*

In Connecticut (2007-2009 BRFSS data), an estimated 6.9% or approximately 186,000 adults aged 18 and older reported being diagnosed with diabetes. An additional 93,000 adults are estimated to have undiagnosed diabetes. The prevalence of type 2 diabetes in CT and in the nation has increased significantly. Type 2 diabetes typically develops later in life and is strongly associated with overweight and obesity. Source: CTDPH, *The Burden of Diabetes in Connecticut, 2010 Surveillance Report*, [http://www.ct.gov/dph/lib/dph/hisr/pdf/2010diabetesburden\\_final.pdf](http://www.ct.gov/dph/lib/dph/hisr/pdf/2010diabetesburden_final.pdf)

As reported in the 2007-2009 BRFSS, diabetes is twice as prevalent in Black non-Hispanic adults as in White non-Hispanic adults, and prevalence increases with age. Diabetes also occurs most frequently in adults with less education and lower incomes, who also experience disproportionately higher rates of obesity. The age-adjusted prevalence of diabetes among Middlesex County adults ranks fourth among CT counties (6.4%).

Utilization of health care services, including emergency department (ED) visit and hospitalization rates are important measures of the burden of chronic disease. Frequent use of ED services for primary care conditions also indicates that a community may have an insufficient quantity of primary care providers or health providers serving the uninsured.

Table 14 depicts ED visit rates for CT and for Middlesex County. These rates represent ED visits by residents to any hospital within CT (visits to hospitals outside CT are excluded). Overall, ED visit rates for county residents are comparable to those for CT residents, however there are notable differences by race/ethnicity and diagnostic group. The ED visit rates for White non-Hispanic and Black non-Hispanic residents in the county are well above the state average, and those for Hispanic/Latinos fall well below the state average. Lower ED visit rates for Hispanic Latino residents may be explained in part due to underreporting of this ethnicity on ED intake records.

By diagnostic group, county residents overall had similar ED visit rates for cancer (all sites, oral cavity & pharynx and lung/bronchus), congestive heart failure, and for liver disease, including cirrhosis. Compared with state residents, county residents had higher ED visit rates for major CVD, coronary heart disease, acute myocardial infarction (MI), and stroke. Black non-Hispanics had disproportionately high rates for cancer (all sites), major CVD, coronary heart disease, acute myocardial infarction (MI), stroke, chronic obstructive pulmonary disease, and asthma. Hispanic Latino residents had disproportionately high rates for coronary heart disease and acute myocardial infarction (MI). County residents overall had lower ED visit rates for diabetes, alcohol and drug abuse, chronic obstructive lung disease and asthma.

**Table 14 State and County Age-Adjusted ED Visit Rates per 100,000 Residents by Gender, Race, and Ethnicity, 2005-2009**

Connecticut							Middlesex County						
Diagnostic Group*	Total	Female	Male	White N/H	Black N/H	Hispanic Latino	Diagnostic Group	Total	Female	Male	White N/H	Black N/H	Hispanic Latino
All	36,400.8	38,135.6	34,626.8	24,064.9	46,846.4	55,649.1	All	36,300.0	37,062.0	35,698.1	33,822.1	62,325.9	27,402.8
Cancer, all sites	11.7	10.4	13.6	7.8	17.2	19.0	Cancer, all sites	12.1	9.2	15.6	10.1	26.7	-
Oral Cavity & Pharynx	0.3	0.1	0.5	0.2	0.7	0.6	Oral Cavity & Pharynx	a	-	a	a	a	-
Lung & Bronchus	2.4	2.0	3.0	1.7	3.4	2.9	Lung & Bronchus	2.8	1.5	4.2	2.4	a	-
Diabetes	182.0	162.8	202.7	93.4	487.9	452.4	Diabetes	130.2	107.5	158.1	104.1	490.3	286.5
Alcohol & Drug Abuse	775.9	420.8	1,140.1	560.0	1,018.2	1,077.9	Alcohol & Drug Abuse	549.8	349.1	752.4	520.8	698.8	417.3
Major CVD	388.0	349.2	433.3	267.1	616.8	509.9	Major CVD	469.7	404.0	555.3	437.3	778.6	303.6
CHD	37.1	23.3	53.0	29.6	19.7	40.5	CHD	80.6	51.4	114.6	77.5	119.9	65.4
Acute MI	20.4	11.7	30.3	17.3	8.6	17.5	Acute MI	52.5	30.9	77.7	50.8	84.1	51.4
CHF	36.2	31.0	43.3	24.1	72.6	57.7	CHF	35.0	30.1	42.3	32.7	63.1	a
Stroke	19.0	16.9	21.6	14.6	15.2	18.8	Stroke	34.4	28.3	43.2	31.7	59.3	a
COPD	984.2	1,085.2	877.1	549.1	1,602.5	2,094.0	COPD	747.3	830.6	670.6	649.8	1,829.9	929.5
Asthma	663.2	732.3	587.7	320.6	1,218.6	1,545.2	Asthma	437.2	505.3	369.7	354.8	1,312.0	694.3
LD & Cirrhosis	5.2	2.7	7.8	3.5	4.0	12.7	LD & Cirrhosis	4.0	1.4	6.6	3.7	a	a

Notes Tables 14 & 15: Acute MI = Myocardial Infarction (Heart Attack); CHF = Congestive Heart Failure; COPD = Chronic Obstructive Pulmonary Disease; LD = Liver Disease a= data suppressed due to confidentiality. A dash (-) represents the number zero. Source: Data compiled by CT Dept Public Health

Table 15 shows hospitalization rates for the state and county for the same diagnostic categories. County rates are below the state rates for all categories except acute MI among both males and females, and among White non-Hispanic and Black non-Hispanic residents.

The rates provided in Table 15 represent admissions to any CT hospital. Within county hospitalization rates are lower for males overall but higher for males for most diagnoses, and for Black non-Hispanic residents than other racial/ethnic groups. The low hospitalization rates for Hispanic county residents may in part reflect underreporting of Hispanic ethnicity on hospital records.

In Middlesex County, Middletown and Clinton score below the average range for mental health, according to Health Equity Index data. Mental health scores are determined by the rates of treatment and hospitalization for mental illness as well as alcohol and drug induced deaths. Community safety and economic security are strongly associated, but numerous other community conditions are also correlated.

**Table 15 State and County Age-Adjusted Hospitalization Rates per 100,000 Residents by Gender and Race/Ethnicity, 2005-2009**

Connecticut							Middlesex County						
Diagnostic Group*	Total	Female	Male	White N/H	Black N/H	Hispanic Latino	Diagnostic Group	Total	Female	Male	White N/H	Black N/H	Hispanic Latino
All	10,036.5	11,180.6	9,078.6	9,114.1	14,351.4	11,583.8	All	8,975.0	10,001.6	8,164.5	8,898.3	12,445.2	5,613.6
Cancer, all sites	377.1	368.6	398.5	363.5	450.2	302.1	Cancer, all sites	364.6	350.1	397.7	366.3	359.6	179.2
Oral Cavity & Pharynx	6.4	3.8	9.4	6.2	8.3	4.1	Oral Cavity & Pharynx	5.4	2.3	9.0	5.1	a	-
Lung & Bronchus	42.9	38.4	49.6	42.7	46.7	26.2	Lung & Bronchus	38.8	33.8	45.0	39.2	36.2	a
Diabetes	132.9	112.6	157.1	97.3	403.5	249.6	Diabetes	94.4	80.0	113.4	85.9	252.1	166.0
Alcohol & Drug Abuse	139.3	84.8	196.4	143.3	160.1	129.5	Alcohol & Drug Abuse	95.4	67.0	124.0	99.6	134.6	48.6
Major CVD	1,401.8	1,111.2	1,773.9	1,313.4	1,986.6	1,509.6	Major CVD	1,280.8	987.5	1,657.0	1,254.7	1,628.0	654.2
CHD	406.5	265.9	578.4	392.3	396.8	427.1	CHD	402.3	250.7	584.2	387.7	332.4	247.8
Acute MI	163.0	115.9	221.9	158.0	153.0	180.0	Acute MI	170.2	118.8	237.3	167.9	137.8	95.0
CHF	172.8	144.3	214.2	154.6	306.7	230.6	CHF	128.7	114.0	149.7	126.1	209.0	102.9
Stroke	183.8	158.7	216.9	169.9	290.3	182.7	Stroke	170.0	142.5	206.5	167.9	243.0	40.3
COPD	277.8	297.6	258.2	222.8	515.9	548.5	COPD	180.2	186.8	177.7	175.7	309.3	169.4
Asthma	136.9	157.9	112.5	83.3	363.7	378.0	Asthma	62.3	73.8	50.0	57.5	165.4	101.3
LD & Cirrhosis	27.4	18.1	37.6	24.2	28.5	63.3	LD & Cirrhosis	21.2	14.9	28.0	21.7	26.5	a

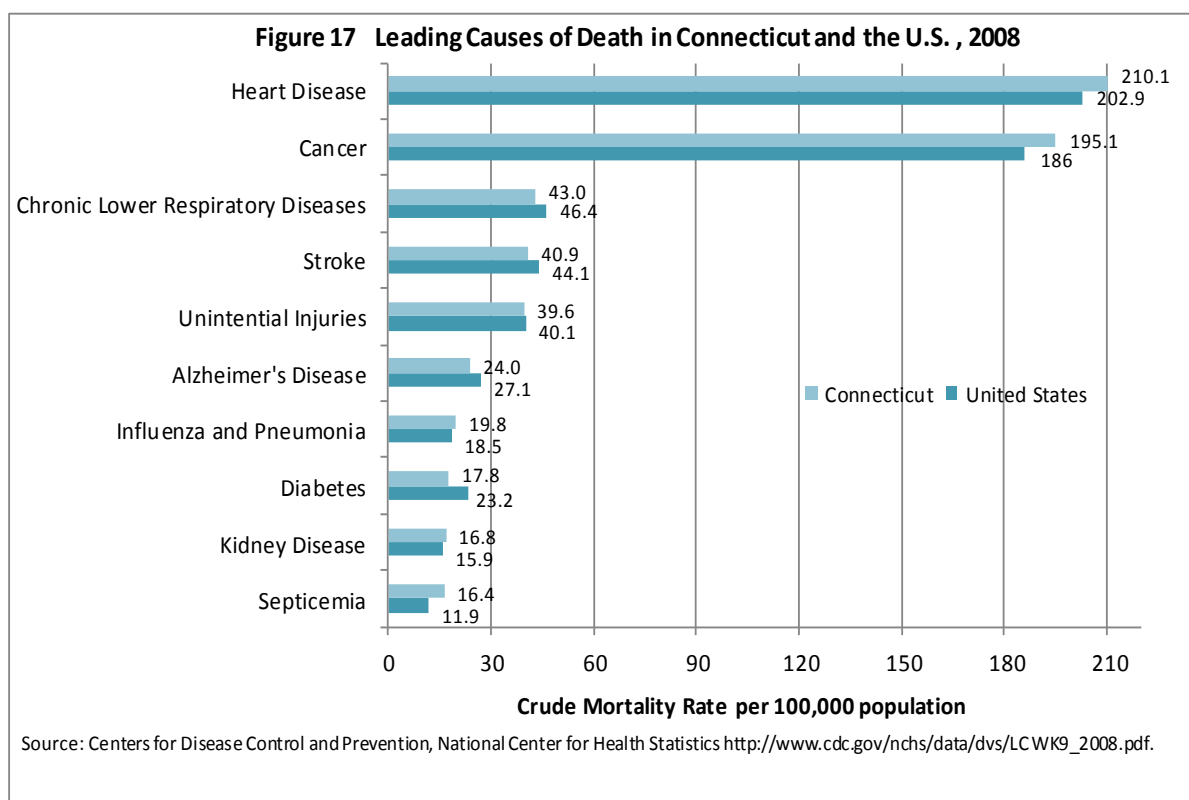
### ***Mortality and Leading Causes of Death***

Mortality data is highly useful in providing insight about priority health issues in a community by identifying the underlying causes of disease and monitoring changes in the leading causes of death over time. The leading causes of death in the county, state, and nation are closely linked to personal health behaviors, environmental and social factors, and the availability, accessibility, and utilization of quality preventive, primary, and specialty health care services.

Figure 17 presents the leading causes of death in the United States and Connecticut for 2008, based on crude rates. Although the 10 causes of death are not in the identical rank order, the underlying causes remain chronic conditions which are related to behavioral risk factors. This is especially true of physical activity; healthy eating; avoiding tobacco use, alcohol abuse, and drugs; managing stress; and other preventive lifestyle behaviors.

It is noteworthy that there are differences in the rank order of the leading causes of death in CT by gender and race/ethnicity. For example, in 2009 the leading cause of death for males of all races/ethnicities was cancer and for females it was heart disease. For both White males and females, the leading cause of death was heart disease, followed by cancer. For Black non-Hispanic and Hispanic or Latino residents, the leading cause of death was cancer for both genders, followed by heart disease. *Source: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, WISQARS Leading Causes of Death Reports, 1999-2009, <http://ebappa.cdc.gov/cgi-bin/broker.exe>.*

Figure 17 reflects crude mortality rates, which have not been age-adjusted. Crude mortality rates are useful in assessing the magnitude of the absolute number of deaths in a population, however they do not account for differences in rates that are attributable to differences in the age composition of the resident population. Municipalities with a higher proportion of older residents would be expected to have higher crude mortality rates from chronic diseases, as the incidence and prevalence of these diseases increase with age. Age-adjusted mortality rates (AAMR) correct for differences in age distribution of communities, and therefore give a more accurate representation of excess disease mortality.



Significant disparities in health status, including mortality rates from the leading causes of death and premature death, measured as Years of Potential Life Lost (YPLL) exist in the U.S., CT, and the county. A major goal of *Healthy People 2020* is to achieve health equity, eliminate disparities, and improve the health of all population groups.

AAMR and YPLL data for Middlesex County for the five year period 2005-2009, with state and county comparisons, follow in Tables 16a and 16b.

**Table 16a State and County Age-Adjusted Mortality Rates per 100,000 Residents by Gender and Race/Ethnicity, 2005-2009**

Connecticut							Middlesex County						
Cause of Death	Total	Male	Female	White N/H	Black N/H	Hispanic Latino	Cause of Death	Total	Male	Female	White N/H	Black N/H	Hispanic Latino
All	687.7	829.0	583.1	679.5	809.3	529.0	All	654.6	795.4	548.1	656.0	718.0	451.4
Malignant Neoplasms	170.1	206.2	147.1	171.9	190.5	108.4	Malignant Neoplasms	168.6	205.5	143.0	168.3	203.9	116.8
Diabetes Mellitus	16.7	19.7	14.4	15.1	35.9	24.5	Diabetes Mellitus	13.8	16.9	11.3	13.8	10.9	18.9
Alzheimer's Disease	16.6	13.8	17.8	17.1	15.1	8.9	Alzheimer's Disease	19.6	16.0	21.1	20.0	14.6	0.0
Major CVD	217.4	264.4	182.1	216.4	253.2	157.5	Major CVD	205.4	254.9	167.8	206.6	201.7	167.8
Pneumonia & Influenza	17.2	21.0	15.0	17.2	18.0	13.7	Pneumonia & Influenza	12.7	16.4	10.6	13.1	5.7	0.0
CLRD	34.5	38.9	31.9	35.9	24.4	20.5	CLRD	32.2	34.6	30.3	32.2	46.0	20.0
CLD & Cirrhosis	7.2	10.0	4.7	7.1	6.3	11.0	CLD & Cirrhosis	6.8	9.9	4.4	6.8	6.7	8.0
Nephritis, nephrotic syndrome, nephrosis	13.3	17.8	10.7	12.3	26.9	12.3	Nephritis, nephrotic syndrome, nephrosis	11.6	16.1	9.1	11.0	31.2	7.7
Accidents	32.9	47.1	20.4	33.9	32.0	29.4	Accidents	29.8	39.3	20.6	31.0	19.0	20.3
Alcohol Induced	5.1	7.8	2.6	5.2	4.6	5.2	Alcohol Induced	5.7	7.8	3.7	5.8	5.1	6.1
Drug Induced	11.1	15.1	7.1	12.2	10.3	10.0	Drug Induced	11.0	15.1	6.9	12.2	2.7	3.3

*Data compiled by Connecticut Department of Public Health*

Age-adjusted all-cause mortality rates for the county were lower as compared to the state, including rates for male, female, White non-Hispanic, Black non-Hispanic, and Hispanic Latino. County rates are lower than state rates for many causes of death including malignant neoplasms (cancer), diabetes mellitus, major CVD, pneumonia and influenza, chronic lower respiratory disease, kidney diseases, and accidents, and comparable to the state for chronic liver disease including cirrhosis, and alcohol and drug induced deaths. County mortality rates are above the state for Alzheimer's disease and alcohol induced deaths.

Within Middlesex County, AAMR comparisons by gender and race/ethnicity indicate higher all-cause mortality rates for males and for Black non-Hispanics (both genders). Within the county, males also had higher rates for all diagnostic categories other than Alzheimer's disease. White non-Hispanic residents had higher mortality rates for Alzheimer's disease, major CVD, pneumonia and influenza, accidents, and drug induced deaths. Black non-Hispanic residents had higher rates for malignant neoplasms, chronic lower respiratory disease, and kidney diseases, while Hispanic Latino residents have higher rates for diabetes mellitus, chronic liver disease including cirrhosis, and alcohol induced deaths.

Table 16b represents the years of potential life lost to age 75, or premature death, based on the leading causes of death in the state and county. By cause of death, the largest impact in the state and county is manifested by malignant neoplasms, followed by major CVD, accidents, and drug-induced deaths. Males and Black non-Hispanic residents have the highest years of potential life lost both in the state and county overall.

**Table 16b State and County Age-Adjusted Years of Potential Life Lost to Age 75  
by Gender and Race/Ethnicity, 2005-2009**

Connecticut							Middlesex County						
Cause of Death	Total	Male	Female	White N/H	Black N/H	Hispanic Latino	Cause of Death	Total	Male	Female	White N/H	Black N/H	Hispanic Latino
All	5,315.0	6,710.9	3,956.3	4,766.3	8,827.5	5,705.6	All	4,509.3	5,718.5	3,341.2	4,437.2	8,676.0	2,969.1
Malignant Neoplasms	1,161.6	1,208.5	1,121.5	1,149.3	1,579.0	954.4	Malignant Neoplasms	1,179.4	1,226.4	1,139.4	1,169.5	1,997.9	772.6
Diabetes Mellitus	103.9	136.5	73.0	86.9	254.8	144.3	Diabetes Mellitus	70.5	94.0	47.9	71.3	87.8	50.3
Alzheimer's Disease	7.1	8.3	6.0	7.4	2.2	11.3	Alzheimer's Disease	6.7	12.7	1.2	6.8	12.7	0.0
Major CVD	904.6	1,273.9	557.5	830.1	1,757.1	888.8	Major CVD	850.9	1,256.0	462.5	825.2	1,675.1	752.3
Pneumonia & Influenza	51.5	58.3	45.5	42.1	108.5	70.2	Pneumonia & Influenza	44.5	47.0	41.5	49.8	0.0	0.0
CLRD	108.9	113.2	105.1	105.7	160.5	76.7	CLRD	73.5	81.9	66.1	69.1	200.2	98.5
CLD & Cirrhosis	110.2	154.5	68.2	110.5	93.4	160.8	CLD & Cirrhosis	110.4	143.7	78.0	110.4	138.2	207.8
Nephritis, nephrotic syndrome, nephrosis	53.7	66.4	41.9	38.5	170.0	94.9	Nephritis, nephrotic syndrome, nephrosis	46.2	65.7	27.5	36.2	235.9	61.7
Accidents	840.5	1,243.9	435.3	870.8	832.7	837.1	Accidents	717.7	1,012.4	426.3	757.9	882.8	193.6
Alcohol Induced	110.5	162.1	61.4	116.2	80.8	112.4	Alcohol Induced	134.8	181.8	88.1	134.8	151.4	192.7
Drug Induced	397.8	557.8	237.8	454.8	312.1	330.2	Drug Induced	409.3	600.8	218.8	461.8	94.7	95.0

*Data compiled by Connecticut Department of Public Health*

### ***Healthy People 2020 Leading Health Indicators***

*Healthy People 2020* includes 26 Leading Health Indicators (LHIs) which will be tracked, measured, and reported regularly throughout the next decade at the national and state level. Baseline data and targets related to the Community Transformation Strategic Directions are provided in Table 17 for future reference.

The most recent available county and/or state baseline data indicate that the following *Healthy People 2020* LHI targets have been met: 1) persons with a primary care provider, 2) adult colorectal screening, 3) children exposed to secondhand smoke (proxy measure), 4) adults meeting current physical activity guidelines, 5) adult obesity, 6) adolescent obesity, 7) high school graduation rates, 8) adult binge drinking, and 9) adolescents smoking cigarettes in the past 30 days. Data indicate the following targets have not yet been achieved: 1) persons with medical insurance, 2) adolescents using alcohol or any illicit drugs during the past 30 days, and 3) current adult cigarette smokers.

**Table 17**

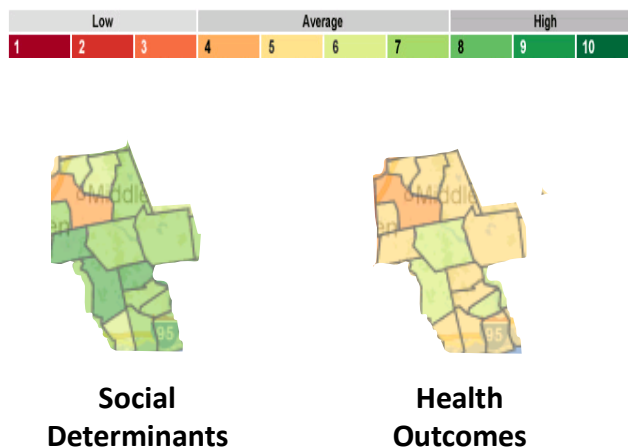
<b>HEALTHY PEOPLE 2020 INDICATOR (LHI Reference Number)</b>	<b>Target</b>	<b>National Baseline</b>	<b>CT/County Baseline</b>
<b>Access to Health Services:</b>			
Persons with medical insurance (AHS-1.1)	100.0	83.2	91.1/93.1
Persons with a usual primary care provider (AHS-3)	83.9	76.3	87.3 (CT) Adults
<b>Clinical Preventive Services:</b>			
Adults who receive a colorectal cancer screening based on the most recent guidelines (C-16)	70.5	54.2	73.0 (CT)
Adults with hypertension whose blood pressure is under control (HDS-12)	61.2	43.7	n/a
Adult diabetic population with an A1c value greater than 9 percent (D-5.1)	14.6	16.2	n/a
<b>Environmental Quality:</b>			
Children aged 3 to 11 years exposed to secondhand smoke (TU-11.1)	47.0	52.2	37.1 (CT) MS students
<b>Nutrition, Physical Activity, and Obesity:</b>			
Adults who meet current Federal physical activity guidelines for aerobic physical activity and muscle-strengthening activity (PA-2.4)	20.1	18.2	53.1 (CT)
Adults who are obese (NWS-9)	30.6	34.0	23/23
Children and adolescents who are considered obese (NWS-10.4)	14.6	16.2	10.4 (CT) HS students
Total vegetable intake for persons aged 2 years and older (NWS-15.1)	1.1 cup equivalent/1,000 calories	0.8 cup equivalent/1,000 calories	n/a
<b>Social Determinants:</b>			
Students who graduate with a regular diploma 4 years after starting 9th grade (AH-5.1)	82.4	74.9	82.2 (CT)
<b>Substance Abuse:</b>			
Adolescents using alcohol or any illicit drugs during the past 30 days (SA-13.1)	16.5	18.3	43.5 (CT) HS Students
Adults engaging in binge drinking during the past 30 days (SA-14.3)	24.3	27.0	18.9 (CT)
<b>Tobacco:</b>			
Adults who are current cigarette smokers (TU-1.1)	12.0	20.6	15.4 (CT)
Adolescents who smoked cigarettes in the past 30 days (TU-2.2)	16.0	19.5	15.3 (CT) HS Students

Sources: <http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=1#11>; CTDPH Healthy Connecticut 2010; BRFSS 2007-2010; 2009 CT Youth Behavior and Tobacco Components; 2012 County Health Rankings; 2008-2010 ACS 3 Year Estimates; National Center for Education Studies. MS= Middle School; HS=High School.

## Overview of Health Disparities & Inequities in Middlesex County

### Middlesex County Social Determinants and Health Outcomes

Figure 18



In spite of the overall favorable health status in the county, health disparities and inequities are apparent, as they are in municipalities throughout Connecticut. As noted in the previous sections of this report, health-related lifestyle behaviors, health status and outcomes are all strongly influenced by the social conditions that exist within a given community.

These conditions, also known as the social determinants of health, include such factors as civic involvement, community safety, economic security, education, employment, environmental quality and housing. The Health Equity Index (Index) is a web-based assessment tool developed by the Connecticut Association of Directors of Health (CADH) that can be used to identify the social, economic, political, and environmental conditions within a community that are most strongly associated (or correlated) with specific health outcomes. Use of the Index findings facilitates collaboration among public health, community and civic leaders and residents to collectively develop and implement strategies to improve community-level policies and practices affecting health.

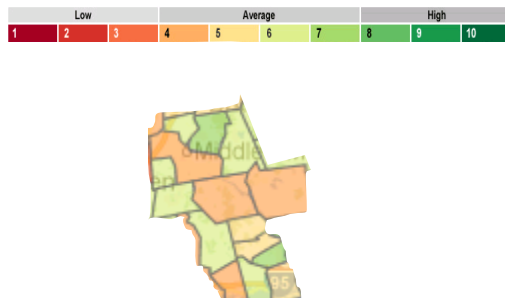
The Index provides data, scores, correlations and GIS mapping for all 169 communities in Connecticut. The scores for each social determinant and health outcome are calculated on a 10-point scale (based on decile values) with 1 (red) indicating the least desirable community social conditions or health outcomes, and 10 (green) indicating the most desirable. A score of 5 is the median value for the state.

As shown in Figure 18, for Middlesex County, the overall average social determinant score representing community conditions is 7, well above the state average. Of all 15 municipalities in the county, only Middletown scores below the state average. A detailed narrative of community conditions was previously presented in the Population and Demographics overview section of this report, including education, economic stability, employment, housing, demographic trends, health insurance coverage, and community safety. Health outcome scores within the county vary widely, however the county average for all health outcome indicators is 5, equivalent to the state median.

For this report, the Health Equity Index was used to provide additional insight on the health outcomes most closely related to the five CTG health-related strategic directions: tobacco-free living, healthy eating and active living, quality, high impact clinical and other preventive services, social and emotional wellness, and healthy and safe physical environments. The Index health outcomes include Accidents and Violence, Cardiovascular Disease, Diabetes, Health Care Access, Life Expectancy, Liver Disease, Mental Health, Renal Disease, and Respiratory Illness.

## Accidents and Violence

**Figure 18a**



The composite Index health outcome score for Accidents and Violence in a community include statistical data on: Accidents, Total Injuries and Homicides and Legal Interventions. While most of the towns in Middlesex County score above the state average score of 5, the scores for Clinton (3), East Haddam (2), Haddam (2) and Middletown (2) are well below the state average of 5 (Figure 18a).

**Table 18a**

Community Conditions in Relation to Accidents and Safety in Middletown CT	
Condition	$R_s$
Civic Involvement	0.57
Education	0.55
Economic Security	0.53
Community Safety	0.48
Environmental Quality	0.42
Housing	0.40
Employment	0.37

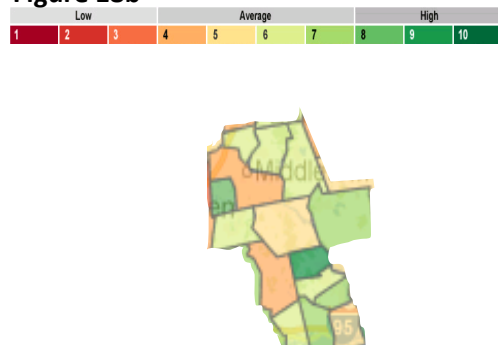
Source: CADH HEI

The level of accidents and violence in a community can be correlated to a number of community conditions. While these correlations do not imply a direct cause and effect relationship, a strong correlation indicates an association between a health outcome and a specific community condition. Spearman's Rank Correlation Coefficient ( $R_s$ ) values above 0.3 (either positive or negative) are considered statistically significant and could warrant further exploration of contributing factors. Table 18a shows the association between community conditions and accidents and safety in Middletown.

Interpretation of these values becomes more meaningful when specific census block groups within Middletown are examined. Scores can be compared across census block groups and across individual indicator measures to determine the higher risk geographic areas and population groups.

## Cardiovascular Disease

**Figure 18b**



**Table 18b**

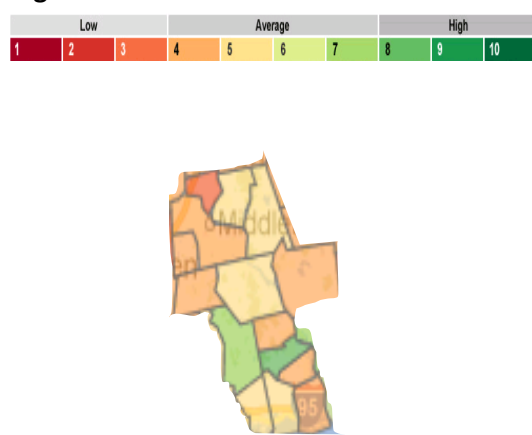
Community Conditions Related to Cardiovascular Disease in Killingworth CT	
Condition	R <sub>s</sub>
Education	0.51
Economic Security	0.47
Civic involvement	0.42
Environmental Quality	0.36
Community Safety	0.33

Source: CADH HEI

Index scores for cardiovascular disease are calculated using mortality (AAMR) and premature death rates (YPLL) attributed to the disease. Of the towns in Middlesex County, only Middletown and Killingworth show rates of the disease that are somewhat higher than the state as a whole. Index scores for CVD in Killingworth range from 2 to 7 across census block groups (Figure 18b). The rates of cardiovascular disease in both of these towns can be correlated to numerous community conditions, with correlations to education and economic security being the strongest (Table 18b).

## Diabetes

**Figure 18c**



**Table 18c**

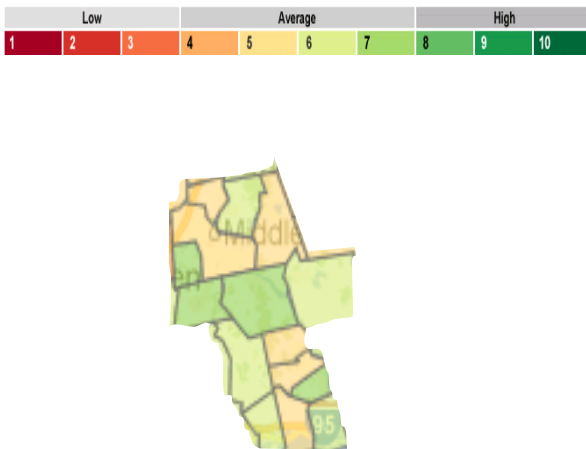
Community Conditions Related to Diabetes in Cromwell CT	
Condition	R <sub>s</sub>
Education	0.38
Economic Security	0.33
Environmental Quality	0.31

Source: CADH HEI

The Diabetes Index scores for each town represent the mortality rate for the disease. As can be seen in Figure 18c, Cromwell has the highest mortality rate due to diabetes in the county, with Killingworth and Deep River having lower scores than the state median for diabetes. The levels of diabetes in Cromwell are significantly correlated to a number of community conditions, with education measures having the strongest correlation (Table 18c).

## Health Care Access

**Figure 18d**



**Table 18d**

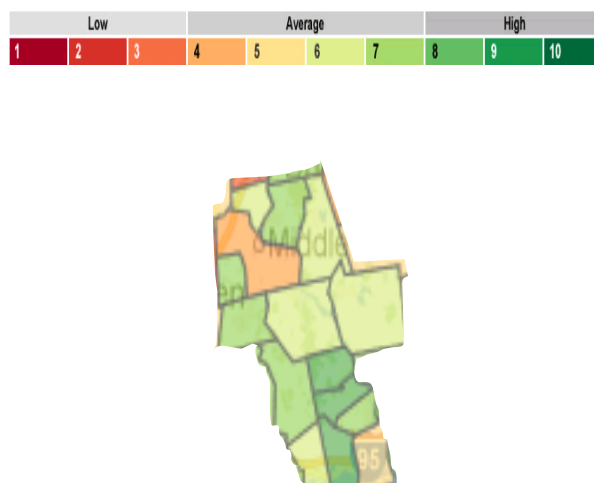
Community Conditions Related to Health Care Access in Westbrook CT	
Condition	R <sub>s</sub>
Economic Security	0.60
Education	0.52
Housing	0.51
Community Safety	0.50
Civic Involvement	0.49

Source: CADH HEI

Measures of health care access include: the number of emergency room visits without insurance, the number of emergency room visits for primary care services, and the numbers of births that have had inadequate pre-natal care. As seen in Figure 18d, all of the towns and cities in Middlesex County score close to the state average for access to health care. Four of the towns, Durham, Essex, Haddam and Middlefield score a 7, which indicates a higher percentage of their residents have health care access than the state as a whole. For Westbrook, a number of community conditions strongly correlate to a lack of health care access (Table 18d).

## Life Expectancy

**Figure 18e**



**Table 18e**

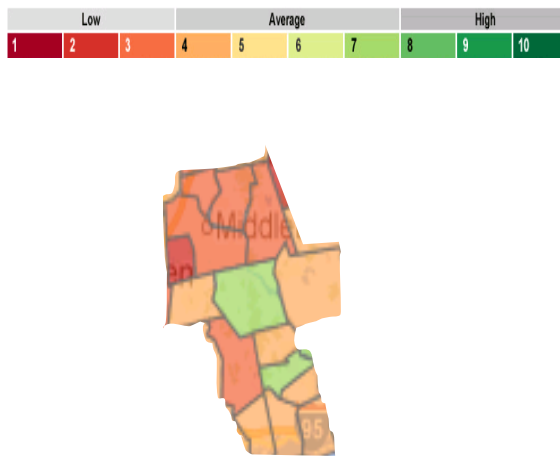
Community Conditions Related to Life Expectancy in Middletown CT	
Condition	R <sub>s</sub>
Education	0.64
Economic Security	0.60
Civic Involvement	0.50
Community Safety	0.41
Employment	0.35
Environmental Quality	0.34
Housing	0.31

Source: CADH HEI

While life expectancy varies in Middlesex County, with Index scores ranging from 4 to 8, life expectancy in most towns is greater than or equal to the state average (Figure 18e). With an Index score of 4, Middletown has the lowest Index score for life expectancy in the county. Table 18e shows life expectancy for the residents of Middletown correlated to all 7 of the community conditions on the Index, with education having the strongest association.

## Liver Disease

**Figure 18f**



**Table 18f**

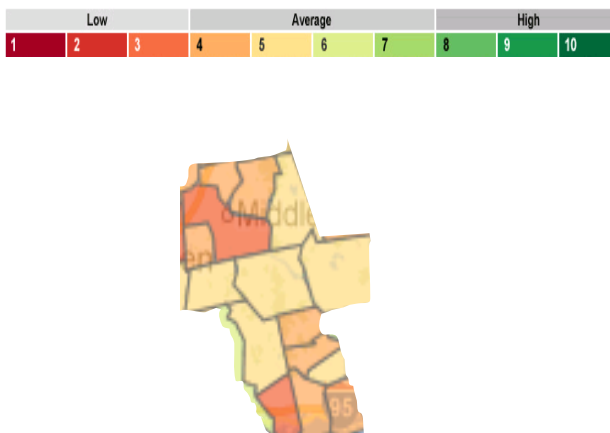
Community Conditions Related to Liver Disease in Middlefield CT	
Condition	R <sub>s</sub>
Civic Involvement	0.33
Environmental Quality	0.32
Community Safety	0.31

Source: CADH HEI

Deaths due to chronic liver disease and cirrhosis of the liver are problematic for a number of communities in Middlesex County, with Index scores ranging from 2 in Middlefield to 7 in Haddam and Deep River (Figure 18f). Middlefield has the highest rate of any municipality in the county. Community conditions associated with liver disease include those listed in Table 18f.

## Mental Health

**Figure 18g**



**Table 18g**

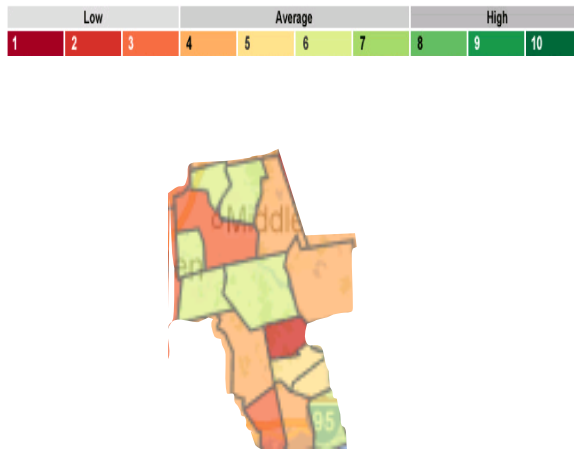
Community Conditions Related to Mental Health in Clinton CT	
Condition	R <sub>s</sub>
Community Safety	0.55
Economic Security	0.49
Environmental Quality	0.45
Civic Involvement	0.45
Education	0.42
Housing	0.37

Source: CADH HEI

Mental health scores are determined by the rates of emergency department visits and hospitalization rates for mental illness as well as alcohol and drug induced deaths. In Middlesex County, Middletown and Clinton score below the average range for mental health (Figure 18g). Both community safety and economic security are strongly associated with mental health, but numerous other community conditions are also correlated (Table 18g).

## Renal Disease

**Figure 18h**



**Table 18h**

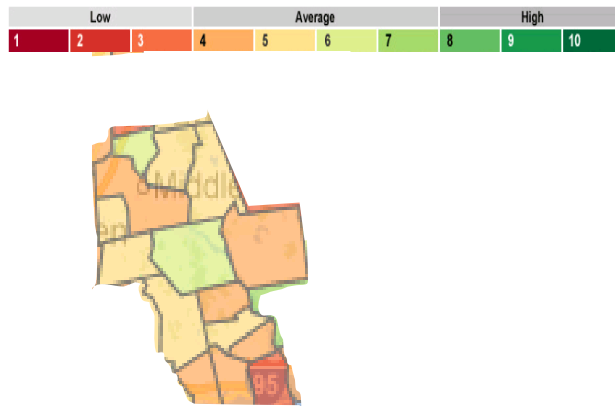
Community Conditions Related to Renal Disease in Chester CT	
Condition	R <sub>s</sub>
Community Safety	0.47
Environmental Quality	0.45
Education	0.39
Housing	0.33
Civic Involvement	0.32
Economic Security	0.30

Source: CADH HEI

Scores for renal disease are calculated from the mortality rates from nephritis, nephrotic syndrome, and nephrosis. As seen in Figure 18h, the rates of death from renal disease in Middlesex County are highest in Chester. In Chester, renal disease is most strongly associated with community safety and environmental quality (Table 18h).

## Respiratory Illness

**Figure 18i**



**Table 18i**

Community Conditions Related to Respiratory Illness in Old Saybrook CT	
Condition	R <sub>s</sub>
Economic Security	0.42
Education	0.41
Civic Involvement	0.31

Source: CADH HEI

The rates of deaths from chronic lower respiratory disease are slightly below the state average for a large portion of Middlesex County, with the highest rates being found in Old Saybrook (Figure 18i). The community conditions that more strongly correlate with respiratory illness are economic security and education (Table 18i).

## Description of Local Health-Related Programs and Services

As previously noted, Connecticut lacks a county governance structure, therefore health-related programs and services are provided at the municipal, regional, or state level. This includes a diversity of public health programs and services provided by health departments and districts serving Middlesex County (districts serve two or more municipalities). The majority of the county's communities are served by regional health districts: the Chatham Health District provides local public health services to the Middlesex County towns of East Haddam, East Hampton, Haddam and Portland; Connecticut River Area Health District covers Clinton, Deep River and Old Saybrook. The Middletown Health Department and Cromwell Health Departments serve Middletown and Cromwell, respectively. The county's six part-time health departments are located in Chester, Durham, Essex, Killingworth, Middlefield, and Westbrook.

Local health departments and districts provide essential public health services at the municipal level throughout Connecticut. These governmental entities are separate from the Connecticut Department of Public Health (DPH), however they are linked by state statute in several important ways: approval of appointments of local directors of health by the Commissioner of Public Health; mandates to carry out critical public health functions in the areas of infectious disease control, environmental health, etc.; legal authority to levy fines and penalties for public health code violations and to grant and rescind license permits (such as for food services establishments or septic systems); funding for prevention and education programs and services to promote and improve the health of residents in their communities.

Core services provided by all local health departments and districts serving county residents (either directly or by contract) include: immunization services; childhood lead poisoning prevention and control; communicable disease prevention and control (Tuberculosis, Sexually Transmitted Infections, etc.); licensing and inspections for food service establishments and vendors; public health emergency planning including mass dispensing/vaccination; enforcement of public health codes and regulations, including inspections for compliance with health standards; and health information, education, and screening services.

Resources that support good health are available in every community. These community resources, often referred to as community assets, frequently include organizations, physical infrastructure, and institutions. There is a wide variety of community assets provided by other agencies and organizations within the county.

Asset mapping is a process of identifying these community assets and presenting them in a visual context. Geographical asset maps show community resources geographically placed on a map; thematic asset maps group resources based upon specified criteria or focus areas. Asset mapping provides a useful starting point for evaluating what services or providers exist for County residents; this information can lead to a strategic planning process for future program or resource development. Since Middlesex County is home to so many groups of people, recognition that many

kinds of assets are important to different populations and interest groups is critical to creating a complete picture of the County.

For the purpose of this assessment, a community asset is identified as a physical structure or place, or a business, institution or organization that provides a service that aligns with the 5 CTG Strategic Directions:

- Healthy Eating Active Living
- Tobacco Free Living
- Social and Emotional Wellness
- High Impact Quality Clinical or Other Preventive Services
- Healthy and Safe Physical Environment

Community assets were identified through a search of the United Way of Connecticut online database at [www.211ct.org](http://www.211ct.org), Google web searches, windshield surveys, and discussion with community members. As previously mentioned, the United Way of CT Infoline 2-1-1 is an online searchable community resource database of health and human service providers, agencies, and organizations. Infoline 2-1-1, with about 4,600 health and human service providers providing over 48,000 programs and services throughout Connecticut, is the most comprehensive database available and is updated regularly. The system is, however, dependent on service providers supplying comprehensive and up-to-date information. Source:

<http://www.211ct.org/AboutUs/Default.asp> The Healthy and Safe Physical Environment Strategic Direction may be addressed by the Middlesex County Coalition on Community Wellness or another community partner at a later date.

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### ***Geographical Asset Maps***

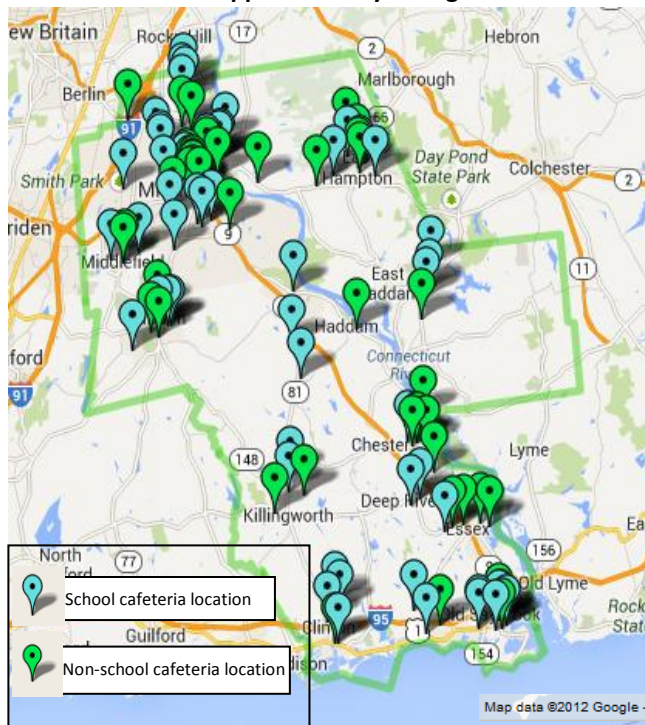
Assets were identified geographically throughout the fifteen municipalities in Middlesex County; state assets were identified if service was provided within a Middlesex County municipality (Figures 19a – 19e). Federally or state subsidized food assistance programs (Women Infants and Children, State Nutrition Assistance Program) are not shown on the geographical map. Geographical asset maps provide a visual depiction of the density of assets, as well as an understanding of where assets exist throughout the county. Middlesex County is outlined, and major roadways, waterways, cities and towns are also shown. Individual town boundaries are not shown. Names and addresses of assets depicted on the maps, broken out by town, can be found in Appendices 6a – 6e.

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### ***Healthy Eating***

Healthy Eating locations are separated into school and non-school assets through use of differently colored location markers, as seen in Figure 19a. School cafeterias and senior congregate meal sites are provided authoritative dietary and nutrition from the *Dietary Guidelines for Americans*, which forms the basis of federal nutrition programs. *Dietary Guidelines for Americans* is published jointly

**Figure 19a Middlesex County Locations that Support Healthy Eating**



pantries are also included.

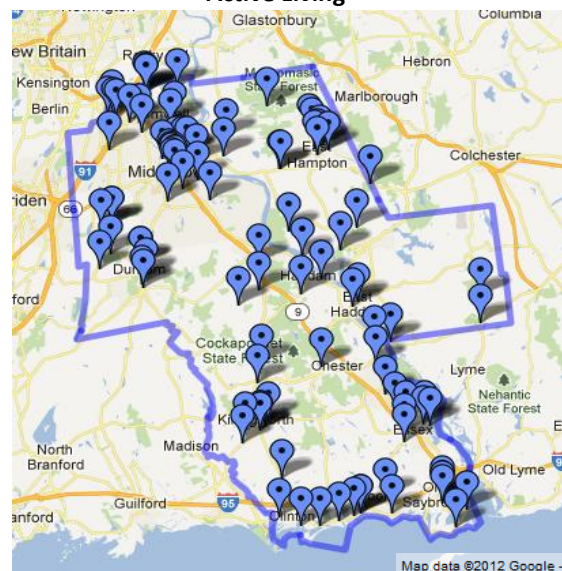
Although Figure 19a shows large areas without location markers, every town in Middlesex County has assets that support healthy eating.

## Active Living

Active living locations are available in great number throughout the county, with numerous available at low or no cost. Many state parks have activity areas open year round, encouraging use by various sports enthusiasts. Additional resources for physical activity not included on the asset map are school district recreational facilities, often open for public use when not in use for school sports events. Water enthusiasts in Middlesex County can choose fresh water streams and ponds, including a former granite quarry, or any of several indoor pools. Cold weather sports include cross country skiing and snowmobiling. Private fitness clubs provide a range of programs to meet the interests of residents in their area. Most of these active living assets are available to both individuals and families. Due, in part, to the large number of local

every 5 years by the U.S. Departments of Health and Human Services (HHS) and Agriculture (USDA), as mandated by Congress. School food service personnel receive food safety training, and school and congregate meal site management staff must obtain Qualified Food Operator certification to ensure proper and safe preparation and cooking of food served at the facility. School cafeterias and senior congregate meal sites are inspected by the local health department or district to ensure sanitation compliance with the Connecticut Public Health Code. Organic grocery stores and restaurants that specifically promoted support of specialty diets such as gluten free, vegan/ vegetarian or local produce are located, as well as farmers' markets providing locally grown fresh produce. Soup kitchens, municipal food banks and food

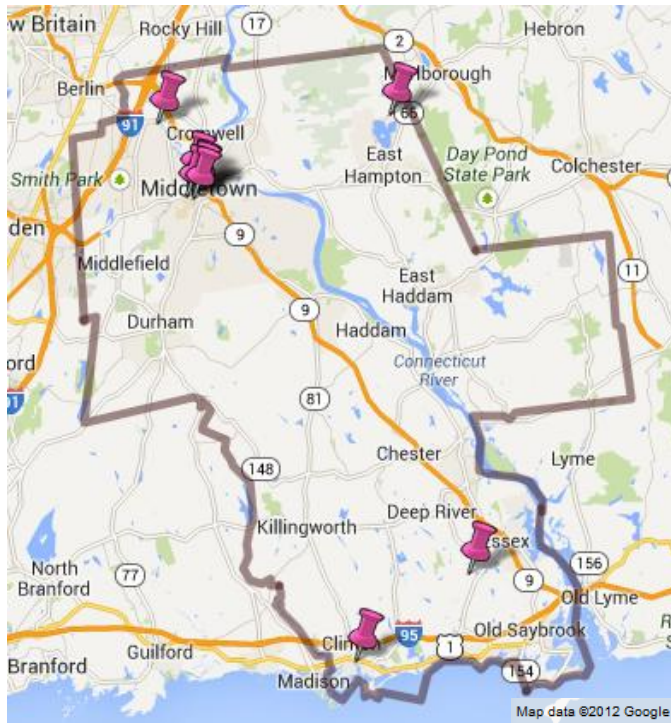
**Figure 19b Middlesex County Locations that Support Active Living**



and state parks in Middlesex County, each town has assets that support active living.

## ***Tobacco-Free Living***

**Figure 19c Middlesex County Locations that Support Tobacco-Free Living**



Few programs to encourage or support tobacco cessation are offered in Middlesex County. Overall, smoking cessation services have expanded beyond the more traditional group support programs to include hypnotherapy. The American Lung Association of Connecticut has the Freedom from Smoking Online (<http://www.fffsonline.org>) a web-based smoking cessation program available throughout the state and accessible to residents of Middlesex County. The American Lung Association holds a national annual observance in November where smokers are encouraged to stop smoking for the day during the Great American Smokeout, and Connecticut offers a telephone-based cessation program through the CT QuitLine (1-800-

QUIT-NOW). <http://www.cancer.org/healthy/stayawayfromtobacco/greatamericansmokeout/index>.

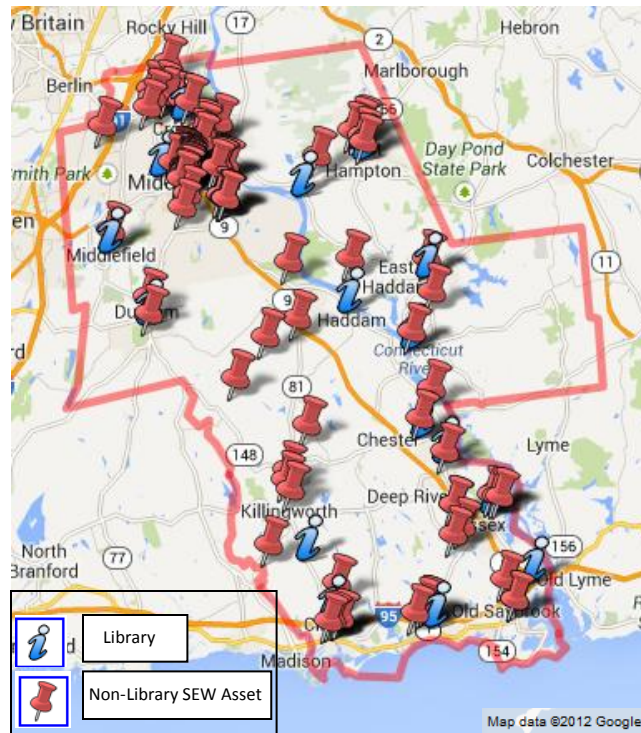
Connecticut's Smoke-Free Air Law, effective April 1, 2004, bans smoking in most restaurants and establishments that hold a liquor permit, health care facilities, child care centers, group daycare facilities, public college dormitories, theaters, buses and trains, as well as workplaces with five or more employees and buildings owned and operated by state and local government. Few towns in Middlesex County have local smoking cessation programs or services.

Source: <http://www.211ct.org/informationlibrary/Documents/ConnecticutsSmokeFreeAirLaw.asp>

## ***Social and Emotional Wellness***

Emotional wellness, an individual's ability to constructively handle emotions and maintain resilience to meet life's challenges, is reinforced with social supports provided in the community. Middlesex County's municipally provided social and emotional support system offers programs targeting families in financial need, youth, and seniors. Services are available to assist individuals and families. Library resources are available to the general public. Recovery programs supporting abstinence from addictive or overused substances are offered in towns throughout the county, often in neighborhood houses of worship. A therapeutic horse riding program serves people with cognitive, physical and emotional disabilities with the benefits of horseback riding and other horse-related activities. Use of volunteers at this facility ensures that the social and emotional benefit extends to both user and provider. Middlesex Hospital provides corporeal support with homecare and hospice, and emotional support through behavioral health clinics. Each town in Middlesex County has some type of service to address social or emotional wellness.

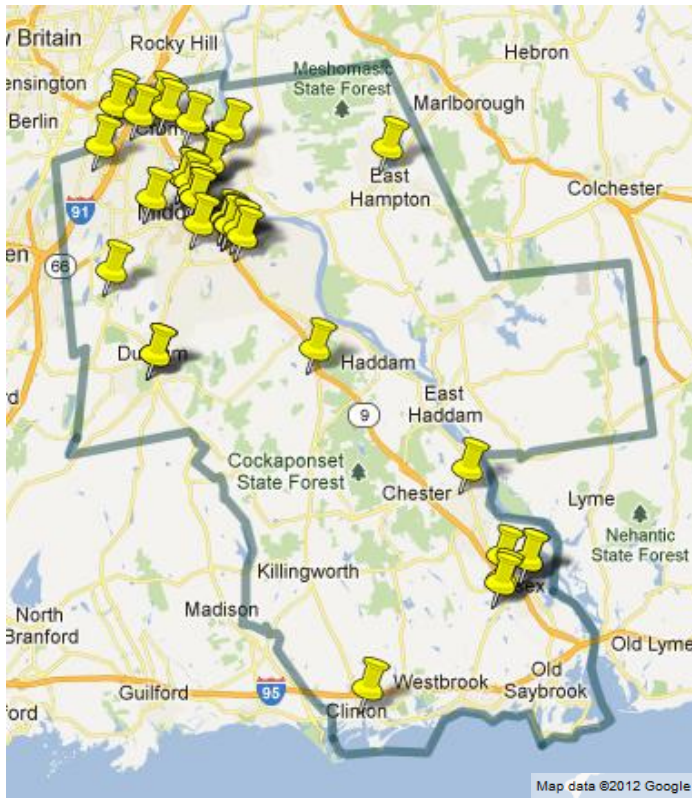
**Figure 19d Middlesex County Locations that Support Social and Emotional Wellness**



## ***High Impact Quality Clinical and Other Preventive Services***

High Impact Quality Clinical and Other Preventive Services (QCPS) are very effective in preventing disease or detecting disease early, when treatment is more effective. Through reduction of the burden of illness, death and disability, residents who receive QCPS live longer, healthier lives. Clinical interventions reduce the risk for adverse health conditions, screen to identify and treat a condition early to reduce severity and duration, and reduce complications from a condition or recurrence of a condition. Youth-focused services, including vaccination against childhood diseases or screening for asthma, provide long-term and potentially life-long benefits. Early identification of chronic conditions such as diabetes and obesity, and screening of at risk populations improve quality of life in a population that has a longer life expectancy than ever before.

**Figure 19e Middlesex County Locations that Support Quality Clinical Preventive Services**



QCPS in Middlesex County were identified as family practices, clinics, health centers and medical centers that provide routine diagnostic screening services. Quality clinical preventive services are viewed as a system through which a person can navigate through connected health care providers or ancillary services to ensure overall quality care and improvement of quality of life. Many Middlesex County medical providers have multiple local offices located throughout Middlesex County to ensure comprehensive quality care in remote county locations.

While there are numerous retail establishments that provide free blood pressure check machines or seasonal vaccines, locations identified as providing QCPS had available medical professionals, comprehensive medical

services, and a system of progressive medical care in the event of an emergent medical event needing further acute intervention.

Perhaps not surprisingly, many Middlesex County assets available to address the focus areas of healthy eating, active living, tobacco free living, social well-being and emotional wellness, clinical and other preventive services, are located in Middletown. Middletown has a population more than 300% larger than the population of the next largest Middlesex County town. Other county population centers have many assets that support the health of their residents, but given the overall rural nature of Middlesex County, residents must often travel some distance to partake of specific opportunities.

## Thematic Asset Map

This health focus area theme map depicts the types of businesses, entities, or agencies that provide services in the county. Thematic assets in Middlesex County addressing the needs in the identified focus areas are included in Figure 20. Assets were identified through conversation with community members, grouping of the geographical assets previously identified, and through windshield surveys. A brief description of each asset is provided in Appendix 7 for clarification.

**Figure 20 Thematic Overview of Focus Area Assets in Middlesex County**



## CTG Coalition Overview and Coalition Activities

The Middlesex County Coalition on Community Wellness was created in November of 2011 to collaboratively assess and prioritize health needs throughout Middlesex County, collectively develop a community action plan and mobilize resources to improve the health of county residents. As the lead and fiduciary agent for Middlesex County's Centers for Diseases Control and Prevention (CDC) Community Transformation Grant (CTG), Chatham Health District assembled leadership from six local health districts and departments within Middlesex County; Chatham Health District, Connecticut River Area Health District, Middletown Health Department, Cromwell Health Department, Durham Health Department and Essex Health Department. Staff from each of these local health departments partnered with smaller towns that did not have the capacity or ability to participate in the CTG process to ensure that smaller municipalities with limited staff are represented in the Coalition. These Coalition health departments are responsible to keep the smaller towns informed of the activities of the Coalition, and in turn, to present information on behalf of the town to the Coalition.

A partnership with Middlesex Hospital was created to increase the Coalition's outreach and collaborative power; the group was named the Middlesex County Coalition for Community Wellness.

Two "kick-off" events were held, designed to introduce the Coalition to organizations throughout Middlesex County. Due in part to the wide array of organizations in attendance, the kick-off events helped demonstrate the wealth of existing agencies in Middlesex County. The kick-off events presented several key CTG concepts:

- Healthy community options lead to healthy choices
- Changes to policy, systems, and environment are needed to create change in the community
- Community-wide communication can build better partnerships
- Sustainability of the Coalition can be secured through partnerships forged during the Health Needs Assessment process

A workgroup was created from the Coalition to identify and reach out to existing agencies, organizations and groups throughout Middlesex County, introduce the CTG project and extend the opportunity for involvement on the Coalition. Health, social, educational and municipal agencies and organizations were encouraged to bring their voice to build a strong Coalition to represent a wide range of Middlesex County residents. The well attended kick-off events created a point of contact between community organization representatives interested in hearing more about the Coalition and workgroup members who were available to conduct community presentations.

Presentations were made to several groups throughout 2012, inspiring many agency representatives to join the Coalition as regular attendees. Presentations were made to wide-reaching organizations such as the Middlesex Area Interagency Council (MAIC), a non-profit organization whose

membership encompasses human service providers, private organizations and representatives from area businesses, as well as the Community Impact Council (CIC), comprised of members from the United Way, Wesleyan University, Middlesex Community College, Liberty Bank Foundation, Aetna, Rockville Bank and the Middletown School System. As a direct result of the CIC presentation, opportunities were offered from CIC member agencies to present Coalition information to other similar organizations such as the Middlesex Coalition for Children, Opportunity Knocks and the Middlesex County Substance Abuse Action Council (MCSAAC). The subsequently-created partnership with MCSAAC led to Coalition involvement with the MCSAAC annual survey to assist with prioritization of the agency's future goals.

Coalition information was presented to members of the Middlesex Superintendent's Association. The group was energized and enthusiastic to hear about the opportunity to work collaboratively with the Coalition.

The collaboration with Middlesex County organizations and agencies led to a tremendous growth of the Coalition with members from MCSAAC, CIC, Middlesex Coalition for Children, Connecticut Department of Public Health, Wesleyan University, Middlesex Community College, St. Luke's Eldercare Services, Community Health Center, Opportunity Knocks, Middlesex Hospital, and the Middlesex Chapter of the NAACP. These agencies and many others send members consistently to monthly Coalition meetings. Meetings occur on a pre-identified schedule and rotate throughout the county to facilitate membership attendance.

Significant early Coalition accomplishments include:

- Bringing together county health departments and districts to work cooperatively on a county based health needs assessment
- The completion of nine community presentations that have led to the growth and diversity of the Coalition
- Successfully completing preliminary versions of the health needs assessment covering demographics, health indicators, health disparities, and asset identification and mapping
- Coalition representation inclusive of diverse populations, including seniors, disabled, veterans, LGBT, private sector business and municipal agencies

## **Middlesex County Policy, Systems, and Environmental Scan**

The health of individuals or a region can be affected by the policies that shape the community where one lives. Policies, whether local, state, or federal, transform our communities, and can impact the health of the population. Health-related policies dictate where smoking is allowed, if a neighborhood has a bus stop on the regional transit line, or whether alcohol is sold at the local corner store. Policies tend to reflect the culture of a geographical area. Laws (indicative of political will) may be enacted as a result of input (public will) from citizens; a street light is installed in a residential zone with heavy vehicular traffic so as to increase the safety of residents, a state law

requires food establishments to post nutrition and caloric information so that customers can make more informed choices for healthy meals, and federal standards for medications are developed to ensure the quality and safety of medicine. This public will leading to political will is discussed further in the next section.

Policy can exist in any of several different formats. It may be written or unwritten, enforced or discretionary, developed through a formal process of legislation or in a more casual fashion as a result of corporate or local culture. Policy can set forth specific language for acceptable or required activity or it can necessitate the provision of certain environmental changes. Written policies affecting Middlesex County were identified at the state level, at the regional level from multi-town agencies and organizations, and the local level in municipalities and single town agencies. As further elaborated below, policy and system information was also gathered through use of the CHANGE Tool, discussion with individuals and groups through interviews and focus groups, as well as via windshield surveys, photo journaling, and a walkability audit.

A review of the collected state and local health-related policies was conducted by the Middlesex County Coalition on Community Wellness to develop an understanding of the policies in place for Middlesex County residents. Specific attention was placed on policies that addressed the key CTG focus areas:

- tobacco free living
- active living and healthy eating
- social and emotional wellness
- healthy and safe physical environment
- high quality clinical and other preventive services

## ***Data Tools***

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Multiple methods of policy identification (data collection) were identified using data collection methods suggested in CDC's *"Community Health Assessment and Group Evaluation (CHANGE) - Building a Foundation of Knowledge to Prioritize Community Needs- An Action Guide"*. Criteria including town population, geographic location, Health Reference Group as identified by the Connecticut Health Foundation, and agency willingness to work with the Coalition were used to determine where specific types of policy data should be collected. Once data was collected, it was assigned to the appropriate CHANGE sector as described below. Key Coalition members were assigned as lead data collectors and community contacts. Nicknamed the "Cowgirls" in reference to the rural nature of Middlesex County, and a loose interpretation of the acronym for Middlesex County for Coalition on Community Wellness, the Cowgirls were each responsible for work group development and data interpretation within a specific CHANGE Sector.

## ***Policy Scan***

A review of state laws, policies and practices, typically focused on a specific topic. A policy scan related to the three strategic CTG mandated health priority areas (tobacco cessation, nutrition and

exercise, quality clinical and preventive services) was conducted by the Connecticut Association of Directors of Health. The scan, addressing the three health priority areas, aligned best practice recommendations with an analysis of current state agency practices and policies, current and proposed legislation, and other institutional or agency practices/policies.

### ***Walkability Audit***

A walkability audit is an assessment of the pedestrian access or “walkability” of the built environment in a community. A walkability audit was conducted by a private contractor hired by the City of Middletown in relation to Middletown’s Complete Streets Planning Committee.

<http://www.middletownplanning.com/documents/CompleteStreetsFinDraft031113.pdf>

### ***Key Informant Survey***

A key informant survey is a method of obtaining data from individuals who, through their professional organizational roles have knowledge about specific community concerns or people. Surveys were administered to individuals identified in management or leadership positions with various community organizations including government agencies, health and human service agencies, private businesses, and community groups. Survey respondents were asked to provide the name of other community leaders who might be interested in participating. Survey questions asked about health and quality of life in Middlesex County. (Appendix 8)

### ***Focus Group Interviews***

Focus Group Interviews were conducted with community groups and gatherings of individuals that represented a specific focus in the community. Questions reflected CDC Focus Areas and CHANGE Tool Sectors. (Appendices 9a, 9b, and 9c)

### ***Windshield Surveys***

Windshield surveys, observations made from a moving vehicle, allow a better understanding of the trends, stability, and changes that may affect the health of the community and can be used to assess general community needs. A windshield survey was conducted by two members of the Complete Streets Planning Committee and the private contractor hired by the City of Middletown in relation to the Complete Streets Master Plan.

### ***Photo Journaling***

Photo journaling, a method increasingly used in the field of public health, asks participants to represent their community or point of view by taking photographs that create images in order to tell a story. Middlesex County Coalition on Community Wellness members were asked to photo document positive and negative examples of health policies in their community. The photo could illustrate the presence or absence of either a written policy, such as a sign posted to allow or prohibit an activity, or an environmental policy, such as a farmer’s market. Photos were provided to Workgroup members for their consideration as supportive documentation for policies. (Appendix 11)

### ***CHANGE Tool***

The Community Health Assessment and Group Evaluation (CHANGE) Tool, developed by the Centers for Disease Control and Prevention, is described in the [CHANGE Action Guide](#) as: “The purpose of

CHANGE is to gather and organize data on community assets and potential areas for improvement prior to deciding on the critical issues to be addressed in the Community Action Plan.” CHANGE identifies five Sectors: Community at Large, Community Institution/Organization, Health Care, Schools, and Work Site, with a process to consider both policy and environmental assets and needs. The CHANGE Tool was administered in multiple locations throughout Middlesex County, and a summary statement of each sector was created to assist in the organization and review of the data. Each agency that hosted a CHANGE Tool discussion will receive a summary of their agency’s responses to be used as a benchmark and guide for further health and wellness-related policy growth and development. Not all privately owned businesses were willing to discuss the specifics or provide copies of their policies. The CHANGE Tool is available at:

<http://www.cdc.gov/healthycommunitiesprogram/tools/change/pdf/changeactionguide.pdf>

## ***Policy Overviews***

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### ***Limited Federal Policy Overview***

An exhaustive review of health-related policies is beyond the scope of this assessment. Recently enacted federal legislation, such as the Affordable Care Act, supports the CTG Strategic Directions through universal access to health insurance coverage, removal of exclusions to coverage, expanded provisions for preventive care and health screenings, and promotion of healthy eating through enhanced point-of-purchase nutrition information and labeling requirements.

Federal legislation such as the Child Nutrition and WIC Reauthorization Act of 2004 and Public Law 108-265 Section 204 - Local Wellness Policy mandate that local educational authorities (LEAs) participating in a program authorized by the Richard B. Russell National School Lunch Act (42 U.S.C.1751 et seq.) or the Child Nutrition Act of 1966 (42 U.S.C. 1771 et seq.) establish a school wellness policy that: 1) Includes goals for nutrition education, physical activity, and other school-based activities that are designed to promote student wellness in a manner that the LEA determines is appropriate; 2) Includes nutrition guidelines selected by the LEA for all foods available on each school campus under the LEA during the school day with the objectives of promoting student health and reducing childhood obesity; 3) Establishes a plan for measuring implementation of the local wellness policy, including designation of one or more persons within the LEA or at each school, as appropriate, charged with operational responsibility for ensuring that the school meets the local wellness policy; and 4) Involves parents, students, and representatives of the school food authority, the school board, school administrators, and the public in the development of the school wellness policy. In addition to legislation, a multitude of federal and state agencies provide technical guidelines and evidence-based standards that facilitate the development of programs, systems, and policies aligned with the CTG Strategic Directions.

## ***State Policies in support of Tobacco Free Living***

In all Connecticut communities, tobacco-free public and private school campuses are required pursuant to CT General Statutes (CGS) Section 19a-342. Furthermore, in accordance with Indoor Clean Air Act provisions, CT statutes also prohibit tobacco use in all municipal facilities, health care facilities, child care centers, group day care facilities, public college dormitories, theaters, buses and trains, restaurants and bars, and businesses employing five or more persons. Additional disincentives for tobacco use include laws prohibiting the sale or possession of tobacco products by minors (persons under age 18); a ban on placement of cigarette vending machines in areas, facilities or businesses frequented by minors; and significant taxes levied on tobacco products. More specific information on state statutes and regulations that support tobacco-free living are available at: <http://www.jud.ct.gov/lawlib/law/smoking.htm>.

## ***State Policies in support of Healthy Eating and Active Living***

A summary of bills enacted in the CT State Legislature\* over the past decade that support this Strategic Direction follows:

Bill #: H6156 Enacted: 2011 Abstract: Concerns certified farmers' markets, creates portability for a food service permit held by farmers, enables farmers to readily sell their goods at multiple farmers' markets. "Farmers' market" means a cooperative or nonprofit enterprise or association that consistently occupies a given site throughout the season or that occupies a given site for any given day or event and that operates principally as a common marketplace for a group of farmers, at least two of whom are selling Connecticut-grown fresh produce, to sell Connecticut-grown farm products in conformance with the applicable regulations of CT state agencies.

Bill #: S373 Enacted: 2006. Abstract: Concerns healthy food and beverages in schools, authorizes a percentage of funds per lunch served in a prior school year by a school district, the regional vocational-technical school system or the governing authority of a state charter school, magnet school or endowed academy, relates to the National School Lunch Program participation.

Bill #: S204 Enacted: 2006 Abstract: Promotes the physical health needs of students, allows local and regional boards of education to adopt guidelines to coordinate services and programs in order to address the physical health needs of students, provides that school boards may implement them by the 2007-08 school year and have a plan in place for each successive school year.

Bill #: HB5344 Enacted: 2004 Abstract: Concerns childhood nutrition in schools, recess and lunch breaks; requires minimum time limits for school recess and lunch breaks; requires schools to make healthy food available to students; includes low-fat food and drinks, natural fruit juices and water, and fresh and dried fruit.

As an indicator of political and public will, there have also been a number of proposed state bills in support of active living and healthy eating in CT communities that have not been enacted\*, including:

Bill #: H5696 Dead: 2011 Abstract: Concerns the reform of physical education in public schools, combats childhood obesity by expanding the activities that may be included in physical education class.

Bill #: S400 Dead: 2009 Abstract: Concerns access to health and nutritional information in restaurants, educates consumers about the nutritional content of menu items before they order.

Bill #: S1080 Vetoed: 2009 Abstract: Concerns access to health and nutritional information in restaurants, requires restaurants to disclose on such restaurants' standard printed menus total calorie counts for standard menu items along with information that identifies major food allergens used in the preparation of such standard menu items, relates to chain restaurants and food item tags, provides that the Commissioner of Public Health shall establish guidelines incorporating inspection and enforcement procedures.

Bill #: H6219 Dead: 2009 Abstract: Implements a state-wide support program for bicycling, provides for the implementation of a state-wide support program for bicycling funded by a Share the Road motor vehicle number plate.

Bill #: S738 Dead: 2009 Abstract: Concerns biking and walking improvements to promote active and healthy living, promotes active and healthy living by improving the bicycling and walking infrastructure of the state.

Bill #: H6107 Dead: 2009 Abstract: Concerns the addition of certain considerations during the planning phase of school construction projects, promotes healthy lifestyles, reduces childhood obesity, reduces gridlock on the roads and reduces the need for school buses.

Bill #: S962 Dead: 2009 Abstract: Concerns wellness incentives, promotes health behavior wellness, maintenance or improvement program participation by requiring such programs to be offered and to require an incentive or reward for such participation.

*\*Source: Legislative information compiled by the Connecticut Association of Directors of Health (2012).*

## ***Local Policies in Support of Active Living***

- *Middletown Complete Streets Master Plan:* The Complete Streets Planning Committee, formed in December 2011 as a temporary committee to the Common Council, completed the Master Plan in March 2013. The plan provides a framework for implementation of transportation policy incorporating Complete Streets principles on both City and State right of ways in the City of Middletown. The Plan will be submitted to the City's Common Council for their consideration. Upon acceptance, it will be incorporated into the City's Plan of Conservation and Development. The Plan is available on line to the public at <http://www.middletownplanning.com/documents/CompleteStreetsFinDraft031113.pdf>.
- *East Haddam Trail Guide:* Fifty miles of in-town public use walking and hiking trails as well as a listing of canoe and kayak launches are listed in the Trail Guide. The Guide is supported by the East Haddam Conservation Commission and located for public viewing on their Conservation Commission webpage at [https://imageserv3.team-logic.com/mediaLibrary/190/East\\_Haddam\\_Trail\\_Guide-Final.pdf](https://imageserv3.team-logic.com/mediaLibrary/190/East_Haddam_Trail_Guide-Final.pdf)

## ***CHANGE Tool Implementation***

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In Year 2 of the Community Transformation Grant (October 2012 - September 2013), The Middlesex County Coalition on Community Wellness coordinated a strategic health planning process to develop Community Health Improvement Plans. This process included review of all collected data to better define priority health needs, strategies, and action steps for health improvement, with emphasis on the CDC's *Community Health Assessment aNd Group Evaluation (CHANGE) Tool*.

Following training on the CHANGE Tool, local data was collected for the five different CHANGE sectors (Community-At-Large, Community Institutions/Organizations, Health Care, Schools, and Work Sites). Using the previously mentioned criteria of town population, geographic location, Health Reference Group and agency willingness to work with the Coalition, members of the Coalition were solicited to participate in sector-based workgroups. Each workgroup member was provided with a comprehensive data packet of all data collected in each format, i.e., CHANGE Tool, Key Informant Surveys, Focus Groups, and Photo Journals. The workgroups reviewed the packet to prioritize emerging themes across the various types of data within their sector. Discussions were held during workgroup meetings to determine how to incorporate qualitative data that had been collected, what strengths and weaknesses were noted from specific data types and what type of information should be considered for a comparative measure of progress in the future.

An All-Sector meeting, convened to discuss the final findings of the individual workgroups and review the findings as a larger group, identified common themes that crossed sectors. In order to generate better discussion and build an appreciation of the processes and findings of other sector workgroups, workgroup members at the All-Sector meeting were seated with individuals other than their workgroup colleagues, and were grouped by focus area: Healthy Eating/Active Living, Quality

Clinical Preventative Services, Tobacco Free Living, and Social and Emotional Wellness (SEW). SEW was asked to also review Transportation concerns, which were indicated throughout most focus areas. The All-Sector Workgroup identified and provided short summary presentations of the three most frequently seen issues by sector workgroups for all collected types of data and the top three Needs and Assets by Sector.

The findings of the All-Sector meeting were presented to the Middlesex County Coalition on Community Wellness for discussion and prioritization in development of the Coalition's Community Health Improvement Plan. The Coalition held a four hour work meeting to review the summarized data to identify potential projects for implementation. The Coalition prioritized the projects by focus area based on several criteria including: feasibility, magnitude of potential impact, cost, resources needed, existing assets, stakeholders, champion person or organization, data to collect or track, short term and/or long term results, benchmarks to evaluate progress, readiness and, settings/sector available for implementation.

### ***Key Coalition Findings***

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Throughout several months of workgroup meetings and activities, members reviewed and prioritized collected data which detailed examples of health-related policy throughout the County; an overarching list of health and wellness-related policy needs and assets was created for Middlesex County. The needs and assets were identified at the All-Sector Workgroup meeting. While this is not a representative sample of sectors or the county as a whole, prioritized needs and assets, shown in Tables 19a and 19b, provide an excellent foundation of needs and assets for inclusion in a county-wide community health improvement plan.

The entire Coalition membership undertook the further prioritization of the identified health policies through the Community Health Improvement Planning process. It is important to note that Coalition members represent and serve diverse community sectors, participate in numerous community task forces/partnerships, and regularly attend town and community meetings related to health issues.

Table 19a

Policy, Systems and Environmental Change Strategies: Needs	
<b>Community-At-Large Sector:</b>	<ul style="list-style-type: none"> <li>• Development of more transportation systems in smaller towns</li> <li>• Cross-agency communications to increase active living</li> <li>• Tobacco free policies for Parks and Recreation facilities</li> </ul>
<b>Community Institution/ Organization Sector:</b>	<ul style="list-style-type: none"> <li>• Smoking information, referral, enforcement, policies</li> <li>• Healthy foods, particularly with seniors</li> <li>• Transportation to increase access to healthy foods and medical appointments</li> </ul>
<b>Health Care Sector:</b>	<ul style="list-style-type: none"> <li>• Referrals to patients to access nutrition resources</li> <li>• Patient navigation</li> <li>• Partnering with community agencies for low cost health screenings</li> </ul>
<b>School Sector:</b>	<ul style="list-style-type: none"> <li>• Improve tobacco education</li> <li>• Some Middle and High Schools need a structured physical education curriculum</li> <li>• Need school-based health care services, including chronic disease and mental health</li> </ul>
<b>Work Site Sector:</b>	<ul style="list-style-type: none"> <li>• Employee feedback for wellness programs in the workplace</li> <li>• Policies to support healthy and safe workplace and employees</li> <li>• Participation in public policy to highlight need for community change to address chronic disease</li> </ul>

Table 19b

Policy, Systems and Environmental Change Strategies: Assets	
<b>Community-At-Large Sector:</b>	<ul style="list-style-type: none"> <li>• Public transportation systems in well-developed towns</li> <li>• Trail systems and policies to encourage further development</li> <li>• Park and Recreation playgrounds</li> </ul>
<b>Community Institution/ Organization Sector:</b>	<ul style="list-style-type: none"> <li>• Healthy food availability, specifically at University and Farmer's Markets</li> <li>• Policies for early childhood nutrition and policy change activity</li> <li>• Complete Streets initiative</li> </ul>
<b>Health Care Sector:</b>	<ul style="list-style-type: none"> <li>• Address chronic disease</li> <li>• Participate in community coalitions for chronic disease and risk factors</li> <li>• Access to health care outside regular hours</li> </ul>
<b>School Sector:</b>	<ul style="list-style-type: none"> <li>• Elementary schools have structured physical education curriculum across the county</li> <li>• Registered Nurses are in all school across the county</li> <li>• Intramural sports across the county</li> </ul>
<b>Work Site Sector:</b>	<ul style="list-style-type: none"> <li>• Strong tobacco cessation program supported by corporate leadership</li> <li>• Employee benefits that support preventive screenings</li> <li>• Flexible paid time off, flexible work hours</li> </ul>

Fifty five Key Informant Surveys, three Focus Groups, and 16 CHANGE Tools were administered by the Cowgirls to community stakeholders representing the broad interests of the community. CHANGE Tool participants were placed in the appropriate CHANGE Sector: Community at Large, Community Institution/Organization, Health Care, School, and Worksite. Key Informant Surveys collected impressions from key individuals in the community, community agencies, government and school officials, and people in the health, social services and public health fields. Focus Groups were held with representatives from the Health Care, Work Site and Community-at-Large communities. CHANGE Tools were completed and analyzed using the CDC CHANGE Tool Excel Files. The breakdown of completed Tools by sector follows:

- 3 Community-At-Large (CAL): These were completed with local municipal governments.
- 5 Community Institution/Organization (CIO): These included Early Care and Education (ECE) Providers, youth and family services, a senior center, food pantry, and local university.
- 3 Health Care: These included a hospital and regional community health centers.
- 2 Schools: Completed with a municipal public high school and a regional private high school
- 3 Work Sites: These included national home improvement store, a national fitness center and a long term care facility.

The CHANGE Tool surveys consist of a series of questions organized by topic (or module), including physical activity, nutrition, tobacco, chronic disease management, and leadership. The questions vary somewhat by sector, and schools are asked additional questions relating to the district as a whole and after school programs. For each question, a numeric response is requested which reflects the extent to which the environment and policies exist that support that particular strategy, using the following scale:

**Table 20** **CHANGE Tool Scale**

Response #	Policy	Environmental Change
1	Not identified as a problem	Elements not in place
2	Problem identification/gaining agenda status	Few elements in place and/or well developed
3	Policy formation and adoption	Some elements are in place and/or well developed
4	Policy implementation	Most elements are in place and/or well developed
5	Policy evaluation, adjustment and/or termination	All elements in place and well developed
99	Not applicable	Not applicable

CDC-created CHANGE Tool Excel files with embedded formulas were then used to calculate a score for each module, derived from the numeric responses to each question in that module, to quantify the extent to which policies and/or environment supports are in place. In general, scores of 60% or below were considered to represent community **needs** and those above 60% were interpreted as

**assets.** The aggregate results for the 16 surveys analyzed in Middlesex County are presented in Table 21.

**Table 21 Middlesex County CHANGE Tool Results**

		Low		Medium		High
		0 – 20%	21 – 40%	41 – 60%	61 – 80%	81 – 100%
◆ = Policy; ◇ = Environment						
Community-at-Large (CAL)	Physical Activity				◆◆◆◇◇◇	
	Nutrition		◆◆◆◇◇	◇		
	Tobacco		◆◇	◆◆◇◇		
	Chronic Disease Mgmt.	◆		◆◆◇◇◇		
	Leadership	◆		◇	◆	◆◆◇
Community Institution/ Organization	Physical Activity		◆◆◆◇◇	◆◆	◇◇	◇
	Nutrition		◆◆◆	◇◇	◆◆◇◇◇	
	Tobacco		◆	◆◇	◆	◆◆◇◇◇◇
	Chronic Disease Mgmt.	◆◇	◆◆	◆◇◇	◆◇◇	
	Leadership		◆◆◆◇◇	◆◇	◆◇◇	
School	District				◆	◆◆◇
	Physical Activity				◆◆◇	◇
	Nutrition				◆	◆◇◇
	Tobacco				◇	◆◆◇
	Chronic Disease Mgmt.				◆◆	◇◇
	Leadership		◆	◇	◆	◇
	After School			◇	◆◆◇	
Work Site	Physical Activity	◆	◆◆	◇◇	◇	
	Nutrition	◆	◆		◇◇	◆◇
	Tobacco		◆	◇	◆◆	◇◇
	Chronic Disease Mgmt.	◆		◆◇	◆◇	◇
	Leadership		◆◆	◇◇	◆◇	
Health Care	Physical Activity		◆	◆◇	◆◇	◇
	Nutrition			◆◇	◆◇	◆◇
	Tobacco			◇	◆◇	◆◆◇
	Chronic Disease Mgmt.			◇		◆◆◆◇◇
	Leadership					◆◆◆◇◇◇

In brief, these CHANGE Tool findings indicate that:

- All sectors show the need for improvement in both environments and policies that support healthy eating, active living, tobacco free living, and chronic disease management.
- Among sectors, healthcare is most likely to report well-developed policies and supportive environments (i.e., have high scores), followed by schools
- The community-at-large sector is least likely (i.e. have low scores) to report environments and policies for nutrition
- By topic (or module), respondents reported existing policies most frequently (i.e. had medium or high scores) for chronic disease management followed by tobacco.

## **Qualitative Data Analysis**

The common qualitative themes identified through the Key Informant Surveys and Focus Groups are demonstrated through the use of a word cloud (Figure 21), with more frequently reported concepts in larger font.

A more formal qualitative data analysis was performed to identify the most common themes from Key Informant Surveys, with the Healthcare Sector analyzed as a stand-alone category given its more singular focus. The key informant data reflects the most commonly stated themes with single observations excluded. Questions which address solutions to barriers were combined in the analysis, given the similar nature of the questions. Responses to questions where themes were readily identifiable were documented. In addition to the themes depicted in percentages, qualifying statements and observations are indicated. (Appendix 9d)

Focus Group data from the 3 Focus Groups conducted, representing the sectors of Community at Large (10 participants), Health Care (18 participants), and Worksite (4 participants) is presented per sector. Qualifying statements and observations are collapsed into the following categories: 1) What are the biggest health issues of concern in Middlesex County?; 2) Underserved populations; and 3) Barriers/Issues/Needs to improving the health and quality of life for individuals in Middlesex County (Appendix 9e).

**Figure 21 Key Informant and Focus Groups Word Cloud**



## Public and Political Will for Change within Middlesex County

Public will and political will are two related, yet separate concepts. Public will, the desire for individuals to become engaged and work together in an effort to create a change, may be used to create social change, or be used to drive political will. Political will, a demonstrated credible intent of political individuals to take meaningful action towards reform, is a somewhat more ambiguous notion. While both public will and political will may be quickly energized by an unforeseen community event, in general, building public will is a lengthy progression involving presentation of a problem, building awareness, and transmitting information in order to motivate individuals to create change. Evaluation of public will is measured long term, and the focus is on the process, not

necessarily an end product. Showing cause and effect is not possible; therefore, determining contribution is a critical means of evaluation.

Within Middlesex County, public will is evident in the wide participation of individuals with the Middlesex County Coalition on Community Wellness. People from a broad spectrum of municipal, community, private and state agencies stepped forward to listen to the message of the Coalition; most then chose to join the group, and many have further volunteered to staff workgroups to perform additional tasks to move the group forward. The continued attendance and participation of Coalition members is upheld by their supervisors, who thus demonstrate their support of the group. (Figure 22)

The initial demonstration of public will within the Middlesex County Coalition on Community Wellness sprang from an agreement between several local health departments to work together toward the common goal of bringing information and awareness about health policies and practices to residents county-wide. This partnership of Middlesex County's local health departments and multi-town districts was unprecedented. Connecticut's fractured local public health system in which local health departments and districts are in direct competition for funding with each other has a tendency to create an atmosphere of tension when working together. Local health departments throughout Middlesex County agreed that Chatham Health District would be the lead health district in the CTG process, with their ongoing involvement in the Collaborative. Staff from all health departments and districts developed a core group to build and develop the Coalition.

Numerous presentations to local community groups, social interaction at professional gatherings, and one-on-one discussion with other professionals spread information about the Coalition, and, once again led to a demonstration of public will when community representatives joined the Coalition.

As the Coalition moved into health policy data collection, focus groups, key informant interviews, and CHANGE Tool surveys were completed with participation by municipal officials, management from community organizations and educational facilities, as well as business executives. Members readily stepped forward to develop Sector-focused Workgroups to evaluate collected policy data. This ongoing demonstration of support in the work of the Coalition has continued to encourage new membership and created a belief by all Coalition members that a strong voice is being created by our common activities.

**Figure 22**  
**Demonstration of Public and Political Will**



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## Prioritized Strategies for Implementation

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The Middlesex County Coalition on Community Wellness evaluated the results of the 2013 Middlesex County Community Health Needs Assessment (CHNA), CHANGE Tool surveys, Focus Group sessions, Key Informant interviews and Photo Journals to identify priority strategies for implementation in the county. In addition to these findings, the significant collective community knowledge and experience of the Coalition membership further informed the selection of priority strategies. The results from the CHNA and data sources were organized, the Cowgirls gathered volunteers from membership and met in workgroups to determine priority strategies, objectives, and activities for implementation focused on four strategic directions – *Tobacco Free Living, Active Living, Healthy Eating, and Clinical Preventive Services*. Additional health improvement needs were identified during the workgroup processes that were not prioritized for immediate action. These needs have been identified for future Coalition member consideration.

The entire Coalition membership selected priority strategies, taking into account public and political will, cost-effectiveness, feasibility in implementation, likelihood of success, scalability, and long-term impact. It is important to note that county-specific policies related to any of the Strategic Directions do not presently exist as there is no county-level government in Connecticut. Therefore, the Coalition recognized the need to implement the priority strategies in one or more sectors with a goal of demonstrating success and fostering adoption and dissemination across sectors, the county, and statewide. To this end, the Coalition focused on sustainable approaches that could be more easily adopted and scaled across sectors and municipalities. These strategies were then incorporated into an “all-county CTG” Community Transformation Implementation Plan. This was a collaborative effort among the CT Department of Public Health and all CTG partner counties to align strategies across the five counties to the extent possible to maximize outcomes. The Middlesex County Coalition on Community Wellness elected to focus on the two priority areas of Tobacco Free Living and Clinical Preventive Services based upon its strategic planning and continued funding from the CDC.

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### ***CTG Strategic Direction: Tobacco Free Living***

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**Prevent and Reduce Tobacco Use through Tobacco Free Policies in Public Places** is a priority strategy. This strategy was selected as a priority based on the results of the CHNA and the CHANGE Tool Assessment, which identified instituting smoke-free policies 24/7 as a priority as well as advancing existing smoke-free policies to tobacco-free. Based on Behavioral Risk Factor Surveillance System (BRFSS) findings, Middlesex County ranked sixth among eight in smoking prevalence among the

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*“It’s illegal to sell loose cigarettes, ‘loosies’, but it’s so much easier to buy a loosie than to buy a decent piece of fruit- and that’s illegal.” [selling loosies]*

*- Key Informant Interview response on the biggest health and quality of life issues in Middlesex County*

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counties in the state, with a smoking rate of 16% that mirrors the 16% for CT. This strategy is one of the CDC-Recommended Evidence- and Practice-Based Strategies and is included as a recommendation in the U.S. National Prevention Strategy. Tobacco-free venues reduce exposure to environmental tobacco smoke for smokers and non-smokers alike and serve as a deterrent to tobacco use. Decreasing tobacco exposure will reduce tobacco-related morbidity and mortality, including cancer, cardiovascular, and respiratory diseases. The Middlesex County Coalition on Community Wellness will collaborate with local coalitions and community partners to facilitate policy development and enhancements across diverse communities with an integrated media campaign. The strategies selected will help change social norms, increase public awareness of the right to be safe from second-hand smoke, and advance public and political will to advocate for tobacco-free policies. There will be an emphasis on reaching the geographic areas within Middlesex County with the highest mortality rates from respiratory illness, as well as low socioeconomic populations.

### ***CTG Strategic Direction: Healthy Eating***

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**Improving the availability of affordable healthy foods** was identified as a key strategy to reverse the obesity epidemic and associated chronic diseases including, diabetes, hypertension, cardiovascular disease, and cancer. CHNA data sets show that both emergency department visit rates in county residents were above the state for major cardiovascular diseases. Increasing intake of fruits and vegetables and the proportion of fresh fruits and vegetables in diets are Healthy People 2020 Health Outcome Targets. According to the BRFSS, in Middlesex County only 27% of adults and 21% of high school students consume the recommended 5 or more servings of fruits and vegetables per day. CHANGE Tool results identified improving access to healthy food options as priority across

*"I don't know how to draw a carrot.  
What's a carrot?"*

*- Response from a 6-year old girl  
during a food plate activity with Lily  
Gagliardi, Founder and CEO of Lily's  
Kids, Inc*

all sectors as well as establishing additional community and school gardens. Community and school gardens are recommended in the CDC Guide to Fruit and Vegetable Strategies to Increase Access, Availability and Consumption. Increasing fruits and vegetables intake is a Healthy People 2020 Health Outcome Target and consistent with the Dietary Guidelines for Americans. The town of Haddam has successfully established a community garden as a means of creating opportunities for families to grow and share their own healthy foods. In implementing this strategy, emphasis will be placed on reaching more residents, including low income residents with limited

access to fresh and minimally processed foods.

### ***CTG Strategic Direction: Active Living***

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The lack of **opportunities for regular physical activity in school**, community, and worksites contributes to the obesity epidemic among school-aged children and adults. In CT, rates of obesity are highest in Hispanic or Latino and Black or African American children. Increasing opportunities for

physical activity in schools brings multiple benefits, including improved health and academic performance. The Middlesex County CHNA found that seven Middlesex County schools performed more poorly than the state average for passing all 4 physical fitness test components. Activities will align with nationally recognized fitness initiatives. Middlesex County Coalition on Community Wellness elected a focus on increasing opportunities for physical activity in school-age children because habits developed at a young age have lifelong effects. Increasing opportunities for physical activity in schools

brings multiple benefits. According to CDC's 2010 report, *The Association between School Based Physical Activity, Including Physical Education, and Academic Performance*, "There is substantial evidence that physical activity can help improve academic achievement, including grades and standardized test scores." In addition, BRFSS findings indicate that rates of obesity in adults (23%) exceed the state average (21%). Communications strategies, including engaging media, will be integrated to promote policy changes in schools and worksites. Planned activities will be concentrated in the county's more rural and less affluent communities.

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*"I go through bursts where I'm working out and eating well, and my pants are hanging loose.*

*Then I get busy, I'm not eating well, not working out, and my pants are tight. I know eating right and exercise will lead to a longer life, but I don't always do it."*

*- Key Informant Interview response on the biggest health and quality of life issues in Middlesex County*

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### ***CTG Strategic Direction: Clinical Preventive Services***

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Access to timely preventive care can decrease the risk of chronic disease, disability, death and the associated financial, social and emotional costs. As hypertension is a very prevalent condition in county residents that contributes to significant adverse health outcomes, including premature death, heart attack, renal insufficiency, and stroke, this was selected as a priority for clinical prevention services. The Agency for Healthcare Research and Quality found strong evidence that Self-Measured Blood Pressure monitoring (SMPB) plus additional support was more effective than usual care in lowering blood pressure among patients with hypertension. By providing the resources needed (through training and technical assistance) to clinical partners to effectively implement a system to provide hypertensive patients with a self-blood pressure monitoring program, this

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*"I worry about adequate access to primary health services for residents, without using the emergency room for care. This would allow a whole spectrum of health services to be coordinated, despite health insurance status."*

*-Key Informant Interview response on the biggest health and quality of life issues in Middlesex County*

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strategy involves a systemic change to improving the control of patients' high blood pressure. The Coalition will work with private providers and medical care systems with locations throughout Middlesex County (Middlesex Hospital system and Community Health Centers, Inc.) to implement a **quality clinical preventive service protocol for management of patients who are identified with hypertension**. The CHANGE Tool findings revealed cross sector support for providing screening, follow-up counseling and chronic disease management education. The CHNA found that emergency department visit rates in county residents were above the state average for major cardiovascular diseases. Adults with hypertension will be identified through current blood pressure monitoring programs. These patients will receive a home blood pressure monitor, instruction on how to use it properly, and will have regular follow-up through multiple channels (phone calls, home visits, clinical review) to promote and facilitate blood pressure control. By creating a system change to support better blood pressure control in hypertensive patients, this objective can make a significant impact in Middlesex County where 29% of residents have been told by a health professional that they have high blood pressure.

### ***Future Strategic Directions:***

#### ***Social and Emotional Wellness, Healthy and Safe Physical Environment***

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**Middlesex County Coalition on Community Wellness** will continue to build capacity in Middlesex County to develop, implement,

and sustain policies, systems, environments, practices and programs that make the healthy choice the easy choice in our communities. During the Coalition strategic direction

prioritization process, additional

needs in the **Social and Emotional Wellness** and **Healthy and Safe Physical Environment** areas were identified for future consideration. Coalition members will provide ongoing guidance and support

implementation activities by engaging community

*"Communities should be more pedestrian oriented with sidewalks, bike use, and more public transit options so people are not driving everywhere."*

*- Key Informant Interview response on the biggest health and quality of life issues in Middlesex County*

*"A campaign to de-stigmatize mental health issues."*

*- Key Informant Interview response on what will improve health and quality of life in Middlesex County*

partners and sites, leading and participating in community forums or events, and broadly promoting CTG initiatives, including via websites and social media. Coalition members have longstanding relationships with both local and statewide media, and some have advanced skills in public relations. Media campaigns to reduce exposure to tobacco, increase physical activity, improve access to healthy foods and increase high blood pressure control will be targeted to the entire county.

## APPENDICES

### Connecticut Department of Public Health

#### APPENDIX 1. Data Sources

##### *Behavioral Risk Factor Surveillance System*

The Behavioral Risk Factor Surveillance System (BRFSS) survey is a state-based system of health surveys that generate information about health risk behaviors, clinical preventive practices, and health care access and use. The BRFSS, sponsored by the Centers for Disease Control and Prevention, is the world's largest telephone survey, and is conducted in all 50 states. A randomly selected adult (aged 18 or older) within a randomly selected household with a landline telephone, or a randomly selected cellular telephone owned by an adult with no landline or who uses their cellular telephone for 90% of their calls. Only non-institutionalized adults are included (no nursing homes, prisons, college dorms, etc.). Racial and ethnic classifications are based on self-report and include White, non-Hispanic, Black, non-Hispanic, and Hispanic (including persons of any race). Other national and state-specific risk factor data and information regarding BRFSS methodology can be accessed on the CDC's BRFSS Web site at: <http://www.cdc.gov/brfss/>.

##### *Connecticut Vital Records Mortality Files*

The Connecticut Vital Records Mortality Files are part of the state's vital statistics data base that contains records pertaining to deaths that occur within the state as well as deaths of Connecticut residents occurring in other states, or in Canada. Mortality statistics are compiled in accordance with the World Health Organization (WHO) regulations, which specify that deaths be classified by the current Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. Deaths for the 1989-1998 period included in this report are classified by the Ninth Revision of the International Classification of Diseases (ICD-9).<sup>1</sup> Deaths for the 1999-2008 period are classified by the Tenth Revision of the International Classification of Diseases (ICD-10).<sup>2</sup>

The race-ethnicity designation is typically based on report by next of kin, a funeral director, coroner, or other official, often based on observations. As such, the race-ethnicity designation based on observation may be reported incorrectly. Another potential source of error is the fact that death rates are calculated using two different sources of data – the death certificate for the numerator and the U.S. Census Bureau population estimates for the denominator. Errors in under- or over-counting populations by race and/or ethnicity will affect the death rates reported for these groups. Mortality data are reported using racial categories that exclude persons of Hispanic origin (White, non-Hispanic and Black, non-Hispanic) and by Hispanic ethnicity (Hispanics of any race).

Death Registry data follow the National Center for Health Statistics guidelines for coding race and Hispanic ethnicity.<sup>3</sup>

### ***Connecticut Hospital Information Management Exchange (CHIME) Hospital Discharge and Emergency Department Data Set***

Data on hospitalization, both inpatient admissions and emergency department (ED) visits, are available from individual hospitals and the Connecticut Hospital Information Management Exchange (CHIME), an affiliate of the Connecticut Hospital Association (CHA). The CHIME-Data Program is a proprietary healthcare information system that member hospitals use to record patient, clinical, provider, and financial information. CHIME began in 1980 with collection of inpatient data from Connecticut's acute care hospitals. Since then, the CHIME database has expanded to include information about care-related finances, hospital-based ambulatory surgery, ambulatory medical records, and ED data.

Connecticut hospitals are legally mandated to report financial, utilization, and certain statistical information to the DPH (Public Health Code § 19a-654). Accordingly, on the behalf of its member hospitals, CHA submits CHIME data to the DPH Office of Health Care Access (OHCA) annually; hospitals that do not participate in CHIME submit data directly to OHCA. Since 2006, hospital discharge and billing data from Connecticut's 29 acute care hospitals and one children's hospital have been submitted to OHCA. In addition to age, gender, and town of residence, the demographic data elements include race and ethnicity. Race and ethnicity may be based upon observation of the patient or self-reporting by the patient. It should be noted that counts reflect hospitalizations not persons. For example, a patient admitted to a hospital on two separate occasions in 2008 would be counted twice in these data. Another limitation of the data is the fact that it is an administrative data set. It contains diagnoses and procedures based on the International Classification of Diseases, Clinical Modification (ICD-9-CM) codes.

### ***Connecticut School Health Survey- Youth Behavior Component***

The Connecticut School Health Survey (CSHS) is a comprehensive survey that consists of two components: Youth Tobacco Component (YTC) and the Youth Behavior Component (YBC). The YBC collects data that is used to monitor priority health-risk behaviors and the prevalence of obesity and asthma among high school students in Connecticut. The CSHS is conducted by the Connecticut Department of Public Health in cooperation with the CDC, the Connecticut State Department of Education, and partners from local school health districts and local health departments. The YBC is administered to a representative sample of all regular public high school students in Connecticut. Racial and ethnic classifications are based on self-report and include White, non-Hispanic; Black, non-Hispanic; and Hispanic (including persons of any race). Further information about the CSHS can be found on the Connecticut Department of Public Health's web site: <http://www.ct.gov/dph/cshs>. Other national and state-specific youth risk factor data and information can be accessed on the CDC's web site: <http://www.cdc.gov/HealthyYouth/YRBS/>.

## APPENDIX 2a. ICD-10 Coding for Selected Causes of Death

Cause of Death	ICD-10 Code
All Causes	A00.0 – Y89.9
Septicemia	A40-A41
Malignant Neoplasms (All Cancers)	C00 – C97
Trachea, bronchus & lung cancer	C33-C34
Diabetes Mellitus	E10 – E14
Alzheimer's Disease	G30
Major cardiovascular diseases	I00-I78
Diseases of the Heart	I00 – I09, I11, I13, I20 – I51
Stroke (Cerebrovascular Disease)	I60 – I69
Pneumonia and Influenza	J10 – J18
CLRD (Chronic Lower Respiratory Diseases)	J40 – J47
Kidney Disease(Nephritis, Nephrotic syndrome, Nephrosis)	N00-N07,N17-N19,N25-N27
Accidents (Unintentional Injuries)	V01 – X59, Y85 – Y86
Alcohol-induced	F10,G31.2,G62.1,I42.6,K29.2,K70,
Drug-induced	F11-F19[.0-.5,.7-.9],X40-X44,X60-

**Source:** World Health Organization. 1992. *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death, based on the recommendations of the Tenth Revision Conference, 1992 (ICD-10)* Geneva: World Health Organization.

## APPENDIX 2b. ICD-9-CM Coding for Selected Causes of Hospitalizations

Cause of Hospitalization	ICD-9-CM Code
Cancer, all sites	140-208
Oral Cavity & Pharynx	140-149
Lung & Bronchus	162.2-162.9
Diabetes	250
Alcohol & Drug Abuse	291-292, 303-305
Major CVD	390-448
CHD	402, 410-414, 429.2
Acute MI	410
CHF	428.0
Stroke	430-434, 436-438
COPD	490-496
Asthma	493
Liver Disease (LD) & Cirrhosis	571

**Source:** Practice Management Information Corporation. 2004. *The International Classification of Diseases, Ninth Revision, Clinical Modification, 6<sup>th</sup> edition*. Los Angeles, CA.

## APPENDIX 3. Glossary of Statistical Terms

**Age-adjustment.** “Age adjustment, using the direct method, is the application of observed age-specific rates to a standard age distribution to eliminate differences in crude rates in populations of interest that result from differences in the populations’ age distributions. This adjustment is usually done when comparing two or more populations at one point in time or one population at two or more points in time. Age adjustment is particularly relevant when populations being compared have different age structures, for example, the U.S. white and Hispanic populations....”.<sup>4</sup>

**Age-adjusted BRFSS rates.** Some of the Behavioral Risk Factor Surveillance System (BRFSS) rate estimates presented in this report were age-adjusted, using the direct method, in order to eliminate differences in crude rates in populations of interest that result from differences in the populations’ age distributions, such as those of Hispanics and Whites. The following age distributions and age-adjustment weights, based on the 2000 projected U.S. population, were used.<sup>5</sup>

Age Distributions and Age-adjustment Weights, 2000 Projected U.S. Population		
Age	Population in thousands	Adjustment weight
18 years and over	203,851	1.000000
18 – 24 years	26,258	0.128810
25 – 44 years	81,892	0.401725
45 – 64 years	60,991	0.299194
65 years and over	34,710	0.170271

**Age-adjusted Hospitalization Rates (AAHR).** AAHRs are used to compare relative hospitalization risk across groups and over time. They are not actual measures of risk but rather an index of risk. Age distributions were based on the 2000 U.S. standard million population distribution in 18 age groups. They are weighted statistical averages of the age-specific rates, in which the weights represent the fixed population proportions by age. These 18 age groups are presented in the table below, under age-adjusted mortality rates. The AAHRs were computed by the direct method. Age-adjusted rates are expressed as hospital discharges per 100,000 population.

**Age-adjusted Mortality Rates (AAMR).** AAMRs are used to compare relative across groups and over time. They are not actual measures of risk but rather an index of risk. They are weighted statistical averages of the age-specific rates, in which the weights represent the fixed population proportions by age.<sup>6</sup> AAMRs were computed by the direct method. Age-adjusted rates are expressed as deaths per 100,000 population. The 1940 and 2000 U.S. standard million population distributions are shown below:

Age group	1940	2000
0-4	80,057	69,136
5-9	81,151	72,533
10-14	89,209	73,032
15-19	93,665	72,169
20-24	88,002	66,477
25-29	84,280	64,529
30-34	77,787	71,044
35-39	72,501	80,762
40-44	66,744	81,851
45-49	62,696	72,118
50-54	55,116	62,716
55-59	44,559	48,454
60-64	36,129	38,793
65-69	28,519	34,264
70-74	19,519	31,773
75-79	11,423	26,999
80-84	5,878	17,842
85+	2,765	15,508
Total	1,000,000	1,000,000

**Cause-of-death classification.** Mortality statistics for this report were compiled in accordance with the World Health Organization (WHO) regulations, which specify that member nations classify causes of death by the current Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. Deaths for the 1989-1998 period were classified by the Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death, Ninth Revision of the International Classification of Diseases (ICD-9).<sup>1</sup> Deaths for the 1999-2008 period were classified according to the Tenth Revision of the International Classification of Diseases (ICD-10).<sup>2</sup>

**Healthy People 2010** is part of a national strategy addressing the prevention of major chronic illnesses, injuries, and infectious diseases. It is the product of an effort, involving expert working groups, a consortium of national organizations, all state health departments, and the Institute of Medicine of the National Academy of Sciences to set health objectives for the nation. After extensive national and regional hearings were conducted with a period of public review and comment, the health objectives were published in 1990 as *Healthy People 2000—National Health Promotion and Disease Prevention Objectives*. It established national objectives and served as the basis for the development of state and community plans. *Healthy People 2010* provides a

comprehensive view of the nation's health in 2000, and establishes national goals and targets to be achieved by 2010, and monitors progress over time.<sup>7</sup>

**Hispanic origin** refers to people whose origins are from Spain, the Spanish-speaking countries of Central America, South America, and the Caribbean, or persons of Hispanic origin identifying themselves as Spanish, Spanish-American, Hispanic, Hispano, or Latino. Since 1988, the Connecticut death certificate has had a separate line item for Hispanic ethnicity. Individuals identified as "Hispanic" can be of any race, and are also counted in the race breakdown as either "white," "black," "Asian or Pacific Islander," "American Indian," or other.<sup>3</sup>

**International Classification of Diseases 9<sup>th</sup> and 10<sup>th</sup> Revisions (ICD-9, ICD-10)** have been the internationally accepted coding system for determining cause of death since the early 1900s. It is periodically revised. The Ninth Revision (ICD-9) was in use from 1975 through 1998. Beginning with 1999 deaths, the Tenth Revision (ICD-10) is being used.

Preliminary estimates of the comparability of ICD-9 to ICD-10 have been published and indicate that the discontinuity in trends from 1998 to 1999 for some leading causes of death (septicemia, influenza and pneumonia, Alzheimer's disease, nephritis, nephrotic syndrome, and nephrosis) is substantial.<sup>8</sup>

**International Classification of Diseases, Clinical Modification (ICD-9-CM)** is a coding system recommended for use in all clinical settings to describe medical procedures and diagnoses. It is required for reporting diagnoses and diseases to all U.S. Public Health Service and Department of Health and Human Services programs, including Medicare and Medicaid. The foundation of the ICD-9-CM is the *International Classification of Diseases, 9<sup>th</sup> Revision* published by the World Health Organization.<sup>1</sup>

**Population bases** for computing rates are taken from the U.S. Census Bureau's *Estimates of the population of states by age, sex, race, and Hispanic origin*. These data are estimates of the population of Connecticut by 5-year age groups (age 0 to 4, 5 to 9, ..., 85 and over), sex (male, female), modified race (white; black; Native American including Alaska Natives; Asian and Pacific Islander) and Hispanic origin (Hispanic, ) for each year, July 1, 1999 through July 1, 2009.<sup>3</sup>

**Race** refers to a population of individuals identified from a common history, nationality, or geographical place. Race is widely considered a valid scientific category, but not a valid biological or genetic category.<sup>9,10</sup> Available scientific evidence indicates that racial and ethnic classifications do not capture biological distinctiveness, and that there is more genetic variation within racial groups than there is between racial groups.<sup>11,12</sup> Contemporary race divisions result from historical events and circumstances and reflect current social realities. Thus, racial categories may be viewed more accurately as proxies for social and economic conditions that put individuals at higher risk for certain disease conditions.<sup>13</sup>

Data presented in this report include two racial groups in Connecticut: White, non-Hispanic and Black, non-Hispanic. Individuals identified as “Hispanic” can be of any race.

**Socioeconomic position** refers to a person’s social and economic place in a society, and is operationalized or measured by characteristics such as per capita or household income, educational attainment, or occupation. Historically, lower socioeconomic position has been strongly correlated with less favorable health outcomes such as premature mortality and higher death rates from all causes; conversely, persons of higher socioeconomic position do better on most measures of health status.<sup>14</sup>

**Years of potential life lost (YPLL)** represents the number of years of potential life lost by each death before a predetermined end point (e.g., 75 years of age). Whereas the crude and adjusted death rates are heavily influenced by the large number of deaths among the elderly, the YPLL measure provides a picture of premature mortality by weighting deaths that occur at younger ages more heavily than those occurring at older ages, thereby emphasizing different causes of death. Age-adjusted YPLLs are calculated using the methodology of Romeder and McWhinnie.<sup>15</sup> This method consists of a summation of the number of deaths occurring at each age (between 1 and 75) multiplied by the remaining years of life had the deceased lived up to age 75.

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## **APPENDIX 4: Data Sources**

### **U.S. Census, CERC, CT Data Center and County Health Rankings**

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#### **U.S. Census**

The U.S. Census counts every resident in the United States. It is mandated by Article I, Section 2 of the Constitution and takes place every 10 years. The data collected by the decennial census determine the number of seats each state has in the U.S. House of Representatives and is also used to distribute billions in federal funds to local communities. 2010 Census data are available for all places regardless of size.

For the 2010 Census, approximately 74 percent of the households returned their census forms by mail; the remaining households were counted by census workers walking neighborhoods throughout the United States. A total of ten questions were asked of every person and housing unit in the United States. Information is available on: age, Hispanic or Latino origin, household relationship, race, sex, tenure (whether the home is owned or rented), and housing vacancy characteristics.

*The results from the 2010 Census are available in a number of datasets in American FactFinder, which can be accessed at <http://factfinder2.census.gov>. A brief description of the major datasets follows:*

*2010 Census Redistricting Data (Public Law 94-171) Summary File - used for congressional and state redistricting.*

*2010 Census Demographic Profile* - population and housing unit counts and characteristics such as age, race, Hispanic or Latino origin, relationship to householder, household size, group quarters population, housing unit occupancy status, whether a unit is owner- or renter-occupied, and more, summarized in one table.

*2010 Census Summary File 1 (SF 1)* - detailed tables providing data on age, sex, households, families, relationship to householder, housing units, detailed race and Hispanic or Latino origin groups, and the population in group quarters.

*2010 Census Summary File 2 (SF 2)* - tables providing population and housing characteristics iterated for detailed race and Hispanic or Latino categories, and American Indian and Alaska Native tribes/tribal groupings, subject to a population threshold.

The Summary File 1 data tables provide the most detailed information available so far from the 2010 Census about a community's entire population, including cross-tabulations of age, sex, households, families, relationship to householder, housing units, detailed race and Hispanic or Latino origin groups, and group quarters. The Summary File 2 tables add a new layer of detail - providing age, relationship and homeownership available for specific race and ethnic groups within a community.

For the 2000 Census, additional questions were asked of a sample of one in six households on topics such as income, education, disability, insurance, place of birth and more. These questions are no longer included in the decennial census. Information on these topics are now collected and available as part of the *American Community Survey* accessed at <http://www.census.gov/acs>.

### **American Community Survey**

The American Community Survey (ACS) is a nationwide survey designed to provide communities with timely information about population changes. It is a critical element in the census program. The ACS collects information such as age, race, income, commute time to work, home value, veteran status, and other important data. As with the 2010 decennial census, information about individuals remains confidential.

The ACS collects and produces population and housing information every year instead of every ten years. Collecting data every year provides more up-to-date information throughout the decade about the U.S. population at the local community level. About 3.5 million housing unit addresses are selected annually, across every county in the nation.

#### ***Single-Year Estimates***

The ACS produces 1-year estimates annually for geographic areas with a population of 65,000 or more. This includes the nation, all states and the District of Columbia, all congressional districts, approximately 800 counties, and 500 metropolitan and micropolitan statistical areas, among others.

#### ***Multiyear Estimates***

The ACS produces 3-year estimates annually for geographic areas with a population of 20,000 or more, including the nation, all states and the District of Columbia, all congressional districts, approximately 1,800 counties, and 900 metropolitan and micropolitan statistical areas, among others.

In 2010, the Census Bureau released the first 5-year estimates for small areas. These 5-year estimates are based on ACS data collected from 2005 through 2009, and provide data for geographies as small as Census Tracts.

### *Group Quarters Population*

In 2006, the ACS sample was expanded to include the population living in group quarters. Group quarters include nursing homes, correctional facilities, military barracks, and college/university housing among others.

### **QuickFacts**

QuickFacts tables are summary profiles showing frequently requested data items from various Census Bureau programs. Profiles are available for the nation, states, counties, and places and can be accessed at <http://quickfacts.census.gov>. QuickFacts includes incorporated places with 5,000 or more inhabitants.

### ***U.S. Census Designations of Race and Hispanic Origin***

The U.S. Census Bureau collects race and Hispanic origin information following the guidance of the U.S. Office of Management and Budget's (OMB) 1997 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. These federal standards mandate that race and Hispanic origin (ethnicity) are separate and distinct concepts and that when collecting these data via self-identification. OMB requires federal agencies to use a minimum of two ethnicities: Hispanic or Latino and Not Hispanic or Latino. Hispanic origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. People who identify their origin as Hispanic, Latino, or Spanish may be any race.

Starting in 1997, OMB required federal agencies to use a minimum of five race categories: White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander. For respondents unable to identify with any of these five race categories, OMB approved the Census Bureau's inclusion of a sixth category—Some Other Race—on the Census 2000 and 2010 Census questionnaires.

The race categories included in the census questionnaire generally reflect a social definition of race recognized in this country and are not an attempt to define race biologically, anthropologically, or genetically. For more information on race and Hispanic origin in the United States, visit the Census Bureau's Internet site at <http://www.census.gov/population/hispanic> and <http://www.census.gov/population/race>.

Information on other population and housing topics is presented in the 2010 Census Briefs series, located on the Census Bureau's web site at <http://www.census.gov/prod/cen2010/>. This series presents information about race, Hispanic origin, age, sex, household type, housing tenure, and people who reside in group quarters.

### **Connecticut Economic Resource Center, Inc. (CERC) Town Profiles**

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Detailed information about the CERC Town Profile data sources can be found at [http://cerc.com/images/customer-files/CT\\_TP\\_Data\\_Sources.pdf](http://cerc.com/images/customer-files/CT_TP_Data_Sources.pdf).

2010 Population Data – U.S. Census; American FactFinder

2011 Population Data - CERC DataFinder; Applied Geographic Solutions

2009 Poverty Rate - American Community Survey 2005-09

## **Connecticut Data Center (University of Connecticut) Population Data**

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2000 and 2010 Population Data - U.S. Census

2015-2030 Population and Median Age Projections -

### **1. Statewide Level:**

- a. All modeling was done separately by race.
- b. Cohort-component methodology using the Census Bureau's Rural/Urban Projection (RUP) software <http://www.census.gov/population/international/software/rup>
- c. Vital statistics on CT births and deaths from the most recent CT Department of Public Health data
  - i. Fertility rates are specific to CT.
  - ii. Lifespan is allowed to increase through 2030.
- d. Population data from Census 1990 and Census 2000
- e. Net-Migration calculated from a combination of:
  - i. Calculating a closed-population from 1990 to 2000
  - ii. Subtracting Census 2000 counts from survived population to obtain domestic migration
  - iii. Using OIS (formerly INS) data for foreign-born in-migration counts

### **2. Towns and Counties:**

- a. All modeling was done separately by race.
- b. Hamilton-Perry (H-P) methodology was implemented in Excel and used to calculate a maximum of seven (7) extrapolation scenarios for each racial group in each town.
- c. The selection of the most appropriate extrapolation was optimized to 2005 Department of Education enrollment counts and 2005 Census estimates for each town.

## **County Health Rankings**

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Rankings are based on a number of factors including health outcomes, social and behavioral risk, and policy/programmatic environment. For detailed information about the modeling factors, see:

<http://www.countyhealthrankings.org/our-approach> .

For a list of the indicators used to develop the rankings, see:

[http://www.countyhealthrankings.org/sites/default/files/2012%20Measures%2C%20Data%20sources%20and%20years\\_0.pdf](http://www.countyhealthrankings.org/sites/default/files/2012%20Measures%2C%20Data%20sources%20and%20years_0.pdf).

*Source home page URLs for information cited:*

<http://www.census.gov>

<http://www.cerc.com>

<http://www.ctsdc.edu>

## **APPENDIX 5a**

### **CADH Technical Appendix for the Health Equity Index**

#### **March 2013**

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## **CADH Technical Appendix for the Health Equity Index**

### **March 2013**

#### **1. The Concept of Health Equity**

Connecticut is one of the most affluent states in the nation. Yet profound differences in health outcomes exist within its population that belie this material wealth. For all the attention paid to health disparities as a salient public health issue, the remedies directed at the “problem” do not address the underlying causes. As a result, health disparities persist and with certain sub-populations, they worsen.

Nationally, a growing body of research has been documenting disparities between demographic makeup and health status. Some of this research has focused on whether certain key determinants cause differences in the distribution of disease, illness and morbidity among geographic communities and sub-populations. Consequently, researchers have examined the impact that certain factors such as income, housing, education, race/ethnicity have on cardiovascular, cancer, respiratory, diabetes and other diseases.

The general conclusion of this research is that many of the documented disparities in health rest squarely on differences in the social and economic environments in which people live. This has resulted in a growing acceptance of the sensitive relationship of health to the socioeconomic environment and to what has become known as the *social determinants of health*.

The social determinants of health represent processes or critical pathways. Through these pathways, a diverse set of determinants interacts creating social conditions that ultimately affect the health of population groups. This collective interplay between determinants gives rise to circumstances that can lead to poor health - low income, unemployment, underemployment, lack of a preschool experience, poor nutrition, crowded housing, unsanitary conditions, social stress and no primary care physician.

Most critically, the social determinants of health are seen as being largely affected by embedded patterns of public and private policies and institutional practices. This viewpoint introduces a moral dimension into the relationship between health status and socioeconomic environment – the concept of health *inequity*.

A long-standing assumption is that health status, whether individual or among populations, is unequal. Genetic makeup, ethnicity/race, environmental beginnings, social construct and personal behavior—all contribute to a differing, unequal health status even among like individuals.

But within that universe of inequality, health status can be understood as being more particularly defined and made distinct by the emergence of a moral dimension. This perspective is made manifest when circumstances and forces - that are viewed as unjust, unfair, avoidable, and not attributable to individual choice or behavior - affect health status. Differences in health status thus become health inequities.

Based on this moral premise, a social justice approach to public health practice began to take hold within the profession. A growing number of public health practitioners took the position that the conditions contributing to health inequities must be challenged and ultimately changed if the fundamental moral precepts of society were to be upheld. Accordingly any effort to address health inequities must therefore be grounded in the values of social justice.

### **Philosophic Framework of a Social Justice Approach to Health Inequity**

The social justice approach is supported by two tenets: a demand for social and economic equality, particularly as it involves the sharing of social benefits; and, political equality. Both underscore the need for political and social analysis as a prerequisite to reform. Each implies the necessity of structural systems change to ameliorate the root causes of health inequities.

Within this context, public health leaders have considered the philosophical underpinning of a social justice approach for the elimination of health inequities. Among its major points are:

- The core belief in a public responsibility for the social health and welfare of all individuals as manifested by the equitable distribution of collective goods, institutional resources and life opportunities across society;
- The moral imperative to view health disparities as inequities that are systemic, unjust, avoidable and not attributable to genetic makeup or human behaviors;
- The importance of looking at the root causes of health inequities, and identifying and changing the conditions that give rise to them;
- The critical need for structural systems change as the only viable means of ameliorating the root causes of health inequities; and

- The need for greater emphasis on preventive health strategies as opposed to traditional treatment modalities aimed at behavioral change.

To actualize the social justice approach, the implementation of several strategies is essential. It is necessary that the issue of health inequities be appropriately defined with regard to their nature and extent. Political and social analysis supported by documentation is critical. Further, residents and other community stakeholders must be engaged to confront inequities. Political inclusion and shared decision-making are goals to be achieved.

## **2. The Connecticut Initiative**

### **Planning Phase**

Against this backdrop, the Connecticut Association of the Directors of Health (CADH) joined with The National Association of County & City Health Officials (NACCHO) and a diverse group of stakeholders in 2003. The purpose was to launch an initiative aimed at incorporating the principles of health equity through social justice into public health practice. The Universal Health Care Foundation of Connecticut provided the seed money to support the planning phase. Under the acronym HEAT (Health Equity Action Team), the coalition set out to complete two fundamental tasks that would lay the groundwork for future action:

- Survey the views of local public health directors on public health's purported role in achieving health equity through social justice; and
- Inquire what health directors perceived their health departments could do to address root causes of inequities, including: institutional racism and other forms of discrimination; unequal distribution of resources; environmental injustice; and unequal educational opportunities among others.

From the outset it was recognized that the HEAT initiative would fail if local health directors did not embrace the concept of health equity through social justice. Through a survey and subsequent focus groups, two important things became clear. First the vast majority of local health directors believed that public health should engage in efforts to address the root causes of health inequities. Secondly they also believed that it was their particular responsibility to do so as public health practitioners. The survey clearly demonstrated a consensus among health directors that public health does indeed have a role to play with respect to health equity and social justice—a leadership role and at times a supporting role with other community partners.

Furthermore the survey findings indicated that public health practitioners have a responsibility to address the root causes of ill health as both advocates and activists for the re-engineering of environmental, economic and social policies. While survey respondents acknowledged multiple barriers associated with this work, they also identified many strategies and actions that should be employed to assist local health practitioners move more decisively into the social justice milieu. Moreover, they expressed a desire to receive some guidance about what to do to achieve health equity with most recognizing that the work should begin with an effort to cultivate a greater understanding and awareness of the issues related to health and social inequalities among their own department staff.

Another theme to emerge was the need for data that would illuminate the underlying conditions that perpetuate health inequities at the community level. Health directors generally agreed timely data were critical to illustrating the social and economic conditions that lead to health inequities in their communities. There was further consensus that such data were necessary to initiate change. Thus the notion of producing a data-generating tool that could profile health inequities at the local level was born and ultimately became the primary focus of the HEAT initiative. The tool was called the Connecticut Health Equity Index (HEI or Index). Over the past ten years additional grants were subsequently applied for and received from the Universal Health Care Foundation of Connecticut, the Connecticut Health Foundation, the Center for Political and Economic Studies, the W.K. Kellogg Foundation, and the Robert Wood Johnson Foundation Public Health Practice Based Research Network to support the ongoing development, application, and evaluation of the Index.

## **Development Phase**

The development of the Index was framed by the need to fulfill several purposes:

- Provide a portrait of the social, economic and environmental conditions related to inequities in health and an instrument to measure inequities;
- Assist local health departments to engage in community dialogue regarding health disparities, focusing on root causes, not individual behaviors; and
- Facilitate community discourse and action related to documented health inequities.

The Index was intended to examine a community's essential socioeconomic characteristics and conditions associated with health inequities. These would include employment, adequacy of housing, educational attainment, poverty rates

and other factors. The next step was then to establish if correlations existed between these socioeconomic characteristics and critical health outcomes such as infant mortality, excessive morbidity, and rates of disease. The Index was also intended to provide a platform from which the concept of health equity could inspire people to take action leading to structural change.

## **Important Considerations in Instrument Development**

Several important assumptions underlie the construction of the Index. Foremost is that social conditions are major determinant influences on health status. Influences such as income, education and occupation help determine individual biology, risk behaviors, environmental exposures and access to resources that promote health. Larger institutional forces affect these determinants. These include discrimination (based on race, class, gender and age), segregation, lack of political control, lack of access to decision making structures, and the advancement of public or corporate policies that affect labor markets, trade, taxes, wages, land use and regulations.

A complete list of the assumptions that guided the development of the Index is included in Appendix A.

The Index was conceived as an instrument with the capacity for locating, quantifying and measuring the social determinants that lead to health disparities among different population groups. It was not intended as a tool to measure the usual health outcome data that are commonly employed in community health assessments. To construct an instrument capable of fulfilling this function, it was necessary to address several important considerations:

### **The significance of common meanings for the critical concepts associated with health inequity**

The terms *disparity*, *inequity* and *inequality* have been used interchangeably by practitioners, policy analysts and researchers as they refer to differences in health between different groups. As a result, disagreements have surfaced over the definition and use of these. As Cater-Pokras and Bouquet (2002) have stated, “These conflicting views have implications for resource allocation and reflect differing political ideologies.”

Consequently, CADH decided early on that clear definitions were critical when discussing the Index’s purpose and its implications. A commitment was made immediately to establish operational definitions for the key concepts incorporated by the Index. Furthermore, these definitions were to be based on an extensive review of the literature concerning the key concepts and terminology pertinent to health inequities.

A complete list of the definitions that were developed for the Index is included in Appendix B.

### **The choice between an Index or an indicator system, and its ramifications**

Indicators by themselves cannot measure or explain complex phenomena such as the social determinants of health. Researchers typically use indices and indicator systems to produce greater information about phenomena and conditions. Both are intended to be more than just a collection of indicator statistics. Both tools measure distinct components of a system. Most importantly both provide information that can illustrate how the individual components work together to produce an overall effect.

However, within this area of commonality there are distinct differences in how the tools are constructed and function. Thus CADH was presented with a decision on which would be the most appropriate tool for measuring and explaining a phenomenon for which there were no simple or direct measures.

An Index can be defined as a measurement tool that represents the comparison of numerous variables against reference points. In that context, it is a composite number that signifies the averaging and combining of a large group of measurements in a standardized way. Indices are useful tools for establishing benchmarks and measuring and tracking changes against them for social conditions or the performance of sectors such as markets and goods/services.

As composite measures, indices have inherent limitations that can mitigate their effectiveness if not properly interpreted. The primary one is reducing a multi-dimensional condition such as health equity into a single composite score. Other limitations include the arbitrary nature of selecting the units of measurement, weighting and scoring.

An **indicator system** is generally composed of a set of individual indicators that may or may not be classified by category. Within the existing framework, indicators can be combined in innovative ways to provide useful descriptive information about a condition. Sometimes, scoring and ranking are used, but not always. Unlike indices, indicator systems do not transform different units of measurement into common metrics that can be combined into an overall or composite score.

After much deliberation, CADH concluded that an Index, despite its shortcomings, was the most appropriate instrument for measuring the relationship between social determinants, health outcomes and health equity. It was felt that use of the standardized scoring and ranking incorporated in an Index was critical for portraying and understanding the differences between neighborhoods. Furthermore the composite score generated by an Index was

thought to be a useful summative measure for describing the impact of the social determinants. The Index score also appeared to lend itself more to statistical analysis against health outcomes and demographic variables.

### **The need to transform the concept of health inequity into an operational framework**

As previously suggested, the inter-connection among socioeconomic, political and environmental conditions, the historical context and power arrangements that generate them, and the resultant health outcomes at the neighborhood level is dynamic and complex. The pathways created by these forces are difficult to specify, let alone measure.

Yet, in order to move forward, an operational framework had to be created for the Index. First, the linkages between upstream forces and health status had to be spelled out as distinct elements of a defined process, shown in relationship to each other, and presented as a unified structure. Second, it was necessary to determine how the Index would fit into such a structure and how it would relate to its component parts. Finally, a working vocabulary had to be developed for the components. Concepts such as social-institutional forces, social determinants of health, community engagement, and structural change had to be described in operational terms.

### **The Challenge of Quantifying Health Disparities**

Ideally, the Index was intended to represent the context in which people live their lives. It was hoped that the indicators would measure a broad spectrum of conditions that influence an individual's life over the course of time. This goal has not yet been fully achieved, but recently we have been able to stratify data by time periods, based on 2000 and 2010 census data.

The methodology developed for the Index limited the range and depth of Core Indicators that could be used. Having reference-points *based on the state median* required each indicator to have a data source that included each of the 169 cities and towns in Connecticut. All data had to be consistently collected and compiled town to town, have the capacity to be disaggregated to the smallest geographic area (i.e., neighborhood), and lend itself to numeric scaling. These standards ultimately eliminated many data sources and explain why potential indicators were not selected, or were redefined as complementary indicators.

Consequently, the Index relied on census and administrative data sources to a greater degree than was initially intended. A number of measurements were eliminated as Core Indicators simply because they relied on observations or perceptions supported by survey and qualitative research. While these data had great potential for analysis in the cities where they were available, they were not

applicable for constructing statewide reference points. This included data on social cohesion, trust, life style choices, and work environment.

In other instances, data were either not comparable, consistent, and systematically collected from town to town. This made it impossible to calculate statewide averages. The shortcoming held true for housing code violations and tax delinquencies among other measures.

Some data could not be disaggregated to the neighborhood level. This included indicators that measured civic involvement and community safety. Other data were convoluted and could not differentiate. Two examples involved *women in the labor force* and the *use of public transportation*. Women in more affluent neighborhoods were just as likely not to be employed in the work force as women in impoverished neighborhoods albeit for substantially different reasons. Similarly, users of public transportation were likely to be found in a neighborhood in Darien as in a neighborhood in Bridgeport. Again, the indicator was unable to differentiate; the data points were unclear.

In numerous cases, towns simply did not collect the data. For example, potential measures of the urban environment or physical aspects of a neighborhood were not supported by the available data sources. Problems with infrastructure noise, trash and litter, rats and other conditions could not be used as Core Indicators because of this limitation.

## **The Political Context**

As the Index's framework began to take shape, the inherently political nature of the instrument emerged. Intended to be more than a measurement instrument, the Index was increasingly viewed as a catalyzing component in a process designed to stimulate community action on unacceptable neighborhood conditions. Structural change was considered to be the ultimate goal to redress the inequities that might be documented through the Index.

If properly applied, the Index might potentially upset the status quo. Fundamental inequities that underlie disparate health outcomes for segments of the population would be uncovered, and community stakeholders might organize to correct them. The potential for political conflict was real. As such, cities and towns, interested in using the Index, might be dissuaded, perceiving the tool to be threatening.

This realization was not a surprise to CADH. However, the perception of the Index as a political Pandora's Box had such potential to limit its use throughout the state that CADH had to develop strategies capable of dealing with this issue, up-front. As a result, guideline documents were developed that explained the concept of health equity, laid out the process for using the Index, and discussed the role of community involvement. This approach is described in the publication

*Tackling Health Inequities Through Public Health Practice: Theory to Action.*  
National Association of County and City Health Officials; Oxford University Press, 2010

## **Academic versus Field Research**

The Index's resonance lies in its balance between scientifically grounded research and community action. When the Index is viewed within its operational framework, it becomes apparent that its true value does not rest wholly in analysis or action. Both elements are inherently necessary to its application.

Every aspect of the Index was developed according to sound research practices, from the extensive literature search to the final pre-testing. The end result was an instrument that could differentiate between geographic areas and could tie the resultant Index scores to an area's health outcomes and demographic characteristics.

However, scientifically grounded research more often than not fails to result in the structural changes it calls for. For the Index truly to be successful, it has to lead to new equity-driven legislation, policies and practices, different patterns of resource allocation, and more participatory governance. Experience has shown that these types of structural change do not take place without the mobilization of communities.

As a result, considerable time and thought was spent on the Index process. How Index findings would lead to community engagement and mobilization, and how that activity could be focused on the fundamental or upstream causes of inequities were two major questions. A series of meetings were held with the staff of the Institute for Community Research (ICR) to examine how the Index could serve as a platform for community engagement.

The ensuing ICR discussions dealt with a wide range of issues concerning the relationship between research and community action. These included community buy-in, building trust, leadership capacity building, resource requirements, and goal setting.

As a result of these discussions, CADH gleaned greater insight into the specifics for involving neighborhood residents in the Index process. Survey instruments and corresponding methodologies used in other communities to collect qualitative data were located and compiled as potential resources for the demonstration sites.

## **Limitations of an Index**

An Index that provides a single metric upon which to assess an area's health status or to evaluate the impact of different interventions is very attractive to health officials, policy makers and advocates. However, indices have properties that can create problems unless they are fully understood and properly interpreted.

No one Index can truly represent reality. Health is multi-dimensional, affected by genetic makeup, life-style choices and behaviors - as well as by social determinants. Consideration of these influences must be regarded over a life-course, not just a single point in time. It is therefore difficult to comprehend the precise way in which indicators, acting synergistically, affect health, directly or indirectly. The Index should be seen as only a proxy or partial measure of health equity. All of the factors discussed below should be considered in determining whether or not the Index reflects the reality it is meant to represent.

Furthermore, any Index of this type that draws on a wide range of indicators will have a level of arbitrariness built into it. This is reflected in how the concept to be measured is defined (in this case, social determinants of health), and in the selection of indicators. Other domains and measures could have been chosen, possibly affecting the results. Or, the indicator construct could be an over-simplification of some domains that are being measured.

There is no *a priori* basis for selecting the weights to combine the determinant scores into a single value. A number of methods can be used, ranging from statistical techniques to the consensus of experts. Again the method selected will alter Index scores.

Moreover, the Index was not intended to explore causality as it relates to specific illnesses among sub-populations. Its goals were to determine the extent to which social influences resulted in inequities between geographic areas, and to determine whether or not those inequities had a relationship with differential health outcomes. The Index's value rests in pointing out the ways in which vulnerable populations become especially susceptible to disease and illness, not in establishing causality.

Future objectives for refinement of the Index are: 1) Improvement of the scoring methodology, ideally to be based on established benchmarks; these might be Healthy People 2020 leading health indicators, or state or locally derived benchmarks. 2) Improvement in data quality, e.g. data available at the neighborhood level, and including racial/ethnic information. 3) More multivariate modeling. 4) Selection of indicators such as more environmental justice indicators, and evaluation of neighborhood walkability scores as a transportation indicator. 5) Incorporation of the user experience from the next new interface version of the Index at [sdoh.org](http://sdoh.org), based on user testing.

### **3. Data Sources and Methodology**

#### **Source data spatial resolutions**

Data is obtained at the lowest possible spatial resolution. Social indicators and health outcomes were obtained at the census block group, zip codes, census tract, or municipality levels. The three pilot health districts (Ledge Light, New Haven, and Hartford) also provided neighborhood geographies to allow the Index to be presented within identifiable neighborhood names in addition to unfamiliar block group numbering.

The majority of health outcomes were obtained at the block group level with the following exceptions: Inpatient and outpatient hospitalization data was obtained from CHIME at the zip code level. The tumor registry data was obtained at the census tract level. Social indicators were obtained at a variety of spatial resolutions from the block group up to the town level. The spatial resolution of a variable is clearly identified in the data dictionary on the web site.

#### **Matching geographies to data sources**

The source data in the Index were obtained in two different formats; either as values by geographic region or as point data.

The source data was most commonly obtained as a set of values by geographic region. Geographic identifiers (i.e. five digit zip code) in the source data were manually mapped to the regions in the Index during the import process. Values that could not be matched to a valid geographic identifier were discarded.

An exception to this was the Federal Toxic Release Inventory (TRI) data which was received as point-source emissions. In this case, point sources were mapped to surrounding geographic regions using a probability distribution function.

#### **Demographic modeling**

In most cases, health outcomes were obtained as a count of disease occurrence in a geographic area. Raw counts were converted to rates using either the 2000 Census data, the Nielsen Claritas 2007 Pop-Facts Demographic Data, or the 2010 Census. We used the date chronologically closest to the time range of the health outcome to obtain the most accurate population rates.

#### **Methodology for Extrapolating Data to Other Spatial Resolutions**

One of the challenges of this project was that variables were obtained at a variety of spatial resolutions. We needed to develop a methodology to extrapolate values to geographic resolutions other than that of the source data. For example, we calculate values for each measure for all of the 169 municipalities in the state from data that is obtained at the zip code and block group resolution. Zip codes and many other areal units do not necessarily overlap or form a spatial hierarchy which would allow for simple aggregation of the source data.

We had to disaggregate the source data to the census block level. Then the block values are treated as building blocks from which we construct aggregate values for regions at larger geographic resolutions. For this calculation, the blocks are assumed to be wholly contained within a region at each higher geographic resolution. For example, a given block falls within only one block group and only one municipality.

In some cases, the blocks may overlap larger boundaries. In this case, we treat each block as if it occupied a single geographic point. For each block, we chose this point to be the **interior point**, which is defined as a point contained within the block boundary that is closest to its centroid.

Blocks were chosen because they are the smallest geographic resolution for which we have population and land-area values (from the 2000 census). The census data allows us to aggregate to larger resolutions with population weighted or land-area weighted averages.

All variables are aggregated up to higher resolutions by the population weighted average of the blocks. The only two exceptions to this are density (demogr50), which is weighted by land-area, and population itself (demogr01), which is a sum of the population values, not an average.

## **Correlations**

Correlations were calculated using the Spearman's rank correlation coefficient. Nonparametric statistics were chosen because they are independent of the distributions of the social and health variables. Correlations are run at all spatial resolutions. In the web interface, the smallest geographic unit possible was used to minimize the bias from the modifiable aerial unit problem.

Correlations are run at the spatial resolution of the variable, and at higher spatial resolutions. However, correlations are never run at smaller spatial resolutions because too much bias is introduced into correlation analyses when disaggregating variables. For example, skin cancer incidence is available at the tract level, and race=white is measured at the block group level. When examining skin cancer in the web interface, one observes a correlation of 0.40 with race:white. This is a correlation run at the tract level since skin cancer is collected at the tract level. When examining the variable race:white in the web interface, the correlation with skin cancer is NOT presented because only correlations with variables measured at the block group level are present.

## **Scoring methodology**

### **Calculating scores**

To obtain a consistent scoring system for consistent communication with users of the index, all measures are scored using deciles. This affords us the opportunity to develop a score that is independent of the variable distribution. Health outcome and determinant scores are inverted where necessary, so a score of 1 always represents a less desirable outcome and a score of 10 a more desirable outcome. This is not done for demographic variables, since higher and lower scores are demographic facts and do not contain value judgments.

To score a town, we average the measure values in the town (weighted by population) to calculate the value of the entire town. For example, imagine a situation where the percent of registered voters ranges from 10% to 100% at the block group level, and when aggregated to the town level, the range is from 40% to 60%. A town might be comprised of three block groups with equal populations, and with 10%, 10% and 100% registered voters. The value for the town is then the average of these block group values, or 40%#. This value is then converted to a decile score using the set of 169 towns in Connecticut.

### **Aggregating base measures to component and total scores**

A component score is an average of all individual base measure scores in its category. Missing scores are ignored in this calculation. The total score is an average of component scores. Scores will be weighted; see “Weighting of base measures” below.

### **Weightings of base measures**

The social and health component scores are calculated by combining the scores from the base measures using a weighted average, e.g.

$$\text{Economics} = (w1 \text{ civics01} + w2 \text{ civics02} + w3 \text{ civics03}) / (w1 + w2 + w3)$$

To estimate an appropriate value for these weights, we perform a principal component analysis (PCA) of the base measures within each social and health component, and take strongest PCA vector as the weights. The PCA analysis is done with variable scaling at the municipality geographic resolution, with missing data replaced by the median. (Since some of the data are from the municipality scale, that is the smallest resolution which contains all the base measures.)

For example, in the case of the economics social component this procedure gives weights of (0.37, 0.35, 0.28) for ([civics01](#), [civics02](#), [civics02](#)), which accounts for over half of the variance of those measures across the 169 municipalities.

The same PCA methodology can also find weights for the social determinants as they aggregate to give the total determinant score, as well as the health

categories which combine to give the total health score. In both of these cases, the PCA derived weights are fairly uniform. In other words, all the social determinants contribute to the determinant score, and all the health categories contribute to the health score.

In addition this procedure can also help identify measures which don't correlate well with others in the same component and which therefore may be candidates for removal. For example, of the 14 base measures which comprise the Economic Security social determinant, [capitl02](#) (Home Mortgage Purchases Initiated per 1000 Local Residents) has a slightly negative coefficient in the PCA analysis. We assign a weight of zero in the few such cases.

Other possible methodologies to find these weightings include a maximum-likelihood factor analysis (FA) or structural equation model (SEM). We examined factor analysis weightings, but found that PCA explained more of the variance and could be applied easily to social/health components made up of only a few base measures. SEM was not chosen because the measures in a category are intended to be highly correlated, and therefore modeling them simultaneously would be problematic. Moreover, we felt the weighting methodology should look at the categories only, and should not be designed to maximize relationship between the social determinants and health categories.

## **4. Definitions and Data Sources for Health Category Measures**

### **Accidents/Violence**

- [Accidents \(unintentional injuries\) \(AAMR\) \[aamr05\]](#)
- [All injuries \(AAMR\) \[aamr06\]](#)
- [Homicide & Legal Intervention \(YPLL\) \[yp116\]](#)
- [Homicide & legal intervention \(AAMR\) \[aamr16\]](#)
- [YPLL: accidents \[yp1105\]](#)
- [YPLL: injuries \[yp1106\]](#)

### **Health Care Access**

- [Ambulatory care sensitive hospitalizations \[access05\]](#)
- [Births Not Receiving Prenatal Care in the First Trimester \[access08\]](#)
- [Births with Non-adequate Prenatal Care \(APNCU Index\) \[access07\]](#)
- [Emergency department visits \[access03\]](#)
- [Outpatient visits \[access01\]](#)
- [Percent of hospitalizations that are without insurance \[access04\]](#)
- [Primary care sensitive ED visits \[access06\]](#)

### **Cancer**

- [Cancer \(AAMR\) \[aamr02\]](#)

- [Cancer \(YPLL\) \[ypll02\]](#)
- [Cancer Incidence Rate \[diseas10\\_2yr\]](#)
- [Cervical, Uterine or Ovarian cancer \(YPLL\) \[ypll19\]](#)
- [Cervical, Uterine, and Ovarian Cancer Incidence Rate \[diseas17\\_2yr\]](#)
- [Cervical, uterine or ovarian cancer \(AAMR\) \[aamr19\]](#)
- [Colo-rectal Cancer Incidence Rate \[diseas12\\_2yr\]](#)
- [Colo-rectal cancer \(AAMR\) \[aamr09\]](#)
- [Colo-rectal cancer \(YPLL\) \[ypll09\]](#)
- [Female Breast Cancer \(YPLL\) \[ypll12\]](#)
- [Female Breast Cancer Incidence Rate \[diseas16\\_2yr\]](#)
- [Female breast cancer \(AAMR\) \[aamr12\]](#)
- [Lung Cancer Incidence Rate \[diseas13\\_2yr\]](#)
- [Lung cancer \(AAMR\) \[aamr11\]](#)
- [Lung cancer \(YPLL\) \[ypll11\]](#)
- [Non-Hodgkins Lymphoma Incidence Rate \[diseas11\\_2yr\]](#)
- [Pancreatic Cancer Incidence Rate \[diseas19\\_2yr\]](#)
- [Pancreatic cancer \(AAMR\) \[aamr10\]](#)
- [Pancreatic cancer \(YPLL\) \[ypll10\]](#)
- [Prostate Cancer Incidence Rate \[diseas14\\_2yr\]](#)
- [Prostate cancer \(AAMR\) \[aamr20\]](#)
- [Prostate cancer \(YPLL\) \[ypll20\]](#)
- [Skin Cancer Incidence Rate \[diseas18\\_2yr\]](#)

## Cardiovascular

- [Major cardiovascular diseases \(AAMR\) \[aamr03\]](#)
- [YPLL: cardiovascular \[ypll03\]](#)

## Childhood Illness

- [Asthma-related ED visits, age 0-18 \[evqual01\]](#)
- [Asthma-related hospitalizations, age 0-18 \[evqual02\]](#)
- [Elevated lead levels as a percentage of children age 0-5, 2004-10 \[evqual03\\_3yr\]](#)

## Diabetes

- [Diabetes mellitus \(AAMR\) \[aamr07\]](#)
- [Diabetes mellitus \(YPLL\) \[ypll07\]](#)

## Infectious Disease

- [Chlamydia/Gonorrhea rate per 1000 residents \[diseas02\\_5yr\]](#)
- [Hepatitis C rate per 1000 residents \[diseas03\\_2yr\]](#)
- [Infectious and parasitic diseases \(AAMR\) \[aamr13\]](#)
- [Infectious and parasitic diseases \(YPLL\) \[ypll13\]](#)

## **Liver Disease**

- [Chronic liver disease and cirrhosis \(AAMR\) \[aamr14\]](#)
- [Chronic liver disease and cirrhosis \(YPLL\) \[yp114\]](#)

## **Mental Health**

- [Alcohol-induced deaths \(AAMR\) \[aamr17\]](#)
- [Alcohol-induced deaths \(YPLL\) \[yp117\]](#)
- [Drug-induced deaths \(AAMR\) \[aamr18\]](#)
- [Drug-induced deaths \(YPLL\) \[yp118\]](#)
- [Mental health ED treatments \[mental02\]](#)
- [Mental health hospitalizations \[mental01\]](#)

## **Life Expectancy**

- [All causes of Death \(AAMR\) \[aamr01\]](#)
- [YPLL: all causes \[yp101\]](#)

## **Renal Disease**

- [Nephritis, nephrotic syndrome, nephrosis \(AAMR\) \[aamr15\]](#)
- [Nephritis, nephrotic syndrome, nephrosis \(YPLL\) \[yp115\]](#)

## **Respiratory Illness**

- [Chronic lower respiratory diseases \(AAMR\) \[aamr04\]](#)
- [Chronic lower respiratory diseases \(YPLL\) \[yp104\]](#)

## **Appendix A**

### **Assumptions Made For Constructing the CT Health Equity Index**

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1. **Social conditions are major determinants of health.** These determinants acting at a collective level influence individual biology, individual risk behaviors, environmental exposures and access to resources that promote health. Examples of social determinants include income, education, occupation, wealth and assets, environment, access to health care and housing conditions.  
  
The determinants in turn are affected by larger social- institutional forces. These include discrimination based on race, class, gender, and age; segregation; lack of political control and access to decision-making structures; and public and corporate policies that affect labor markets, trade, taxes, wages, land use and regulations.
2. **There is a graded relationship between socio-economic position and health status that result in health disparities between different population groups and places, and over time.** The risk of adverse health outcomes increases with a decreasing level of socio-economic position. These disparities are considered to be inequities that are avoidable, unfair and unjust.
3. **An Index will be used as the instrument to portray an overall picture of the social determinants that affect the health equity of different population groups.** Its purpose will be as follows:
  - Provide a system-wide, holistic quantification and measurement of disparities that lead to health inequities and to establish the inter-relationships between the determinants that cause them.
  - Serve as a stimulus for collective community action and change efforts directed at the social-institutional forces that affect health equity.
  - Monitor and evaluate the impact of specific initiatives designed to address health inequities, as well as social policies and institutions that influence it.
4. **The CT Health Equity Index will be used to measure conditions at the smallest feasible geographic area.** For large urban areas, the HEI should have the capability to be used at the neighborhood level. For cities and towns where neighborhood level analysis is infeasible, the HEI should be appropriate for community-wide analysis.
5. **The selection of the social determinants will be based upon the experience gleaned from existing indices of health equity and deprivation.** These models will primarily be drawn from Canada, United Kingdom and countries participating in the Global Health Equity Alliance.

- 6. CT Health Equity Index will be designed using a framework that consists of the following components:**
  - Social Determinants
  - Criteria for the Selection of Indicators
  - Indicator Construct
    - Definition
    - Rationale
    - Reference Point
    - Measurement Scale
    - Data Sources
- 7. Proxy measures are necessary to quantify indicators that are not easily or directly measurable.**
- 8. Complementary indicators based on methods of observation, survey research and qualitative research are necessary to support in-depth analysis of specific issues raised by the HEI.**
- 9. HEI results (scores) must be further examined to determine their relationship with demographic indicators (race/ ethnicity, gender, age, residence) and health outcome indicators.**
- 10. The CT Health Equity Index must have the capability to serve as a stimulus for collective community action and change efforts directed at the social-institutional forces ultimately affecting health equity.** The data generated must be useful to advocacy for structural change that promotes equity-driven policy-making, priority setting, resource allocation and governance.

## **Appendix B**

### **Definitions Developed for the CT Health Equity Index**

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1. **Social Determinants of Health Equity.** The specific processes and pathways by which societal conditions affect population health and can be influenced by informed action. Examples include income, education, occupation, wealth and assets, environment, access to health care and housing conditions.  
  
Larger social- institutional forces in turn affect the determinants. These include discrimination based on race, class, gender, and age; segregation; lack of political control and access to decision-making structures; and public and corporate policies that affect labor markets, trade, taxes, wages, land use and regulations.
2. **Disparity.** The quantity that separates a group from a specified reference point on a particular measure of health equity that is expressed in terms of a rate, percentage, mean, median or other quantitative measure.
3. **Inequity.** The presence of unjust, unfair and avoidable social or health disparities between groups based on race/ ethnicity, gender, age or place of residence.
4. **Index.** A numeric scale used to compare two or more indicators with one another or with a reference number. A summary or statistical composite of two or more indicators that represents the general trend, performance, or condition of a system.
5. **Indicator.** A measurement used to describe the condition of a population group on a specific characteristic or event.
6. **Reference Point.** The specific value of a rate, percentage, mean, median or other quantitative measure from which a disparity can be measured.
7. **Measurement Scale.** A numerical scale used to compare variables against a designated reference point.
8. **Median.** The figure in a range of data that falls midway in the series between the highest and lowest values.
9. **Proxy Measure.** A stand-in measure used to approximate an actual condition, outcome or event when a direct measure is not feasible to data collection, time or resource constraints.
10. **Numerator.** The upper portion of a fraction used to calculate a rate, proportion or ratio, i.e., number of persons or households in a geographic area with the characteristic of interest or the number of cases or observed events.
11. **Denominator.** The lower portion of a fraction used to calculate a rate, proportion or ratio – the population for a rate-based measure, i.e., the total number of persons or

households in a geographic area being measured, the total number of persons served.

- 12. Absolute Measure of Disparity.** A simple arithmetic difference between a group rate and a specified reference point.
- 13. Relative Measure of Disparity.** Expresses the difference between the rates in terms of the chosen reference point. The percentage difference expresses the simple difference between the group rate and the reference point as a percentage of the reference point.

## **Appendix C**

### **Literature Search – Index Models and Methodologies**

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#### **Canadian**

- 1) Population Health Fund Guide – Health Canada
- 2) Social Determinants of Health Across the Life-Span – Health Canada  
Conference Papers summarized by Peggy Edwards
- 3) Society at a Glance: OECD Social Indicators 2005 – Organization for Economic Cooperation and Development, Canada
- 4) Indicators for a Healthy Community in *Developing a Healthy Communities Index* – Canadian Population Health Initiative  
Ron Colman
- 5) An Applied Policy Context for Indicators of Healthy Communities in *Developing a Healthy Communities Index* – Canadian Population Health Initiative  
John Burrett
- 6) Influences on the Population's Health in *Developing a Healthy Communities Index* – Canadian Population Health Initiative  
Dan Friedman
- 7) *Assessing the Health of Communities: Indicator Projects and Their Impacts* –  
Institute of Health Promotion Research, University of British Columbia

#### **United Kingdom**

- 1) Welsh Index of Multiple Deprivation
- 2) Scottish Index of Multiple Deprivation
- 3) Measures of Deprivation in Northern Ireland
- 4) Health Poverty Index – South East Public Health Observatory, London
- 5) The English Indices of Deprivation
- 6) *A Review of Methods for Measuring and Monitoring Social Inequality, Deprivation and Health Inequality* – Centre for Health Economics, University of York  
Roy Carr-Hill and Paul Chalmers-Dixon
- 7) *Indicators that Count! Measuring Population Health at the Community Level*  
Trevor Hancock

- 8) *The Public Health Observatory Handbook of Health Inequalities Measurement* – South East England Public Health Observatory, London  
Roy Carr-Hill and Paul Chalmers-Dixon

## **European**

- 1) *Social Determinants of Health: The Solid Facts* – World Health Organization Europe  
Richard Wilkinson and Michael Marmot
- 2) *European System of Social Indicators* – ZUMA Centre for Survey Research and Methodology, Germany

## **African/ Asian**

- 1) *The Equity Gauge: Concepts, Principles and Guidelines* – Global Equity Gauge Alliance

## **United States**

- 1) *Measuring Contextual Characteristics for Community Health*  
Marianne Hillemeier, John Lynch, Sam Harper and Michele Casper
- 2) *Public Health Disparities Geocoding Project* – Harvard School of Public Health
- 3) *Monitoring Equity in Health and Healthcare: A Conceptual Framework*  
Paula Braveman
- 4) *Vital Signs - Baltimore Neighborhood Indicators Alliance*
- 5) *Neighborhood Indicators: Taking Advantage of the New Potential* – American Planning Association
- 6) *Neighborhood Facts* – Piton Foundation, Colorado
- 7) *Building and Operating Neighborhood indicator Systems: A Guidebook* – National Neighborhood Indicators Partnership, The Urban Institute
- 8) *Identifying Robust, Parsimonious Neighborhood Indicators* – College of Urban, Labor and Metropolitan Affairs – Wayne State University and The Urban Institute
- 9) *Neighborhoods and Health*  
Ichiro Kawachi and Lisa Berman
- 10) *Tools for Monitoring the Healthcare Safety Net*  
John Billings, J.D.

- 11) *Estimating the Size of the Uninsured and Other Vulnerable Populations in a Local Area*  
Lynn Blewett and Timothy Beebe
- 12) Measures for Community Research – Aspen Institute
- 13) Social Health Index – Marc Miringoff, Fordham Institute for Innovation in Social Policy
- 14) Child Development Index of Child Well-Being – Kenneth Land, Duke University
- 15) *Neighborhood Context of Well-Being* – Robert Sampson, Harvard University
- 16) Genuine Progress Indicator – Redefining Progress
- 17) Yale Social Science Data Archive: Social Indicators
- 18) Oregon Benchmarks – The Oregon Progress Board
- 19) Kids Count - Annie E. Casey Foundation
- 20) Community and Regional Indicators – Annotated Bibliography – Iowa State University
- 21) Methodological Issues in Measuring Health Disparities – Centers for Disease Control and Prevention

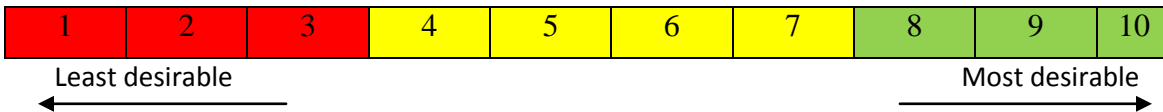
#### **Pan American**

- 1) *Health Indicators: Building Blocks for Health Analysis* – Pan American Health Organization
- 2) *Core Health Data System* - Pan American Health Organization

## Appendix 5b

### Connecticut Association of Directors of Health - Health Equity Index Data Tables

The following spreadsheets contain data from the Health Equity Index for all the towns in Middlesex County. For each town, actual data values are given followed by Index scores in parenthesis. The scores are calculated on a 10-point scale with 1 indicating the least desirable community conditions or health outcomes, and 10 indicating the most desirable. A score of 5 is the median value for the state. Data point has also been color coded; red for the lowest scores (1- 3), yellow for scores that are close to the state median (4-7) and green for the highest scores (8 – 10).



Individual indicators have been grouped into separate sections based on the CTG key focus health areas of tobacco, healthy eating and active living and preventive clinical services. We have also added sections for Demographics, Accidents and Violence, Community Safety, Mental Health, Social Determinants and Health Care Access. Using the spreadsheets one can identify areas of concern within the county for further analysis. One can also identify individual towns with concerning statistics for further study, and by using the Health Equity Index it will be possible to look at some of these conditions at a neighborhood or census block group level and by demographic elements.

Town	ACCIDENTS/VIOLENCE					
	Accidents AAMR	All Injuries AAMR	Homicides & Legal Interference AAMR	Homicides & Legal Interference YPLL	Accidents YPLL	All Injuries YPLL
Chester	38 (4)	43 (5)	0 (6)	0 (6)	868 (4)	1,038 (5)
Clinton	46 (3)	68 (3)	0 (6)	0 (6)	1,203 (3)	1,791 (3)
Cromwell	26 (6)	35 (6)	0 (6)	0 (6)	611 (5)	903 (6)
Deep River	21 (6)	37 (6)	5 (2)	295 (2)	251 (7)	816 (6)
Durham	20 (7)	24 (7)	0 (6)	0 (6)	715 (5)	860 (6)
East Haddam	29 (5)	41 (6)	2 (2)	103 (2)	854 (4)	1,310 (5)
East Hampton	28 (6)	35 (6)	0 (6)	0 (6)	677 (5)	984 (6)
Essex	17 (7)	25 (7)	0 (6)	0 (6)	430 (6)	700 (7)
Haddam	31 (5)	39 (6)	3 (2)	163 (2)	624 (5)	942 (6)
Killingworth	26 (6)	47 (5)	0 (6)	0 (6)	245 (7)	815 (6)
Middlefield	28 (6)	32 (6)	0 (6)	0 (6)	855 (4)	1,050 (5)
Middletown	31 (5)	45 (5)	6 (2)	212 (2)	891 (4)	1,454 (4)
Old Saybrook	40 (5)	54 (4)	0 (6)	0 (6)	556 (6)	954 (6)
Portland	16 (7)	24 (7)	0 (6)	0 (6)	217 (7)	468 (7)
Westbrook	29 (5)	29 (7)	0 (6)	0 (6)	461 (6)	461 (7)

Town	COMMUNITY SAFETY	
	Crimes Against Persons per 1,000 Residents	Crimes Against Property per 1,000 Residents
Chester	0 (8)	4 (10)
Clinton	1 (3)	20 (3)
Cromwell	n/a	n/a
Deep River	1 (5)	6 (8)
Durham	0 (8)	9 (7)
East Haddam	0 (8)	4 (10)
East Hampton	0 (9)	8 (8)
Essex	1 (5)	5 (10)
Haddam	1 (6)	5 (9)
Killingworth	1 (4)	3 (10)
Middlefield	0 (8)	11 (5)
Middletown	1 (4)	29 (2)
Old Saybrook	0 (8)	23 (2)
Portland	0 (7)	14 (4)
Westbrook	1 (4)	10 (6)

Town	MENTAL HEALTH					
	Alcohol Induced Deaths (AAMR)	Alcohol Induced Deaths (YPLL)	Drug Induced Deaths (AAMR)	Drug Induced Deaths (YPLL)	Mental Health ED Treatments	Mental Health Hospitalizations
Chester	7 (3)	15 (3)	5 (5)	170 (4)	6 (4)	11 (6)
Clinton	3 (3)	86 (3)	21 (3)	726 (3)	7 (3)	11 (5)
Cromwell	2 (3)	92 (3)	15 (4)	457 (4)	6 (5)	10 (6)
Deep River	10 (3)	125 (3)	14 (4)	286 (4)	8 (3)	11 (5)
Durham	5 (3)	186 (2)	7 (4)	211 (4)	5 (6)	7 (8)
East Haddam	5 (3)	131 (3)	14 (4)	554 (4)	4 (7)	8 (8)
East Hampton	6 (3)	129 (3)	15 (4)	438 (4)	5 (6)	8 (8)
Essex	2 (3)	34 (3)	4 (5)	94 (4)	5 (6)	8 (8)
Haddam	4 (3)	156 (3)	5 (5)	203 (4)	4 (7)	7 (8)
Killingworth	14 (2)	57 (3)	10 (4)	295 (4)	4 (8)	6 (9)
Middlefield	17 (2)	585 (1)	17 (3)	604 (3)	5 (6)	7 (8)
Middletown	6 (3)	153 (3)	15 (4)	560 (4)	12 (1)	21 (2)
Old Saybrook	3 (3)	74 (3)	13 (4)	467 (4)	5 (5)	11 (5)
Portland	11 (2)	364 (2)	2 (5)	55 (4)	7 (4)	10 (6)
Westbrook	6 (3)	116 (3)	4 (5)	128 (4)	6 (4)	14 (4)

Town	TOBACCO RELATED HEALTH OUTCOME MEASURES						
	AAMR Lung Cancer per 100,000	YPLL Lung Cancer per 100,000	Incidence Lung Cancer per 100,000	ED < 18 Asthma per 100,00	Hosp <18 Asthma per 100,000	AAMR Chronic Lower Resp Disease per 100,000	YPLL Chronic Lower Resp Disease per 100,000
Chester	37 (6)	81 (7)	64 (6)	306 (7)	20(9)	36 (4)	44 (4)
Clinton	34 (6)	341 (4)	57 (7)	486 (5)	121 (3)	40 (4)	74 (4)
Cromwell	33 (7)	269 (5)	64 (6)	458 (5)	95 (5)	15 (7)	22 (4)
Deep River	23 (8)	58 (7)	39 (9)	403 (5)	46 (8)	24 (6)	56 (4)
Durham	40 (6)	224 (5)	58 (7)	279 (8)	95 (5)	29 (5)	32 (4)
East Haddam	30 (7)	199 (6)	65 (6)	297 (7)	68 (6)	39 (4)	217 (3)
East Hampton	43 (5)	222 (5)	81 (4)	584 (4)	63 (6)	31 (5)	18 (4)
Essex	45 (5)	336 (4)	85 (3)	186 (9)	15 (9)	40 (4)	77 (4)
Haddam	39 (6)	736 (2)	94 (2)	321 (7)	41 (8)	39 (4)	0 (7)
Killingworth	51 (4)	339 (4)	117 (1)	212 (9)	47 (7)	22 (6)	11 (4)
Middlefield	52 (4)	321 (4)	62 (6)	459 (5)	101 (5)	34 (5)	18 (4)
Middletown	57 (4)	485 (3)	80 (4)	1,014 (2)	100 (5)	28 (5)	174 (3)
Old Saybrook	42 (5)	269 (5)	80 (4)	255 (8)	88 (5)	47 (3)	313 (2)
Portland	47 (5)	473 (3)	60 (7)	346 (6)	66 (6)	30 (5)	71 (4)
Westbrook	37 (6)	323 (4)	88 (3)	346 (6)	47 (7)	42 (4)	130 (3)
BENCHMARK	45.5/100,000						

HP 2020

Town	HEALTHY EATING ACTIVE LIVING HEALTH OUTCOME MEASURES	
	AAMR Diabetes Mellitus per 100,000	YPLL Diabetes Mellitus per 100,000
Chester	17 (5)	353 (2)
Clinton	11 (6)	23 (4)
Cromwell	30 (3)	195 (3)
Deep River	0 (8)	0 (7)
Durham	13 (5)	103 (3)
East Haddam	18 (4)	172 (3)
East Hampton	9 (6)	87 (3)
Essex	14 (5)	133 (3)
Haddam	3 (6)	31 (4)
Killingworth	3 (6)	0 (7)
Middlefield	13 (5)	55 (3)
Middletown	16 (5)	102 (3)
Old Saybrook	20 (4)	148 (3)
Portland	9 (6)	52 (3)
Westbrook	9 (3)	81 (3)

Town	PREVENTIVE CLINICAL SERVICES				
	AAMR CVD	YPLL CVD	Incidence Cervical, Uterine Ovarian	AAMR Cervical, Uterine, Ovarian	YPLL Cervical, Uterine, Ovarian
Chester	128 (9)	252 (9)	79 (2)	17 (4)	463 (2)
Clinton	207 (6)	849 (6)	50 (5)	9 (4)	179 (2)
Cromwell	197 (6)	914 (5)	41 (6)	25 (3)	109 (3)
Deep River	201 (6)	907 (5)	57 (4)	18 (3)	0 (7)
Durham	233 (5)	817 (6)	13 (10)	0 (7)	0 (7)
East Haddam	164 (8)	802 (6)	42 (6)	4 (4)	113 (3)
East Hampton	198 (6)	949 (5)	49 (5)	7 (4)	0 (7)
Essex	154 (8)	1,015 (5)	51 (5)	19 (3)	527 (2)
Haddam	257 (4)	985 (5)	48 (5)	5 (4)	59 (3)
Killingworth	249 (4)	1,090 (4)	83 (2)	2 (4)	0 (7)
Middlefield	169 (8)	525 (7)	36 (7)	9 (4)	409 (2)
Middletown	260 (3)	1,319 (4)	53 (5)	19 (3)	143 (3)
Old Saybrook	224 (5)	997 (5)	90 (2)	18 (3)	174 (2)
Portland	222 (5)	659 (7)	50 (5)	25 (3)	425 (2)
Westbrook	170 (7)	767 (6)	60 (4)	30 (2)	284 (2)

Town	PREVENTIVE CLINICAL SERVICES					
	Incidence Colo- rectal Cancer	AAMR Colo- rectal Cancer	YPLL Colo-rectal Cancer	Incidence Female Breast Cancer	AAMR Female Breast Cancer	YPLL Female Breast Cancer
Chester	32 (8)	28 (3)	0 (7)	213 (4)	14 (5)	218 (3)
Clinton	63 (3)	7 (6)	18 (3)	202 (4)	11 (5)	205 (3)
Cromwell	45 (6)	12 (5)	84 (3)	183 (5)	28 (4)	200 (3)
Deep River	68 (3)	43 (1)	247 (2)	235 (3)	17 (5)	11 (4)
Durham	45 (6)	8 (6)	262 (2)	167 (6)	21 (5)	239 (3)
East Haddam	44 (6)	18 (4)	158 (3)	175 (6)	0 (8)	0 (7)
East Hampton	67 (3)	20 (4)	109 (3)	161 (6)	37 (3)	470 (3)
Essex	41 (7)	22 (3)	254 (2)	252 (2)	0 (8)	0 (7)
Haddam	59 (4)	10 (5)	160 (3)	171 (6)	34 (3)	193 (4)
Killingworth	30 (9)	6 (6)	102 (3)	210 (4)	22 (4)	315 (3)
Middlefield	51 (5)	23 (3)	157 (3)	298 (1)	19 (5)	212 (3)
Middletown	49 (5)	14 (5)	112 (3)	168 (6)	16 (5)	271 (3)
Old Saybrook	35 (8)	8 (6)	110 (3)	222 (3)	34 (3)	769 (2)
Portland	37 (7)	7 (6)	87 (3)	274 (1)	9 (5)	49 (4)
Westbrook	49 (5)	14 (5)	205 (2)	213 (4)	16 (5)	107 (4)

Town	PREVENTIVE CLINICAL SERVICES				
	Incidence Prostate Cancer	AAMR Prostate Cancer	YPLL Prostate Cancer	Incidence Skin Cancer	Percent Hospitalizations Without Insurance
Chester	235 (2)	50 (2)	106 (2)	107 (1)	22 (6)
Clinton	207 (3)	27 (4)	19 (2)	53 (4)	23 (6)
Cromwell	140 (7)	37 (3)	89 (2)	39 (5)	30 (3)
Deep River	263 (1)	21 (4)	22 (2)	89 (2)	16 (8)
Durham	127 (8)	26 (4)	162 (1)	59 (3)	28 (4)
East Haddam	170 (5)	19 (4)	0 (6)	36 (6)	25 (5)
East Hampton	178 (5)	11 (4)	76 (2)	53 (4)	31 (2)
Essex	242 (2)	13 (4)	0 (6)	174 (1)	20 (7)
Haddam	170 (5)	31 (3)	219 (1)	72 (2)	29 (3)
Killingworth	159 (6)	44 (3)	0 (6)	42 (5)	24 (5)
Middlefield	284 (1)	25 (4)	0 (6)	59 (3)	25 (5)
Middletown	162 (6)	22 (4)	87 (2)	27 (7)	25 (5)
Old Saybrook	204 (3)	32 (3)	0 (6)	89 (2)	20 (7)
Portland	141 (7)	42 (3)	112 (1)	71 (2)	30 (3)
Westbrook	137 (7)	17 (4)	0 (6)	104 (1)	16 (8)

Town	SOCIAL DETERMINANTS					
	ECONOMIC SECURITY			EMPLOYMENT	EDUCATION	
	Median Household Income	Percent Population Living in Poverty	Percent Household with Income Below Poverty Line	Unemployment as Percent of Civilian Labor Force	High School Graduation Rate	Percent 4 <sup>th</sup> Grade Meeting CT Mastery Test Goals
Chester	64,912 (7)	1 (9)	2 (8)	3 (6)	n/a	n/a
Clinton	62,233 (7)	4 (6)	5 (5)	3 (6)	96 (5)	62 (5)
Cromwell	61,268 (7)	4 (6)	4 (6)	3 (6)	97 (6)	62 (5)
Deep River	52,128 (5)	5 (5)	5 (5)	4 (5)	n/a	n/a
Durham	77,822 (9)	2 (8)	2 (8)	2 (8)	88 (2)	66 (7)
East Haddam	62,157 (7)	3 (7)	2 (8)	4 (4)	96 (5)	60 (5)
East Hampton	66,795 (7)	3 (6)	3 (7)	14 (1)	99 (9)	65 (6)
Essex	69,888 (8)	3 (7)	3 (7)	3 (6)	n/a	n/a
Haddam	74,407 (8)	3 (6)	3 (7)	3 (7)	100 (10)	63 (5)
Killingworth	84,958 (9)	1 (9)	1 (9)	3 (6)	100 (10)	63 (5)
Middlefield	61,653 (7)	2 (8)	2 (8)	1 (9)	88 (2)	66 (7)
Middletown	49,233 (4)	8 (4)	8 (4)	5 (4)	97 (6)	55 (4)
Old Saybrook	64,071 (7)	5 (5)	3 (7)	6 (3)	100 (10)	68 (7)
Portland	62,550 (7)	5 (5)	5 (5)	4 (5)	99 (9)	64 (6)
Westbrook	58,102 (6)	5 (5)	5 (5)	2 (7)	98 (8)	73 (8)

Town	HEALTH CARE ACCESS				
	Births not Receiving Prenatal Care First Trimester	APNCU	E.D. Visits	Primary Care E.D. Visits	Outpatient
Chester	7 (6)	5 (6)	38,223 (3)	61,514 (6)	9,283 (4)
Clinton	6 (7)	3 (7)	34,490 (4)	62,745 (4)	9,086 (4)
Cromwell	9 (6)	5 (6)	27,554 (5)	59,740 (7)	11,024 (8)
Deep River	10 (5)	7 (4)	40,161 (2)	63,447 (4)	9,252 (4)
Durham	5 (8)	3 (8)	20,636 (8)	58,217 (9)	10,392 (7)
East Haddam	5 (8)	5 (6)	34,261 (4)	63,176 (4)	9,677 (5)
East Hampton	7 (7)	4 (7)	35,363 (3)	65,902 (2)	8,035 (2)
Essex	6 (7)	4 (6)	31,774 (4)	56,143 (10)	9,158 (4)
Haddam	5 (8)	2 (8)	27,261 (5)	60,222 (7)	10,822 (8)
Killingworth	11 (5)	4 (6)	25,341 (6)	60,054 (7)	9,093 (4)
Middlefield	9 (6)	3 (8)	25,284 (6)	59,842 (7)	12,455 (10)
Middletown	9 (6)	6 (5)	44,808 (2)	62,841 (4)	10,186 (6)
Old Saybrook	7 (7)	3 (7)	38,779 (3)	61,697 (6)	10,097 (6)
Portland	5 (8)	2 (8)	30,401 (4)	61,867 (5)	10,812 (8)
Westbrook	12 (4)	6 (5)	45,553 (2)	63,159 (4)	10,526 (7)

Town	DEMOGRAPHICS							
	Total Population	Diversity Index	Households <18 yo	Average Age	% Population <8 yo	% Population > 65 yo	Overall SDOH Score	Overall HO Score
Chester	3,835	Low	31	42	10	17	8	5
Clinton	13,665	Low	36	38	11	12	6	5
Cromwell	13,701	Average	30	41	9	17	6	5
Deep River	4,709	Average	32	39	9	14	7	6
Durham	7,385	Low	43	38	11	11	8	6
East Haddam	8,885	Low	37	38	11	12	7	5
East Hampton	15,339	Average	39	33	8	9	7	5
Essex	6,800	Low	30	45	10	21	7	6
Haddam	7,757	Low	37	40	9	12	7	6
Killingworth	6,454	Low	42	41	12	13	8	6
Middlefield	4,274	Low	36	40	9	16	7	5
Middletown	45,294	Average	29	37	10	14	4	4
Old Saybrook	10,523	Low	31	45	9	22	7	5
Portland	9,771	Low	36	39	11	15	6	5
Westbrook	6,636	Low	31	42	9	18	7	5

**APPENDIX 6a MIDDLESEX COUNTY ASSETS THAT SUPPORT HEALTHY EATING**  
(September 2012)

<b>CHESTER</b>	
Chester Elementary School Cafeteria	23 Ridge Road, Chester
Chester Farmers Market	Water Street and Main Street, Chester
Chester Food Pantry	203 Middlesex Turnpike, Chester
Estuary Council of Seniors Congregate Meals	29 West Main Street, Chester
Organon a Market	56 Middlesex Turnpike, Chester
The Local Beet Green Grocery	1 Main Street, Chester
<b>CLINTON</b>	
Clinton Farmers Market	48 East Main Street, Clinton
Jared Eliot Middle School Cafeteria	69 Fairy Dell Road, Clinton
Joel Elementary School Cafeteria	137 Glenwood Road, Clinton
Morgan High School Cafeteria	27 Killingworth Turnpike, Clinton
Pierson School Cafeteria	75 East Main Street, Clinton
<b>CROMWELL</b>	
Baci Grill	134 Berlin Road, Cromwell
Cromwell Farmers Market	52 Missionary Road, Cromwell
Cromwell High School Cafeteria	34 Evergreen Road, Cromwell
Cromwell Middle School Cafeteria	6 Capt James Mann Drive, Cromwell
Edna C. Stevens School Cafeteria	25 Court Street, Cromwell
Town of Cromwell Human Services Food Pantry	41 West Street, Cromwell
Woodside Intermediate School Cafeteria	30 Woodside Road, Cromwell
<b>DEEP RIVER</b>	
Deep River Farmers Market	245 Main Street, Deep River
John Winthrop Middle School Cafeteria	1 Winthrop Road, Deep River
Valley Regional High School Cafeteria	256 Kelsey Hill Road, Deep River
<b>DURHAM</b>	
Brewster Elementary Regional School District 13 Cafeteria	126 Tuttle Road, Durham
Coginchaug Regional District 13 High School Cafeteria	135 Pickett Lane, Durham
Durham Farmers Market	Town Green on Main Street, Durham
Francis Korn Regional District 13 Elementary School Cafeteria	144 Pickett Lane, Durham
Frank Ward Strong Middle School District 13 Cafeteria	191 Main Street, Durham
The Whole Enchilada	370 Main Street, Durham
Town of Durham Human Services Food Pantry	30 Town House Road, Durham

<b>EAST HADDAM/MOODUS</b>	
East Haddam Elementary School Cafeteria	45 Joe Williams Road, Moodus
Nathan Hale Ray High School	15 School Drive, Moodus
Nathan Hale-Ray Middle School Cafeteria	73 Clark Gates Road, Moodus
Town Grange Hall Food Bank & Farmers Market	488 Town Street, East Haddam
<b>EAST HAMPTON</b>	
Diane Bussolini, Registered Dietician	15 Myrtle Road, East Hampton
East Hampton Center School Cafeteria	7 Summit Street, East Hampton
East Hampton Farmers Market	59 Main Street, East Hampton
East Hampton High School Cafeteria	15 North Maple Street, East Hampton
East Hampton Middle School Cafeteria	19 Childs Road, East Hampton
Memorial School	20 Smith Street, East Hampton
Stop and Shop Supermarket Organic Produce	11 E High Street, East Hampton
Town of East Hampton Social Services Food Bank	240 Middletown Avenue, East Hampton
Town of East Hampton Senior Center Cafe & Meals on Wheels	105 Main Street, East Hampton
<b>ESSEX/CENTERBROOK</b>	
Connecticut Farmers Market	36 Main Street, Essex
Essex Regional District 4 Elementary School Cafeteria	108 Main Street, Centerbrook
Shoreline Soup Kitchen and Pantry at First Baptist Church of Essex	10 Prospect Street, Essex
Shoreline Soup Kitchen and Pantry at St John's Episcopal Church	23 Main Street, Essex
Shoreline Soup Kitchen and Pantry at Trinity Lutheran Church	109 Main Street, Essex
<b>KILLINGWORTH</b>	
Haddam-Killingworth School Cafeteria	451 Connecticut 81, Killingworth
Killingworth Elementary School Cafeteria	340 Connecticut 81, Killingworth
Platt Nature Center	344 Roast Meat Hill Road, Killingworth
The Country Squire	243 Connecticut 80, Killingworth
<b>HADDAM/HIGGANUM</b>	
Burr Elementary School Cafeteria	792 Killingworth Road, Higganum
Haddam Elementary School Cafeteria	272 Saybrook Road, Higganum
Haddam-Killingworth High School Cafeteria	95 Little City Road, Higganum
Town and Country Nurseries Farmers Market	1036 Saybrook Road, Haddam

<b>MIDDLEFIELD</b>	
John Lyman Regional District 13 Elementary School Cafeteria	106 Way Road, Middlefield
Meals on Wheels at the Middlefield Senior Center	405 Main Street, Middlefield
Middlefield Memorial Regional School District 13 Middle School Cafeteria	124 Hubbard Street, Middlefield
Town of Middlefield Food Bank	405 Main Street, Middlefield
<b>MIDDLETOWN</b>	
Anoho Asian Noodle House	320 Main Street, Middletown
Bielefield School Cafeteria	70 Maynard Street, Middletown
Community Health Center/Oasis Wellness Center Congregate Meals	33 Ferry Street, Middletown
Community Renewal Team Congregate and Home-Delivered Meals	44 Hamlin Street, Middletown
Farm Hill School Cafeteria	390 Ridge Road, Middletown
It's Only Natural Restaurant	386 Main Street, Middletown
Keigwin Middle School Cafeteria	99 Spruce Street, Middletown
Lawrence School Cafeteria	Kaplan Drive, Middletown
MacDonough Elementary School Cafeteria	66 Spring Street, Middletown
Meals on Wheels at Middletown Senior Center	150 Williams Street, Middletown
Meals on Wheels at Stonycrest Meals Site	325 Newfield Street, Middletown
Middletown High School Cafeteria	200 Larosa Lane, Middletown
Moody School Cafeteria	300 Country Club Road, Middletown
Ruby's Deli	338 Main Street, Middletown
Saint Vincent de Paul/Amazing Grace Food Pantry	16 Stack Street, Middletown
Saint Vincent de Paul Soup Kitchen	617 Main Street, Middletown
Shiloh Baptist Church Food Pantry	346 Butternut Street, Middletown
Snow School Cafeteria	299 Wadsworth Street, Middletown
Spencer School Cafeteria	207 Westfield Street, Middletown
Udupi Bhavan Vegetarian Restaurant	749 Saybrook Road, Middletown
Wesley School Cafeteria	10 Wesleyan Hills Road, Middletown
Woodrow Wilson Middle School Cafeteria	370 Hunting Hill Avenue, Middletown
Zion Baptist Church Food Pantry	16 James A Moses Avenue, Middletown

<b>OLD SAYBROOK</b>	
Estuary Regional Senior Center Congregate Meals	220 Main Street, Old Saybrook
Foodworks Natural Food Market	17 Main Street, Old Saybrook
Kathleen E. Goodwin Elementary School	80 Old Boston Post Road, Old Saybrook
Old Saybrook Farmers Market	210 Main Street, Old Saybrook
Old Saybrook High School	1111 Boston Post Road, Old Saybrook
Old Saybrook Middle School	60 Sheffield Street, Old Saybrook
Old Saybrook School Catering	1111 Boston Post Road, Old Saybrook
Shoreline Food Pantry at Old Saybrook Congregational Church	366 Main Street, Old Saybrook
St. John School	42 Maynard Road, Old Saybrook
<b>PORTLAND</b>	
Brownstone Intermediate School	314 Main Street, Portland
Gildersleeve School Cafeteria	575 1/2 Main Street, Portland
Portland High School Cafeteria	95 High Street, Portland
Portland Middle School Cafeteria	93 High Street, Portland
Portland Senior Center Cafe & Food Bank	7 Waverly Avenue, Portland
Q-P Farm Market	1339 Portland-Cobalt Road, Portland
Tri-Town Foods Organic Produce	316 Marlborough Street, Portland
Valley View School Cafeteria	81 High Street, Portland
<b>WESTBROOK</b>	
Daisy Ingram Elementary School Cafeteria	105 Goodspeed Drive, Westbrook
Westbrook Farmers Market	314 Flat Rock Place, Westbrook
Westbrook Middle and High School Cafeteria	156 McVeagh Road, Westbrook

**APPENDIX 6b MIDDLESEX COUNTY ASSETS THAT SUPPORT ACTIVE LIVING**  
(September 2012)

<b>CHESTER</b>	
North Quarter Park	Main Street and Middlesex Avenue, Chester
Town of Chester Parks and Recreation Department	203 Middlesex Turnpike, Chester
YMCA Camp at Cedar Lake	West Main Street, Chester
<b>CLINTON</b>	
Clinton Country Club	145 Old Westbrook Road, Clinton
Shoreline Fitness	141 West Main Street, Clinton
Snap Fitness	266 East Main Street, Clinton
Town of Clinton Park and Recreation	201 Killingworth Turnpike, Clinton
<b>CROMWELL</b>	
Accelerated Fitness Solutions	77 Berlin Road, Cromwell
Curves	136 Berlin Road, Cromwell
Elite Fitness	199 Shunpike Road, Cromwell
Facilitated Healing Center	211 Shunpike Road, Cromwell
Japanese Karate	37 Berlin Road, Cromwell
Jiu-Jitsu and Strength Academy	229 Shunpike Road, Cromwell
MARC Vocational and Leisure Resources for Disabilities and Health	421 Main St, Cromwell
Middlesex Area Patient Services	12 Agawam Drive, Cromwell
Nitsuj Mixed Martial Arts	199 Shunpike Road, Cromwell
TPC at River Highlands	1 Golf Club Road, Cromwell
Tri-Town Health Club and Champion Skating	6 Progress Drive, Cromwell
Town of Cromwell Recreation Department	41 West St, Cromwell
WOW Fitness and Alfa Fitness	20 Sebethe Drive, Cromwell
<b>DEEP RIVER</b>	
Squared Fitness	500 Main Street, Deep River
Town of Deep River Parks and Recreation	17 Main Street, Deep River
<b>DURHAM</b>	
Connecticut Fitness Coach	16 Commerce Circle, Durham
Core Club	350 Main Street, Durham
Durham Fitness	6 Main Street, Durham
Town of Durham Activity Center	350 Main St, Durham
Town of Durham Parks and Recreation Department	30 Town House Road, Durham
Town of Durham Recreation Fields	35 Pickett Lane, Durham
<b>EAST HADDAM/MOODUS</b>	
Banner Golf Course	10 Banner Road, Moodus
Devil's Hopyard State Park	366 Hopyard Road, East Haddam

East Haddam Parks and Recreation Department	7 Main Street, East Haddam
Fox Hopyard Golf Course	1 Hopyard Road, East Haddam
Gillette Castle State Park	67 River Road, East Haddam
Machimoodus State Park	128 Leesville Road, East Haddam
<b>EAST HAMPTON</b>	
Air Line Trail at Cranberry Bog	Smith Street, East Hampton
Defensive Edge Martial Arts	249 W High St, East Hampton
East Hampton Parks and Recreation Department	240 Middletown Ave, East Hampton
Fit Trix Fitness Center	84 E High St, East Hampton
Goff House Fitness Classes	2 Barton Hill Rd, East Hampton
One on One Get Fit	95 N Main St, East Hampton
Salmon River State Park	Route 16, East Hampton
Sears Park	68 N Main St, East Hampton
Team Fitness	11 Main St, East Hampton
Tactical Fitness	32 Bevin Blvd, East Hampton
<b>ESSEX</b>	
Curves for Women	61 North Main Street, Essex
Essex Pilates	2 Nott Lane, Essex
Peak Performance	1 Eagle Ridge, Essex
Snap Fitness	125 Westbrook Road, Essex
Town of Essex Parks and Recreation	29 West Avenue, Essex
USA Kempo Academy	17 Industrial Park Road, Essex
<b>HADDAM/HIGGANUM</b>	
Cockaponset State Forest	18 Ranger Road, Haddam
Eagle Landing State Park	19 Bridge Road, Haddam
George Dudley Seymour State Park	Clarkhurst Road, Haddam
Haddam Island State Park	located in the Connecticut River, Haddam
Haddam-Killingworth Parks and Recreation Department	91 Little City Rd, Higganum
Haddam-Killingworth Recreation	95 Little City Road, Higganum
Haddam Meadows State Park	Route 154, Haddam
Higganum Reservoir State Park	Haddam
<b>KILLINGWORTH</b>	
Back Stage Dance Center	176 Connecticut 81, Killingworth
Curves for Women	176 Route 81, Killingworth
Green Hill Martial Arts	149 Green Hill Road, Killingworth
Jazzercise Class with Erica Korper	176 Route 81, Killingworth
Parmalee Farms	465 Connecticut 81, Killingworth
Shoreline Focus on Fitness	25 Beaver Dam Rd, Killingworth
The Dance Corner	206 Connecticut Route 80, Killingworth

The Fitness Connection	10 L'Hommedieu Road, Killingworth
<b>MIDDLEFIELD</b>	
Indian Springs Golf Course	132 Mack Road, Middlefield
Lyman Orchards Player and Jones Golf Courses	70 Lyman Road, Middlefield
Town of Middlefield Parks and Recreation	405 Main Street, Middlefield
Town of Middlefield Senior Center	405 Main Street, Middlefield
<b>MIDDLETOWN</b>	
Bikram Yoga Middletown	100 Riverview Center, Middletown
Boys and Girls Clubs of Hartford	1225 Silver Street, Middletown
City of Middletown Recreation Department	100 Riverview Center, Middletown
City of Middletown Senior Center	150 William Street, Middletown
Epilepsy Foundation of CT Camp Courage	386 Main St, Middletown
Innovative Fitness and Wellness	20 Tuttle Place, Middletown
Kenpo Karate	695 South Main Street, Middletown
KO Club	160 Johnson Street, Middletown
Middlesex Community College Multipurpose Center	100 Training Hill Road, Middletown
Middletown Kenpo Karate School	340 East Main Street, Middletown
Miner Hills Golf Course	80 Miner Hills Drive, Middletown
North End Action Team	654 Main Street, Middletown
Ryan Woods Autism Foundation	100 Riverview Center, Middletown
Salvation Army Middletown Community Center	515 Main Street, Middletown
Tat Wong Kung Fu Academy	42 Washington Street, Middletown
Vinnie's Jump and Jive	424 Main Street, Middletown
YMCA	99 Union Street, Middletown
Yoga in Middletown	438 Main Street, Middletown
<b>OLD SAYBROOK</b>	
Any Time Fitness	50 Main Street, Old Saybrook
Fenwick Golf Course	580 Maple Avenue, Old Saybrook
Gabriele's Martial Arts	210 Main Street, Old Saybrook
Jazzercise	186 Main Street, Old Saybrook
Saybrook Point Inn Fitness	2 Bridge Street, Old Saybrook
Shoreline Health and Fitness	210 Main Street, Old Saybrook
Town of Old Saybrook Parks and Recreation	308 Main Street, Old Saybrook
<b>PORTLAND</b>	
Brownstone Exploration and Discovery Park	161 Brownstone Avenue, Portland
Buck Foreman Community Center	265 Main Street, Portland
Meshomasic State Forest	State Forest Road, Portland
Portland Senior Center	7 Waverly Avenue, Portland
Quarry Ridge Golf Course	9 Rose Hill Road, Portland
Snap Fitness	336 Portland-Cobalt Road, Portland
Town of Portland Parks and Recreation	33 E Main Street, Portland

YMCA Camp Ingersol	Camp Ingersol Road, Portland
<b>WESTBROOK</b>	
Jodi Works Body Makeover	1856 Boston Post Road, Westbrook
Northeast Fitness Factory	172 Boston Post Road, Westbrook
Town of Westbrook Park and Recreation	866 Boston Post Road, Westbrook
Town of Westbrook Senior Center	866 Boston Post Road, Westbrook
Valley Shore YMCA	201 Spencer Plains Road, Westbrook
Viva Fitness	631 Boston Post Road, Westbrook

**APPENDIX 6c**  
**MIDDLESEX COUNTY ASSETS THAT SUPPORT TOBACCO FREE LIVING**  
**(September 2012)**

<b>CLINTON</b>	
Community Health Center of Clinton	114 East Main Street, Clinton
<b>CROMWELL</b>	
Healthy Life Center Certified Hypnotist	26 Shunpike Road, Cromwell
<b>EAST HAMPTON</b>	
Michael Smithwick Smoking Cessation Hypnotherapy	209 Lake Drive, East Hampton
<b>ESSEX</b>	
Middlesex Health System Shoreline Medical Center Smoking Cessation	260 Westbrook Road, Essex
<b>MIDDLETOWN</b>	
Better Breathers Club Smoking Cessation	28 Crescent Street, Middletown
Life Changes Smoking Cessation Program	635 Main Street, Middletown
Michele Rousseau Smoking Cessation Hypnotist	267 William Street, Middletown
Middlesex Hospital Center for Chronic Care Management Smoking Cessation	770 Saybrook Road, Middletown

**APPENDIX 6d MIDDLESEX COUNTY ASSETS THAT SUPPORT  
SOCIAL AND EMOTIONAL WELLNESS (September 2012)**

<b>CHESTER</b>	
Alcoholics Anonymous at United Church of Chester	29 West Main Street, Chester
Chester Public Library	21 West Main Street, Chester
Town of Chester Municipal Agent for the Elderly	203 Middlesex Turnpike, Chester
<b>CLINTON</b>	
Alcoholics Anonymous at Academy Building	61 East Main Street, Clinton
Alcoholics Anonymous at Episcopal Church Parish	83 East Main Street, Clinton
Alcoholics Anonymous at St. Mary's Old Church Hall	54 Grove Street, Clinton
Alcoholics Anonymous at United Methodist Church	12 Commerce Street, Clinton
Henry Carter Hull Library	10 Killingworth Turnpike, Clinton
Town of Clinton Elderly and Social Services	61 East Main Street, Clinton
Town of Clinton Youth and Family Services	112 Glenwood Road, Clinton
<b>CROMWELL</b>	
Alcoholics Anonymous at Bethany Lutheran Church	50 Court Street, Cromwell
Alcoholics Anonymous at First Congregational Church	335 Main Street, Cromwell
Alcoholics Anonymous at Hilltop Covenant Church	82 Hicksville Road, Cromwell
Cromwell Belden Public Library	39 West Street, Cromwell
The Children's Home Community Services	58 Missionary Road, Cromwell
The Family Treatment Center	58 Missionary Road, Cromwell
Middlesex Behavioral Health Services	28 Shunpike Road, Cromwell
Narcotics Anonymous at Bethany Lutheran Church	50 Court Street, Cromwell
Town of Cromwell Youth Services	41 West Street, Cromwell
Weight Watchers	51 Shunpike Road, Cromwell
<b>DEEP RIVER</b>	
Alcoholics Anonymous at Deep River Congregational Church	1 Church Street, Deep River
Deep River Public Library	150 Main Street, Deep River
<b>DURHAM</b>	
Alcoholics Anonymous at Church of the Epiphany	196 Main Street, Durham
Durham Naturopathic Health and Wellness Center	16 Main Street, Durham
Durham Public Library	7 Maple Avenue, Durham
Narcotic Anonymous at Church of the Epiphany	196 Main Street, Durham
<b>EAST HADDAM/MOODUS</b>	
Alcoholics Anonymous at First Church of Christ Congregational	499 Town Street, East Haddam
Alcoholics Anonymous at Moodus United Methodist Church	20 Plains Road, East Haddam
Alcoholics Anonymous at St. James Church	501 Killingworth Road, East Haddam
Alcoholics Anonymous at St. Stephen's Church	31 Main Street, East Haddam

East Haddam Free Public Library	18 Plains Road, Moodus
Rathbun Free Memorial Library	36 Main Street, East Haddam
<b>EAST HAMPTON/MIDDLE HADDAM</b>	
Alcoholics Anonymous at Bethlehem Lutheran Church	1 West High Street, East Hampton
Alcoholics Anonymous at Congregational Church of East Hampton	55 Main Street, East Hampton
Alcoholics Anonymous at East Hampton Community Center	105 Main Street, East Hampton
Alcoholics Anonymous at St. Patrick Church	47 West High Street, East Hampton
Avia Counseling Center	42 East High Street, East Hampton
East Hampton Public Library	105 Main Street, East Hampton
Middle Haddam Public Library	2 Knowles Road, Middle Haddam
Narcotics Anonymous at Bethlehem Lutheran Church	1 West High Street, East Hampton
Town of East Hampton Youth and Social Services	240 Middletown Avenue, East Hampton
<b>ESSEX</b>	
Alcoholics Anonymous at First Congregational Church	6 Methodist Hill, Essex
Alcoholics Anonymous at St John's Episcopal Church	3 Cross Street, Essex
The Center for Psychotherapy	28 Main Street, Essex
Child and Family Agency of Southeastern Connecticut	190 Westbrook Road, Essex
Essex Library Association	33 West Avenue, Essex
Narcotics Anonymous at St John Baptist Church	52 Main Street, Essex
Town of Essex Municipal Agent for the Elderly	29 West Avenue, Essex
<b>HADDAM/HIGGANUM</b>	
Alcoholics Anonymous at Higganum United Methodist Church	248 Saybrook Road, Haddam
Brainerd Memorial Library	920 Saybrook Road, Haddam
Healthy Communities, Healthy Kids	91 Little City Road, Higganum
Narcotics Anonymous at Haddam Neck Congregational Church	408 Quarry Hill Road, Haddam
<b>KILLINGWORTH</b>	
Alcoholics Anonymous at Congregational Church	273 Connecticut Route 81, Killingworth
Hilltop Therapeutic Riding Program	552 North Roast Meat Hill Road, Killingworth
Killingworth Counseling Center	232 Connecticut Route 80, Killingworth
Killingworth Library	301 Route 81, Killingworth

Narcotics Anonymous at Congregational Church	273 Connecticut Route 81, Killingworth
Cynthia L. Sarris Counseling	46 Granite Hill Road, Killingworth
Town of Killingworth Municipal Agent for the Elderly	323 Connecticut Route 81, Killingworth
Youth and Family Services of Haddam-Killingworth	91 Little City Road, Killingworth
<b>MIDDLEFIELD</b>	
Levi E. Coe Library	414 Main Street, Middlefield
Town of Middlefield Senior Center and Youth Services	405 Main Street, Middlefield
<b>MIDDLETOWN</b>	
Advanced Behavioral Health	213 Court Street, Middletown
Aegis Behavioral Care	79 Mill Street, Middletown
Affiliated Clinical Therapists	770 Saybrook Road, Middletown
Albert Solnit Psychiatric Center	915 River Road, Middletown
Alcoholics Anonymous at Christ Lutheran Church	300 Washington Street, Middletown
Alcoholics Anonymous at Church of the Holy Trinity	381 Main Street, Middletown
Alcoholics Anonymous at First Baptist Church	93 Main Street, Middletown
Alcoholics Anonymous at First United Methodist Church	24 Old Church Street, Middletown
Alcoholics Anonymous at Grace Lutheran	1055 Randolph Road, Middletown
Alcoholics Anonymous at South Congregational Church	9 Pleasant Street, Middletown
Alcoholics Anonymous at St Paul Lutheran Church	57 Oak Street, Middletown
City of Middletown Municipal Agent for the Elderly	150 William Street, Middletown
City of Middletown Youth Service Bureau Outreach	372 Hunting Hill Avenue, Middletown
Community Health Center Child Guidance Clinic	675 Main Street, Middletown
Community Health Family Wellness Center	635 Main Street, Middletown
Connecticut Valley Hospital and Family Resource Center	1000 Silver Street, Middletown
The Connection Counseling Center	196 Court Street, Middletown
Dr. Karabelnik Adolescent & Pediatric Psychiatry	770 Saybrook Road, Middletown
Focus on Recovery-United	100 Riverview Center, Middletown
Gilead Community Clinical Services	681 Saybrook Road, Middletown
Godfrey Memorial Library	134 Newfield Street, Middletown
Middlesex Hospital	28 Crescent Street, Middletown
Middlesex Hospital Family Advocacy Child and Adolescent Psychiatry	51 Broad Street, Middletown

Middlesex Hospital Family Advocacy Maternal Child Health	8 Crescent Street, Middletown
Middlesex Hospital Homecare and Hospice	770 Saybrook Road, Middletown
Middlesex Hospital Outpatient Behavioral Health Clinic	103 South Main Street, Middletown
Middlesex Hospital Outpatient Behavioral Health Clinic	21 Pleasant Street, Middletown
Middlesex Hospital Partial Hospital Program/Intensive Outpatient Program	33 Pleasant Street, Middletown
Middlesex MISA Project	1250 Silver Street, Middletown
Narcotics Anonymous at Church of the Holy Trinity	381 Main Street, Middletown
Narcotics Anonymous at First Baptist Church	93 Main Street, Middletown
Narcotics Anonymous at First Church of Christ	190 Court Street, Middletown
Narcotics Anonymous at Grace and Mercy Baptist Church	120 Washington Street, Middletown
Narcotics Anonymous at Middlesex Hospital Department of Psychiatry	28 Crescent Street, Middletown
Narcotics Anonymous At Middletown Youth Services	101 Court Street, Middletown
Narcotics Anonymous at Saint Paul Lutheran Church	47 Oak Street, Middletown
Narcotics Anonymous at Saint Vincent DePaul Soup Kitchen	617 Main Street, Middletown
New Horizons Support Group	23 Broad Street, Middletown
Overeaters Anonymous at First Church of Christ	190 Court Street, Middletown
River Brook Psychiatry	11 South Main Street, Middletown
Rushford Center	1250 Silver Street, Middletown
Russell Library	123 Broad Street, Middletown
Saint Luke's Eldercare Services	760 Saybrook Road, Middletown
Salvation Army Middletown Corps Community Center	515 Main Street, Middletown
Service Member and Family Support Center	375 Smith Street, Middletown
Wheeler Clinic/The Academy	20 Tuttle Place, Middletown
<b>OLD SAYBROOK</b>	
Acton Public Library	60 Old Boston Post Road, Old Saybrook
Joshua Center Shoreline	5 Research Parkway, Old Saybrook
Middlesex Hospital Behavioral Health	154 Main Street, Old Saybrook
Project Courage	259 Main Street, Old Saybrook
Town of Old Saybrook Youth and Family Services	302 Main Street, Old Saybrook
<b>PORTLAND</b>	
Alcoholics Anonymous at St. Mary's Church	45 Freestone Avenue, Portland
Alcoholics Anonymous at Trinity Episcopal Church	345 Main Street, Portland

Narcotics Anonymous at Portland United Methodist Church	381 Main Street, Portland
Narcotics Anonymous at Trinity Episcopal Church	345 Main Street, Portland
Narcotics Anonymous at Zion Lutheran Church	183 William Street, Portland
Portland Public Library	20 Freestone Avenue, Portland
Town of Portland Youth Services	265 Main Street, Portland
<b>WESTBROOK</b>	
Alcoholics Anonymous at First Congregational Church	1166 Boston Post Road, Westbrook
Alcoholics Anonymous at St. Paul's Episcopal Church	53 South Main Street, Westbrook
Town of Westbrook Senior Center	866 Boston Post Road, Westbrook
Town of Westbrook Youth and Family Services	1163 Boston Post Road, Westbrook
Westbrook Public Library	61 Goodspeed Drive, Westbrook

**APPENDIX 6e MIDDLESEX COUNTY ASSETS THAT SUPPORT  
QUALITY CLINICAL PREVENTIVE SERVICES (September 2012)**

<b>CHESTER</b>	
Middlesex Hospital Primary Care	150 Main Street, Chester
<b>CLINTON</b>	
Community Health Center	114 East Main Street, Clinton
<b>CROMWELL</b>	
Cromwell Family Practice	80 Shunpike Road, Cromwell
Feet First Footcare Specialist	154 West Street, Cromwell
Grove Hill Medical Center	136 Berlin Road, Cromwell
Holistic Health Center	75 Berlin Road, Cromwell
Maxim Healthcare	100 Sebethe Drive, Cromwell
Town of Cromwell Health and Senior Services Departments	41 West Street, Cromwell
<b>DURHAM</b>	
Durham Naturopathic Health and Wellness Center	16 Main Street, Durham
Middlesex Hospital Primary Care	6 Main Street, Durham
<b>EAST HAMPTON</b>	
Family Medicine Group of Middlesex Hospital	42 East High Street, East Hampton
<b>ESSEX/CENTERBROOK</b>	
Cardiovascular Health & Internal Medicine	10 Wildwood Medical Center, Essex
Essex Medical Group	176 Westbrook Road, Essex
Family Practice Associates	57 Main Street, Essex
Middlesex Hospital Primary Care	147 Westbrook Road, Essex
Tri-Town Family Practice	9 Wildwood Medical Center, Essex
Visiting Nurses of the Lower Valley	61 Main Street, Centerbrook
<b>HADDAM/HIGGANUM</b>	
Higganum Family Medical Group	415 Killingworth Road, Higganum
<b>MIDDLEFIELD</b>	
Affiliated Footcare Center	470 Main Street, Middlefield
<b>MIDDLETOWN</b>	
Burgess Health Associates	460 Smith Street, Middletown
City of Middletown Senior Center	150 William Street, Middletown
Community Health Center	675 Main Street, Middletown
Community Health Center	370 Hunting Hill Avenue, Middletown
Community Health Center	66 Spring Street, Middletown
Community Health Center	12 Pease Avenue, Middletown

Dr. Knudson, Diabetes Specialist	540 Saybrook Road, Middletown
Middlesex Cardiology Associates	420 Saybrook Road, Middletown
Middlesex Hospital Homecare and Hospice	770 Saybrook Road, Middletown
Middlesex Hospital	28 Crescent Street, Middletown
Middlesex Multi-Specialty Group	80 South Main Street, Middletown
Pediatric and Adolescent Medical	540 Saybrook Road, Middletown
Preferred Care Walk in Medical Center	842 Washington Street, Middletown
Prohealth Physicians	400 Saybrook Road, Middletown
Unison Health Services	921 Saybrook Road, Middletown
<b>PORTLAND</b>	
Family Medicine Group of Middlesex Hospital	595 Main Street, Portland
Middlesex Hospital Primary Care	270 Main Street, Portland
Portland Senior Vitality Center	7 Waverly Avenue, Portland

## APPENDIX 7 DESCRIPTION OF FOCUS AREA ASSETS

### HEALTHY EATING

**Congregate Meals:** Designed to assist seniors to obtain a nutritious meal, congregate meals are served at a remote location such as a senior center or church, and offer the chance to socialize. Congregate meals are generally available to any senior who meets the criteria (often just a minimum age), as long as there are available resources, which vary among communities and organizations throughout Middlesex County.

**Farmers' Markets:** One can find farmers' markets seven-days a week and just a short distance away from virtually any town in Middlesex County. They offer fresh, local products bursting with flavor, friendly farmers who are the face behind the food, and a community gathering place for everyone to enjoy. Virtually all farmers' markets are also affiliated with the Women, infant, and Children (WIC) and/or the Senior Farmers' Market Nutrition Program (SFMNP), providing eligible clients with access to fresh fruits and vegetables.

**Food Pantries/Soup Kitchens:** Numerous food pantries and soup kitchens can be found throughout Middlesex County. Food Pantries are places where individuals go to "shop" for items given at no cost to stock one's own pantry. Soup Kitchens are places where individuals can go to get a hot meal, no questions asked. Churches, shelters, or other community meeting places are common sites.

**"Healthy" Restaurants:** Eating out has become an integral part daily life and although it can be tricky to find healthy meals, it is possible. "Healthy" restaurants throughout Middlesex County offer nutritious soups, healthy salads, fresh whole grains and sensible desserts in addition to the use of healthy fats and preparations, healthy sodium counts, availability of nutritional information, and the use of organic products.

**Meals on Wheels:** Delivery meal programs are designed to help those who have some kind of physical need to periodically get nutritious meals in their homes that are ready or near ready to eat. They are not designed to take the place of every meal and are offered for the convenience of the client or their families. Availability depends upon the financial and volunteer resources of the local agency.

**Organic Food Stores:** While the number of organic food stores in Middlesex County is low, popularity is growing and store listings are updated periodically. Organic food is food that uses or is produced with fertilizers of animal or vegetable matter, using no synthetic fertilizers or pesticides. It is free from chemical injections or additives, such as antibiotics or hormones. Stores often carry both fresh organic food including fresh fruits, vegetables,

dairy, and meats or processed organic food which contain no artificial food additives, chemicals, or other harmful conditions.

**School Cafeterias:** Healthy eating is promoted in our school cafeterias through implementation of the Connecticut Nutrition Standards which focus on limiting fat, sodium and sugars; moderating portion sized; and promoting increased intake of nutrient-dense foods such as whole grains, fruits, vegetables, low-fat/nonfat dairy products, lean meats, legumes, nuts and seeds. Additionally, the National School Lunch Program is a federally assisted meal program operating in public and nonprofit private schools providing nutritionally balanced, low-cost or free lunches to children each school day.

## ACTIVE LIVING

**Boys and Girl Clubs:** The Boys club located at the Connecticut Juvenile Training Center in Middletown keeps the focus on the five core areas for development: Character & Leadership Development, Education & Career Development, Health & Life Skills, Arts & Cultural Enrichment and Sports, Fitness & Recreation.

**Community Gardens:** Middlesex County is seeing an increase in this trend with several community gardening opportunities offered throughout the county. Residents are participating for the opportunity to grow their own fruits and vegetables, help reduce grocery bills, and just to enjoy some quiet time outside in a peaceful environment. Gardening is also a terrific form of exercise.

**Fitness classes:** The breadth of fitness classes available throughout Middlesex County is incredible! Classes include Jazzercise, Zumba, aerobics, Pilates, yoga, spinning, ballet, tap, and hip-hop. Many of these classes are offered either through local parks and recreation departments, local gyms or with private instructors.

**Golf Courses:** There are a total of 10 golf courses located throughout Middlesex County. Courses are located in East Haddam (2), Middlefield (2), Cromwell, Portland (2), Middletown, Old Saybrook and Clinton. Most courses offer your choice in 9 or 18 hole games as well as a driving range and/or putting greens. Pro are usually available for golf lessons at most of the courses.

**Gyms/Fitness Centers:** There is no shortage of gyms or fitness centers throughout Middlesex County. The gyms usually offer traditional options for weight training to encourage strength and tone in our bodies, with many offering additional options for cardio workouts either through treadmills or a variety of fitness classes such as Zumba, aerobics,

Pilates and Yoga. Most gyms also provide opportunities to engage with a personal trainer to help individualize your fitness plan.

**Local Parks:** Middlesex County is lucky to have local parks in nearly every municipality throughout the county. Some towns have multiple sites. Most offer a place to sit and relax, picnic, take a walk alone or as a family activity. Still others have places for supervised swimming and playgrounds available for the little ones. Many local parks are the site for organized sports teams to practice and play.

**Martial Arts:** Classes in the martial arts are offered at 16 locations throughout Middlesex County and include the arts of Judo, Tai Kwon Do, Jiu Jitsu, Kung Fu, Tai Chi, and Jeet Kune, Ryu, and Kenpo style Karate. These classes are usually offered through a martial arts studio or as a 6-8 week program through local parks and recreation departments throughout the county.

**Municipal Parks and Recreation Departments:** Each town throughout Middlesex County has a local park and recreation department available to assist with finding local opportunities to participate in recreational activities either in an indoor setting or outside as weather permits. These opportunities include activities for all ages and range from fitness classes, to summer camps, to organized nature walks and crafting classes. Most classes/activities are offered at a nominal cost and often offer family discounts.

**Private Youth Teams:** There are a multitude of opportunities for youth to participate in sports within Middlesex County. Team sports available include Hockey, Football, Baseball, Softball, Lacrosse, Soccer, Tennis, Volleyball, Gymnastics, Golf, Swimming, T-Ball, Track and Field and swimming.

**Seasonal Camps:** Middlesex County is home to many seasonal camps which include those offered by municipal Parks and Recreation departments throughout the county as well as 2 YMCA camps – Camp Ingersoll in Portland and Camp Hazen in Chester. Incarnation camps are offered as Pequot (Boys) Sherwood (Girls) and Pioneer Village (Teens) and are located in the Ivoryton section of Essex.

**Senior Centers:** Senior Centers are a vital part of each of the towns throughout Middlesex County, offering a wide variety of services from provision of congregate meals, exercise classes such as yoga and tai chi, as well as a variety of recreational activities that include day trips, crafting classes and informational sessions related to topics of interest to the senior population.

**State Parks:** There are a total of 20 State Parks and State Forests within Middlesex County that offer a variety of activities from hiking and fishing to taking a trip back in history as you

explore several historically based parks throughout the county. Many of the State Parks offer camping as an option in addition to other recreational activities such as bird-watching and nature photography.

**YMCA:** Middlesex County has 2 YMCA locations within its borders. One is located in Middletown and the second is located in Westbrook. The Mission of the YMCA is to support healthy living by improving the nation's health and well-being, support social responsibility by giving back and providing support for their neighbors and supporting youth development by nurturing the potential of every child and teen in their care. The YMCA offers programs for every age range and has a very robust aquatics program in addition to other fitness classes.

## **HEALTHY AND SAFE PHYSICAL ENVIRONMENT**

**Bike Lanes:** Designated visible painted lanes on the shoulder of the road for safer bike riding

**Born Learning Trails:** Interactive, playful and visible community engagement tools designed to offer outdoor learning games that build pre-literacy skills (critical to school readiness) and encourage families to get active. They capture 10 fun outdoor games and engaging signs to help parents and caregivers create learning opportunities for young children.

**Drug Free Communities:** A federal program that provides funding for national programs and state grants. The goal of the federal program is to reduce drug, alcohol, and tobacco use, and violence, through education and prevention initiatives in our nation's schools and communities. Local Drug Free Communities are built from a network of individuals and organizations who are committed to the reduction of underage use of alcohol and drugs.

**Heart Smart Community:** AED (automated external defibrillated) machines are available for the public to access in the event of a cardiac emergency, and training has occurred for staff in building.

**Local Prevention Council:** Municipal-based alcohol, tobacco and other drug (ATOD) abuse prevention councils. The intent of this CT Department of Mental Health and Addiction Service grant-funded program is to facilitate the development of ATOD abuse prevention initiatives at the local level with the support of the Chief Elected Officials. The specific goals of Local Prevention Councils (LPCs) are to increase public awareness of ATOD prevention and stimulate the development and implementation of local prevention activities primarily focused on youth.

**Multi-Purpose Trails:** Exercise trail, which may be paved or finished with road type material for pedestrians, runners, bicyclists, or other non-motorized users. May include fitness stations along a directed physical activity circuit. Middlesex County United Way's Healthy Purpose Trails are a family centered physical activity initiative that includes fitness stations for families to do together.

**Neighborhood Watch:** Crime prevention program that teaches citizens how to help themselves by identifying and reporting suspicious activity in their neighborhoods to the local police. Neighborhood Watch groups typically focus on observation and awareness as a means of preventing crime and employ strategies that range from simply promoting social interaction and "watching out for each other" to active patrols by groups of citizens.

**Safe Kids:** Safe Kids USA is a nationwide network of organizations working to prevent unintentional childhood injury, the leading cause of death and disability for children ages 1 to 14. There are more than 360 state and local Safe Kids coalitions. Safe Kids Connecticut is a program of the Injury Prevention Center at Connecticut Children's Medical Center. Safe Kids Connecticut and its partners have distributed child safety materials and educational materials to raise awareness regarding this number one threat to children: unintentional injury. Safe Kids Chatham, as a local chapter of Safe Kids CT, serves the towns in the Chatham Health District with the exception of Colchester, which is served by Safe Kids New London County.

**School Resource Officer:** SRO is a police officer based in one of the middle school or high schools as a resource for education and intervention in areas of concern related to students.

**Sidewalks:** Sidewalks provide opportunities for safe pedestrian walking. Sidewalks improve access to business and industry for employees relying on public transportation and enhanced sense of community through better connections to neighbors and businesses. Regular physical activity, such as that achieved through use of sidewalks, can reduce the incidence of obesity, diabetes, hypertension, heart disease and certain cancers.

## **TOBACCO FREE LIVING**

**Better Breathers Clubs:** Support groups throughout Middlesex County that offer the opportunity to learn ways to better cope with COPD while getting the support of others who share similar struggles. Better Breathers Clubs meet regularly and feature educational presentations on a wide range of relevant topics including exercise, breathing techniques and home health care.

**CHC-Based Smoking Cessation Programs:** The Health Center offers smoking cessation programs periodically through various grant-funded programs. In addition to the services offered through the Community Health Center, the Connecticut Quitline offers telephone tobacco use cessation assistance available 7 days a week.

**Health Departments:** In an effort to enhance the well-being of residents by promoting tobacco-free lifestyles and by educating communities about the economic and health costs and consequences of tobacco use, health departments across Middlesex County provide information and web links for tobacco cessation programs and the benefits of tobacco-free living.

**Hospital-Based Smoking Cessation Programs:** Middlesex Hospital is working to reduce smoking-related illness through individualized, one-on-one supportive counseling and a wide range of treatment options for smoking cessation in cooperation with primary care physicians. The Hospital's Center for Chronic Care Management offers a free Smoking Intervention Program with services that include individual and group counseling, relapse prevention, education, and in-school cessation programs.

**Hypnotherapy Programs:** Hypnosis for smoking cessation involves learning and implementing techniques to help overcome urges using a relaxed state of consciousness. Hypnosis for smoking cessation can be performed by someone who is licensed in a health care field such as medicine, psychiatry, psychology, or nursing. Practitioners can also receive certification and can be registered through the state.

## **CLINICAL AND OTHER PREVENTIVE SERVICES**

**CHC:** Community Health Center: Three facilities in Middlesex County, located in Middletown, Clinton and Old Saybrook. Provides comprehensive primary care services in medicine, dentistry, and behavioral health. CHC is available to all, but has a special commitment to the uninsured, underinsured, and special populations such as patients with HIV/AIDS. CHC is a statewide, independent, private non-profit organization.

**Local Health Departments:** Local health departments and districts (LHDs) are critical providers of population-based essential public health services at the local level. LHDs are governmental entities separate from the state health department. Local health departments provide environmental inspection and enforcement, as well as health education and nursing services to their residents.

**Middlesex Hospital:** Middlesex Hospital, located in Middletown, offers a comprehensive spectrum of locally-based hospital services in a wide range of specialties ranging from

medical care to homecare, assisted living to rehabilitation programs. The Hospital's extensive family practice and primary medical care network in Connecticut includes multiple office and locations throughout Middlesex County.

**Nutritionist/dieticians:** Nutrition science focuses on the metabolic and physiological responses of the body to the foods ingested, so a nutritionist's primary concern is how diet affects health and well-being. Dieticians advise people on what to eat in order to lead a healthy lifestyle or achieve a specific health-related goal. As an outpatient service of hospital or through private practice, both nutritionists and dieticians are able to assist in healthy eating and active living to prevent and manage chronic illness.

**Personal Trainers:** Within public and private gyms, as well as private practice, personal trainers are available to assist in healthy life style changes and support to maintain holistic health. They motivate clients by setting goals and providing feedback and accountability to clients. Trainers also measure their client's strengths and weaknesses with fitness assessments.

**Private Practice:** Health care providers that treat medical concerns to maintain health and prevent chronic disease.

**Bariatrics:** branch of medicine that deals with the causes, prevention, and treatment of obesity.

**Cardiology:** medical specialty dealing with disorders of the heart (specifically the human heart).

**Diabetes education:** health care practice dedicated to integrating self-management as a key outcome in the care of people with diabetes and related chronic conditions.

**Endocrinology:** branch of medicine dealing with the endocrine system, its diseases, and its specific secretions called hormones.

**Family practice:** the medical specialty devoted to comprehensive health care for people of all ages.

**Pediatrics:** branch of medicine that deals with the medical care of infants, children, and adolescents.

**Pulmonology:** medical specialty dealing with disease involving the respiratory tract.

**Senior Centers:** Agencies that provide multiple services to residents over 55, typically including clinics for health and wellness, screening for blood pressure, diabetes, etc.

**Walk in Clinic:** Small, local medical facilities that treat uncomplicated minor illnesses and provide preventative health care services. Clinics are usually staffed by nurse practitioners (NPs) or physician assistants (PAs), although some clinics are staffed by physicians.

## **SOCIAL AND EMOTIONAL WELLNESS**

**Connecticut Valley Hospital (CVH):** CVH is a DMHAS operated Psychiatric facility that has three divisions, the Whiting Forensic Unit (dealing with those involved with the criminal justice system), the General Psychiatry Division and the Addiction Services Division. Services includes inpatient hospitalization, outpatient clinical services, 24-hour emergency care, day treatment, psychosocial and vocational rehabilitation, restoration to competency and forensic services (including jail diversion programs), outreach services for persons with serious mental illness who are homeless, and comprehensive, community-based mental health treatment and support services. In Middlesex County, DMHAS works collaboratively with the Region 2 Local Mental Health Authority which is River Valley Services in Old Saybrook.

**Drug Free Communities:** A federal program that provides funding for national programs and state grants. The goal of the federal program is to reduce drug, alcohol, and tobacco use, and violence, through education and prevention initiatives in our nation's schools and communities. Local Drug Free Communities are built from a network of individuals and organizations who are committed to the reduction of underage use of alcohol and drugs.

**Hospital / clinic-based Counseling services:** Middlesex Hospital offers multiple supportive counseling services in a number of areas including grief and loss, addictions, anxiety, disease support – cancer, Alzheimer's, asthma, smoking cessation, cardiac disease, breastfeeding, and caregiver support. There are also outpatient services offered through locations such as Rushford.

**Local Prevention Council:** Municipal-based alcohol, tobacco and other drug (ATOD) abuse prevention councils. The intent of this CT Department of Mental Health and Addiction Service grant-funded program is to facilitate the development of ATOD abuse prevention initiatives at the local level with the support of the Chief Elected Officials. The specific goals of Local Prevention Councils (LPCs) are to increase public awareness of ATOD prevention and stimulate the development and implementation of local prevention activities primarily focused on youth.

**Pastoral Counseling:** These services are offered through the Salvation Army Middletown Corps on Main Street in Middletown. Christian-based pastoral counseling offered at Corps

Community Center on a short term basis. Referrals are provided for those who want on-going mental health counseling.

**Private Practices:** There are multiple private practitioners throughout Middlesex County available to assist those with counseling needs in the areas of anger management, depression, anxiety, stress management, coping with divorce, marriage difficulties, ADHD, Psychiatric disorders, family dysfunction, grief and loss, and addictions issues. These services are offered by Psychiatrists, Psychologists, Licensed Clinical Social Workers, and hypnotherapists.

**Hypnotherapist:** Induces hypnotic state in client to increase motivation or alter behavior patterns

**Psychiatrist:** a physician who specializes in the diagnosis and treatment of mental disorders.

**Psychologist:** A trained professional that studies mental processes and human behavior by observing, interpreting, and recording how people and other animals relate to one another and the environment. Psychologists may work in a clinical setting, in counseling, in a school setting, in research or academics.

**Licensed clinical social workers:** A social worker trained in psychotherapy who helps individuals deal with a variety of mental health and daily living problems to improve overall functioning.

**Senior Centers:** Senior Centers are located in almost every Middlesex County town and offer a wide variety of services to assist with the social and emotional well-being of our senior population. They offer a comfortable setting in which they can interact with others who share similar interests, take a fitness class, obtain assistance with applying for state assistance program, gather for lunch, attend educational programs about topic pertinent to seniors and so much more.

**Support Groups:** There are a wide variety of support groups available within Middlesex County that assist with issues relating to addictions, separation and loss, anxiety, phobias, cancer survival, asthma support, Veteran's issues, parenting, Alzheimer's, many of which are offered as a service from either Middlesex Hospital, Yale-New Haven Hospital or national organizations.

**Treatment Center:** Facility that provides support to individuals and their family members affected by alcoholism and/or addiction to other drugs.

**Youth and Family Services:** Known as Youth Services or Youth and Family Services, these municipally run departments provide outreach and counseling services to the youth (and families) of most towns throughout Middlesex County. Some of the towns within the county share services across 2 or 3 towns. Many are focused on substance abuse education and prevention programs.

**Appendix 8**  
**Middlesex County Coalition on Community Wellness**  
**Key Informant Survey/Interview**

Name:

Title:

Organization:

Date:

Would you like to be acknowledged as participating in the community health needs assessment? ☐ Yes ☐ No

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The Middlesex County Coalition on Community Wellness is collecting local data as part of a community health needs assessment. A critical piece of this data collection process is obtaining input from community stakeholders- this key informant survey/interview is one such method.

The Coalition has selected you as a key informant due to your knowledge, insight, and familiarity with the community. The goal of the Coalition is to improve the health and quality of life of those who live in Middlesex County – hearing the perspectives of community leaders helps inform how health and quality of life can be improved for Middlesex County.

The themes that emerge from this survey/interview will be summarized and included in the final community health needs assessment report; the data will be compiled in aggregate and not identified by any particular individual. In that way, your answers will be strictly confidential.

*Thank you for your participation!*

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1. What are the biggest health and quality of life issues of concern in Middlesex County?
2. What needs to be done to address these issues?

3. What barriers, if any, exist to improving the health and quality of life for individuals in Middlesex County?
4. What needs to be done to address these barriers?
5. In your opinion, has health and quality of life in Middlesex County improved, stayed the same, or declined over the past few years?
6. Why do you think it has? (based on answer from previous question: improved, declined or stayed the same)
7. In your opinion, what else will improve the health and quality of life in Middlesex County?
8. Are there people or groups of people in Middlesex County whose health or quality of life may not be as good as others?
  - a. Who are these people or groups (whose health or quality of life is not as good as others)?
  - b. Why do you think their health/quality of life is not as good as others?
9. What is your vision for a healthy community?
10. Is there someone who you would recommend as a “key informant” for this assessment?

## APPENDIX 9a

### **Middlesex County Coalition on Community Wellness *Perceptions, Beliefs and Experiences about Community Health Needs in Middlesex County***

#### **FOCUS GROUPS QUESTIONS Community-at-Large & Community Industry/Organization Sectors**

1. Health Issues:
  - a. What are the biggest health issues of concern in Middlesex County?
  - b. What needs to be done to address these issues?
2. Barriers:
  - a. What barriers, if any, exist to improving the health and quality of life for individuals in Middlesex County?
  - b. What needs to be done to address these barriers?
3. Think about the health and social services in your community:
  - a. What, if anything, is being done to improve the health and wellness of your community?
  - b. What populations are not being adequately served and **why**?
4. Who do you think is responsible for the health of an individual?
5. What **do** we currently do in our community to encourage and support:
  - a. Healthy eating?
  - b. Active living?
  - c. Tobacco-free living?
6. What **else can** we do in our community to encourage and support:
  - a. Healthy eating?
  - b. Active living?
  - c. Tobacco-free living?
7. How can physicians and other health care providers in Middlesex County ensure that individuals receive effective, understandable, and respectful care that is compatible with their health and cultural beliefs, practices, and preferred language?

8. What is your vision for a healthy community?
9. Is there anything you would like to add? Are there any aspects of health behavior that you feel have been missed during our discussion today?

## **APPENDIX 9b**

### **Middlesex County Coalition on Community Wellness *Perceptions, Beliefs and Experiences about Community Health Needs in Middlesex County***

#### **FOCUS GROUP QUESTIONS Healthcare Sector**

1. What are the biggest health issues of concern in Middlesex County?
2. What are the biggest issues and/or barriers you experience on a daily basis?
3. What are barriers to compliance with prescribed treatment plans for patients with chronic conditions (such as obesity, hypertension, heart disease, and diabetes)?
4. Think about the health and social services in your community.
  - a. What populations are not being adequately served?
  - b. Why/what are the contributing factors?
5. Who do you think is responsible for the health of an individual?
6. What can we do in our community to encourage and support
  - a. Healthy eating?
  - b. Active living?
  - c. Tobacco-free living?
7. How can physicians and other health care providers in Middlesex County ensure that patients receive effective, understandable, and respectful care that is compatible with their health and cultural beliefs, practices, and preferred language?
8. What is your vision for a healthy community?
  - a. How is our community healthy?
  - b. How is our community unhealthy?
9. Is there anything you would like to add? Are there any aspects of health behavior that you feel have been missed during our discussion today?

## **APPENDIX 9c**

### **Middlesex County Coalition on Community Wellness *Perceptions, Beliefs and Experiences about Community Health Needs in Middlesex County***

#### **FOCUS GROUP QUESTIONS Worksite Sector**

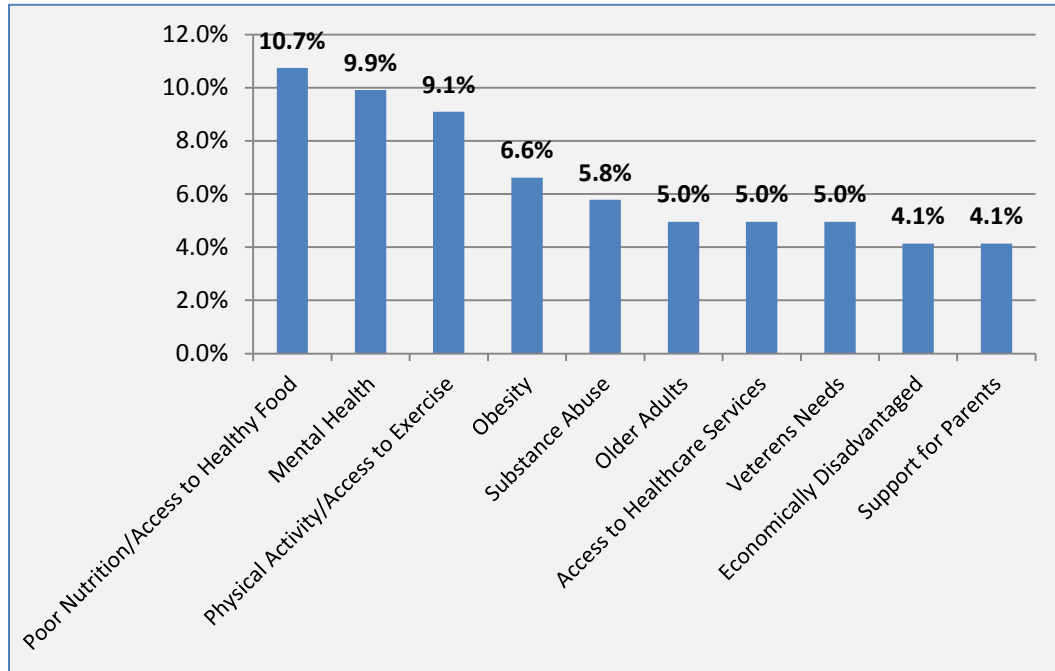
1. What are the biggest health issues of concern in Middlesex County?
2. Think about the health and social services in your community:
  - a. What, if anything, does your company do to improve the health and wellness of your community?
  - b. What populations are not being adequately served?
  - c. Why are they not being served/what are the contributing factors?
3. How does employee chronic illness affect productivity?
  - a. What POSITIVE personal health choices do employees make that most affect your business?
  - b. What NEGATIVE personal health choices do employees make that most affect your business?
4. Who do you think is responsible for the health of an individual?
5. What does your company currently do to encourage and support:
  - a. Healthy eating?
  - b. Active living?
  - c. Tobacco-free living?
6. How does your company accommodate employees' needs regarding attending health-related appointments during work hours? Do you get paid or unpaid time off?
7. What is your vision for a healthy community?
  - a. How is our community healthy?
  - b. How is our community unhealthy?
8. Is there anything you would like to add? Are there any aspects of health behavior that you feel have been missed during our discussion today?

## APPENDIX 9d

### Qualitative Analysis – Key Informant Surveys

#### Community at Large, Community Institution/Organization, School, Worksite Sectors Analysis (n=30)

**Q 1: What are the biggest health and quality of life issues of concern in Middlesex County?**

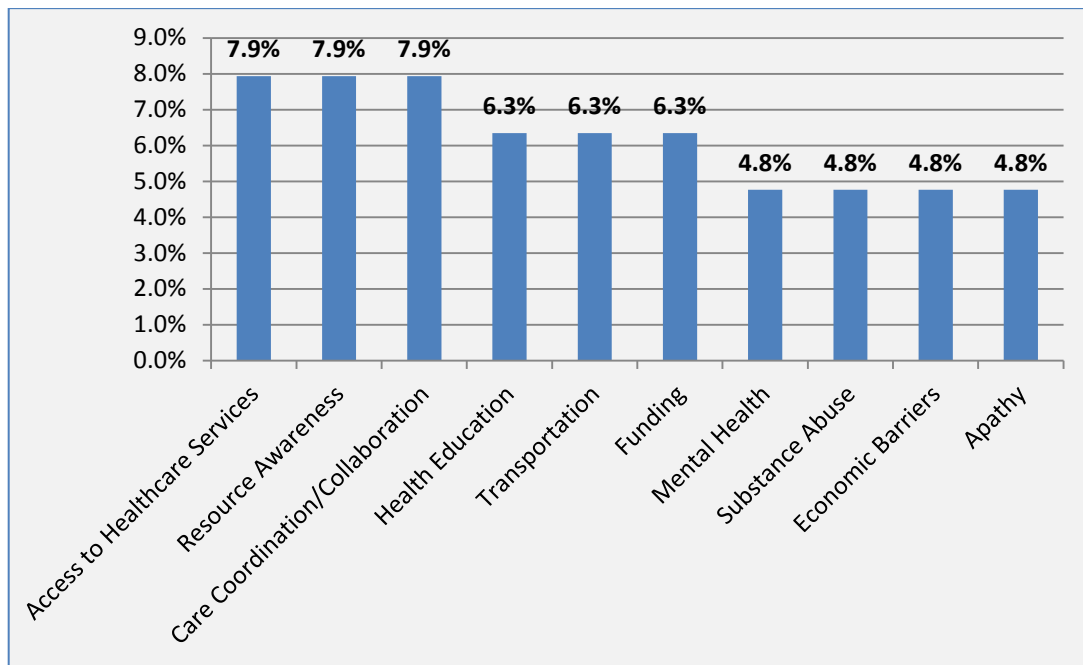


Issue	Detail
<b>Poor Nutrition/ Access to Healthy Food (10.7%)</b>	<ul style="list-style-type: none"> <li>• Access to healthy and affordable foods</li> <li>• Food insecurity</li> <li>• Poor nutrition</li> <li>• Poor eating habits</li> <li>• Lack of education on healthy nutrition</li> <li>• Need for healthy foods in school</li> <li>• Children relying on school breakfast as their key meal</li> </ul>
<b>Mental Health (9.9%)</b>	<ul style="list-style-type: none"> <li>• Access, availability of services for adults, children, adolescents, low income families</li> <li>• Suicide – young people and people in the business community</li> <li>• Students who present with mental health issues in the classroom</li> </ul>
<b>Physical Activity/ Access to Exercise (9.1%)</b>	<ul style="list-style-type: none"> <li>• Sedentary lifestyles</li> <li>• Need to get people to have active lifestyles</li> <li>• Lack of physical activity among children due to the rise in technology devices</li> <li>• Decrease in time outdoors for children due to environmental issues, traffic patterns</li> <li>• Lack of community exercise opportunities</li> <li>• Lack of access to safe indoor or outdoor facilities for exercise</li> <li>• Lack of awareness of walkable areas, use of natural resources for exercise</li> </ul>

**Q1: Continued**

Issue	Detail
<b>Obesity (6.6%)</b>	<ul style="list-style-type: none"> <li>• Adult and childhood obesity</li> <li>• Associated health risks, Type 2 Diabetes, heart disease</li> </ul>
<b>Substance Abuse (5.8%)</b>	<ul style="list-style-type: none"> <li>• Access, availability of services</li> <li>• Underage drinking</li> <li>• Family stress caused by alcohol and other drugs, including children's well being</li> </ul>
<b>Older Adults (5.0%)</b>	<ul style="list-style-type: none"> <li>• Inadequate programs</li> <li>• Lack of access to support services</li> <li>• Reaching the isolated elderly population</li> <li>• Older adults who have limited resources</li> <li>• Financial issues that interfere with ability to stay in home</li> <li>• Lack of family support systems</li> <li>• Lack of knowledge of available resources for older adults</li> <li>• Realistic communication with older adults; many don't have computers</li> </ul>
<b>Access to Healthcare Services (5.0%)</b>	<ul style="list-style-type: none"> <li>• Lack of health insurance</li> <li>• Affordable health care</li> <li>• Affordable medications</li> <li>• Access to primary care</li> <li>• Lack of access for Medicaid population</li> <li>• Access to dental care</li> </ul>
<b>Veterans Needs (5.0%)</b>	<ul style="list-style-type: none"> <li>• Access to care</li> <li>• Mental health issues</li> <li>• Lack of coordination for job placements</li> <li>• Coordination of care</li> <li>• Lack of knowledge of/education about available resources and benefits</li> <li>• Lack of supports for families</li> <li>• Lack of reliable transportation for vets for healthcare services</li> </ul>
<b>Economically Disadvantaged (4.1%)</b>	<ul style="list-style-type: none"> <li>• Parents working 2-3 jobs and still struggling</li> <li>• Threats to health of children in low income families</li> <li>• Lack of access to support systems</li> </ul>
<b>Support for Parents (4.1%)</b>	<ul style="list-style-type: none"> <li>• Single parent households</li> <li>• Caregiver support</li> <li>• Health education about programs that would help families</li> <li>• Need for diapers (lack of diapers can cause parents to miss work)</li> <li>• Need for life skills education</li> </ul>

**Q3: What barriers, if any, exist to improving the health and quality of life for individuals in Middlesex County?**

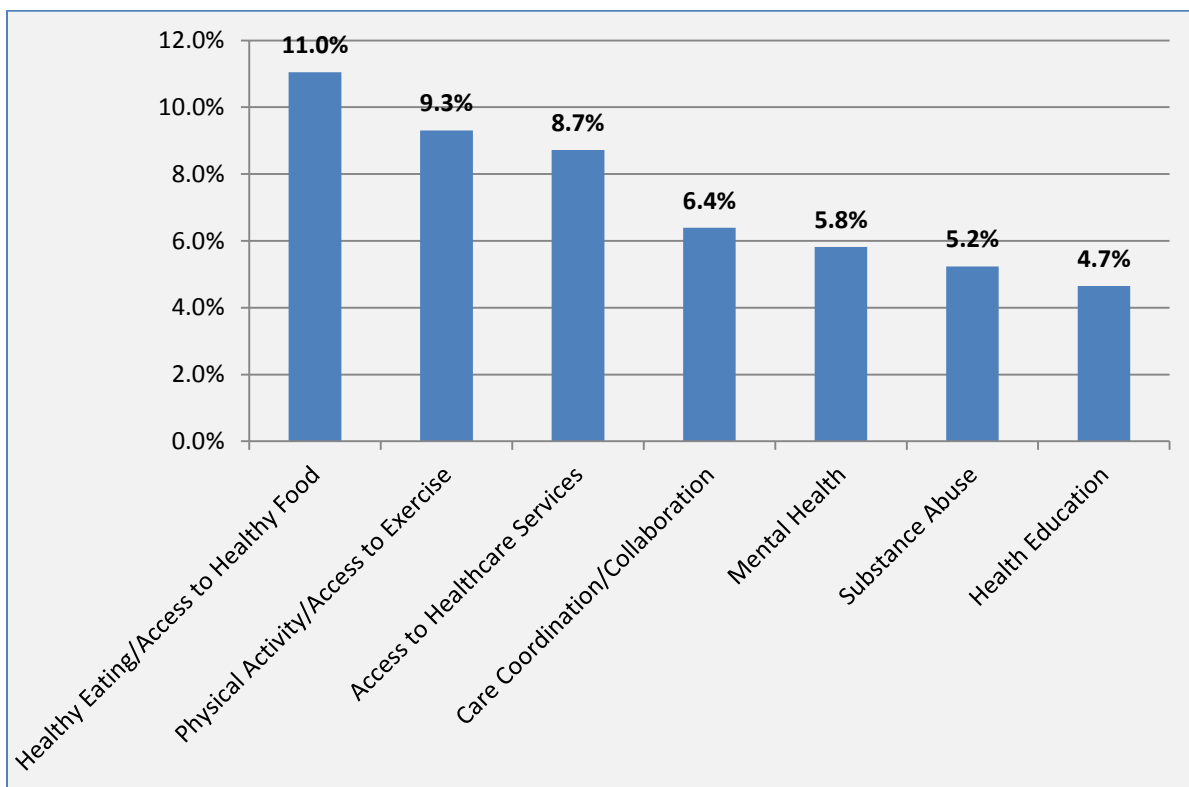


Issue	Detail
<b>Access to Healthcare Services (7.9%)</b>	<ul style="list-style-type: none"> <li>• Lack of health insurance</li> <li>• Affordable health care</li> <li>• Accessing services due to distance</li> <li>• Not enough family doctors</li> <li>• Isolated communities, lack of pooling resources</li> </ul>
<b>Resource Awareness (7.9%)</b>	<ul style="list-style-type: none"> <li>• Knowledge of available services available for individuals</li> <li>• Knowledge of available resources for community agencies</li> <li>• Review current health programs: effective and address community need?</li> </ul>
<b>Care Coordination/ Collaboration (7.9%)</b>	<ul style="list-style-type: none"> <li>• Lack of care coordination</li> <li>• Lack of communication between organizations</li> <li>• Organizations working separately</li> <li>• Lack of collaboration between organizations; working on the same issues and not talking to each other, working in silos</li> <li>• Lack of shared resources and connectivity by healthcare organizations</li> </ul>
<b>Health Education (6.3%)</b>	<ul style="list-style-type: none"> <li>• Lack of health education programs</li> <li>• Lack of communication about community programs</li> <li>• Lack of public education about disease and immunization; need for more public service education</li> <li>• Education and supports for parents regarding providing a healthy way of life for their children</li> </ul>
<b>Transportation (6.3%)</b>	<ul style="list-style-type: none"> <li>• For those living in rural areas</li> <li>• For older adults, especially week-end ride availability</li> <li>• Getting children to doctor's appointments</li> </ul>

### Q3: Continued

Issue	Detail
<b>Funding (6.3%)</b>	<ul style="list-style-type: none"> <li>Funding cuts for supportive programs</li> <li>Program cuts for social services</li> </ul>
<b>Mental Health (4.8%)</b>	<ul style="list-style-type: none"> <li>Access, availability of services</li> <li>Program cuts due to funding issues</li> </ul>
<b>Substance Abuse (4.8%)</b>	<ul style="list-style-type: none"> <li>Program cuts due to funding issues</li> <li>Belief that addiction is a choice</li> </ul>
<b>Economic Barriers (4.8%)</b>	<ul style="list-style-type: none"> <li>Lack of income sufficiency</li> <li>Poverty</li> <li>The economy</li> </ul>
<b>Apathy (4.8%)</b>	<ul style="list-style-type: none"> <li>Thinking there is nothing we can do about the barriers</li> <li>Lack of interest</li> <li>Old habits</li> </ul>

**Q2,4,7:** What needs to be done to address these issues (Q2)? What needs to be done to address these barriers (Q4)? In your opinion, what else will improve the health and quality of life in Middlesex County (Q7)?



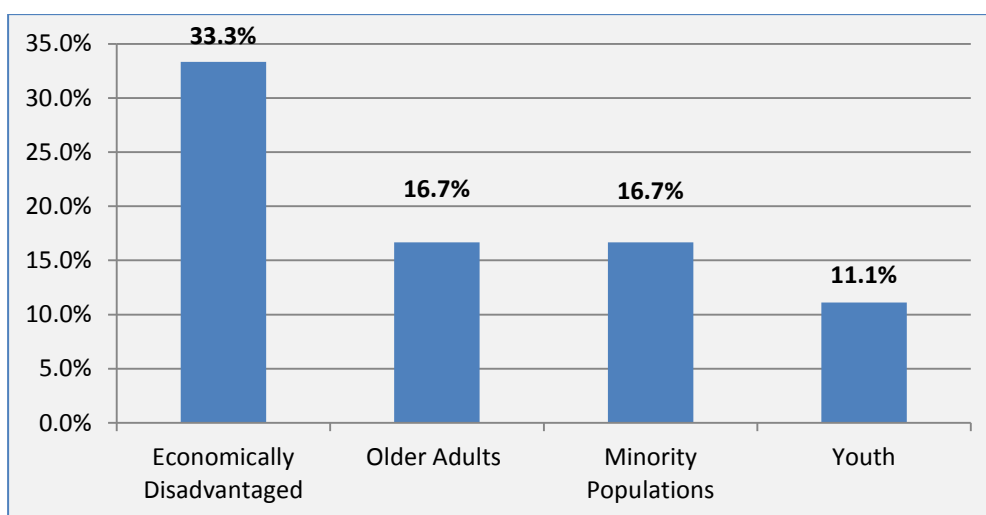
**Q2,4,7: Continued**

Issue	Detail
<b>Healthy Eating/ Access to Healthy Food (11.0%)</b>	<ul style="list-style-type: none"> <li>• Better access to healthy, affordable foods</li> <li>• More education on healthy eating/nutrition, including student education</li> <li>• Better access to nutrition counseling</li> <li>• Work with local bodegas; work with food markets to encourage customers' purchase of healthier foods</li> <li>• Work with school dining halls to encourage healthier food choices</li> <li>• Expand farmer's markets to the winter</li> <li>• Increase donations to food banks</li> <li>• Expand food programs (breakfast in the classroom, increase food back pack program, subsidies for fresh fruits and vegetables)</li> <li>• Healthy food policies (for better food in schools; prevention of marketing junk food to children; tax unhealthy foods)</li> <li>• Work with restaurants to serve healthier foods</li> <li>• Community gardens</li> </ul>
<b>Physical Activity/ Access to Exercise (9.3%)</b>	<ul style="list-style-type: none"> <li>• Motivate people to exercise</li> <li>• Affordable gym memberships</li> <li>• Better access to wellness and recreational activities</li> <li>• Create urban trails</li> <li>• Create walking trails and bike paths</li> <li>• Increase access to sidewalks, bike lanes</li> <li>• Stop locking parks</li> <li>• Policies for physical activities in schools</li> <li>• More physical activities for kids</li> </ul>
<b>Access to Healthcare Services (8.7%)</b>	<ul style="list-style-type: none"> <li>• Access to health care for all, regardless of ability to pay</li> <li>• Affordable health care</li> <li>• Less co-pays</li> <li>• Better access to primary care for those who can't afford it</li> <li>• Walk-in clinics</li> <li>• Evening clinics</li> <li>• More family practice physicians</li> <li>• Simplify access to services</li> <li>• Better communication with African Americans and Hispanics about available services</li> <li>• Bringing services to low income housing areas</li> </ul>
<b>Care Coordination/ Collaboration (6.4%)</b>	<ul style="list-style-type: none"> <li>• Interagency collaboration (including town government, medical community, non-profits, government services)</li> <li>• Coordination of resources</li> <li>• Knowledge of other organization's services</li> <li>• Pooling/sharing resources</li> <li>• Improved communication between agencies</li> <li>• Networking with faith-based and grass roots organizations</li> </ul>

**Q2,4,7: Continued**

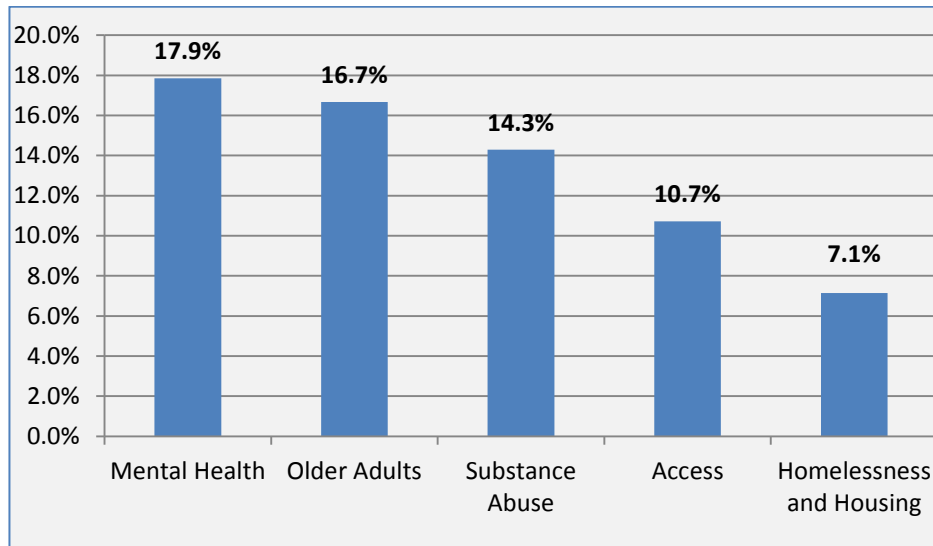
Issue	Detail
<b>Mental Health (5.8%)</b>	<ul style="list-style-type: none"> <li>• Access, availability of services</li> <li>• Education</li> <li>• Early recognition by families</li> <li>• Early screenings</li> <li>• Address mental health stigma</li> <li>• Information on how to access resources regardless of economic status</li> <li>• Solid continuum of services with long enough stays for effective treatment</li> <li>• Services for children under 5 with challenging behaviors</li> </ul>
<b>Substance Abuse (5.2%)</b>	<ul style="list-style-type: none"> <li>• Access, availability of services</li> <li>• Greater supports for people after they receive treatment in order for them to stay sober</li> <li>• Involve entire medical community (including nurses, dentists, etc.) in screening and referrals for alcohol abuse</li> <li>• Community education on how to access services, regardless of economic status</li> <li>• Prevention education at the earliest ages possible</li> <li>• Parental education</li> <li>• Encouraging families to ask for help</li> <li>• Address underage drinking, prescription drug misuse and marijuana use</li> <li>• Social norming about not using drugs</li> </ul>
<b>Health Education (4.7%)</b>	<ul style="list-style-type: none"> <li>• Public education about healthcare issues including disease and immunization, quality of life issues</li> <li>• Consistent, reliable messaging</li> <li>• More health education is needed in low income areas</li> <li>• More education on unhealthy habits</li> <li>• Pediatricians and their staff educating parents about healthy living</li> <li>• Health education starting early in life</li> </ul>

**Q8:** Are there people or groups of people in Middlesex County whose health or quality of life may not be as good as others? Who are these people or groups?



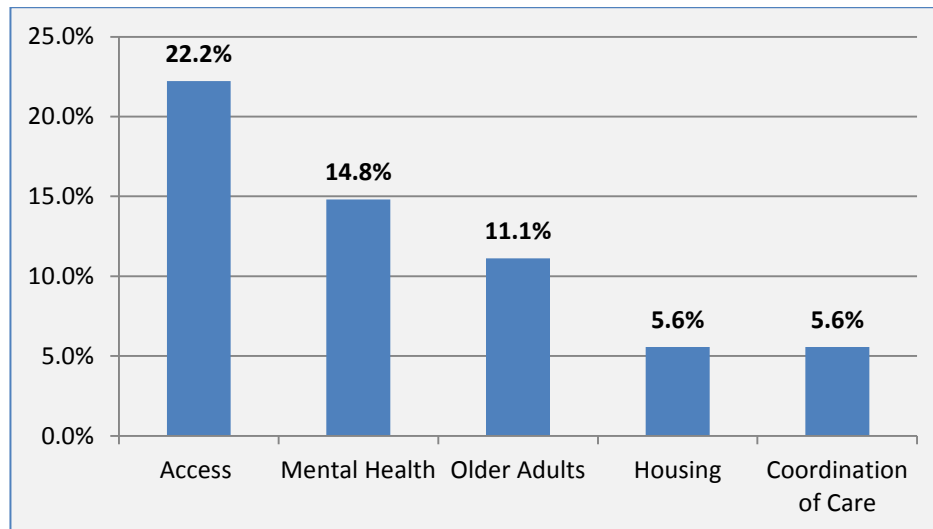
## Health Care Sector Analysis (n=25)

**Q 1: What are the biggest health and quality of life issues of concern in Middlesex County?**



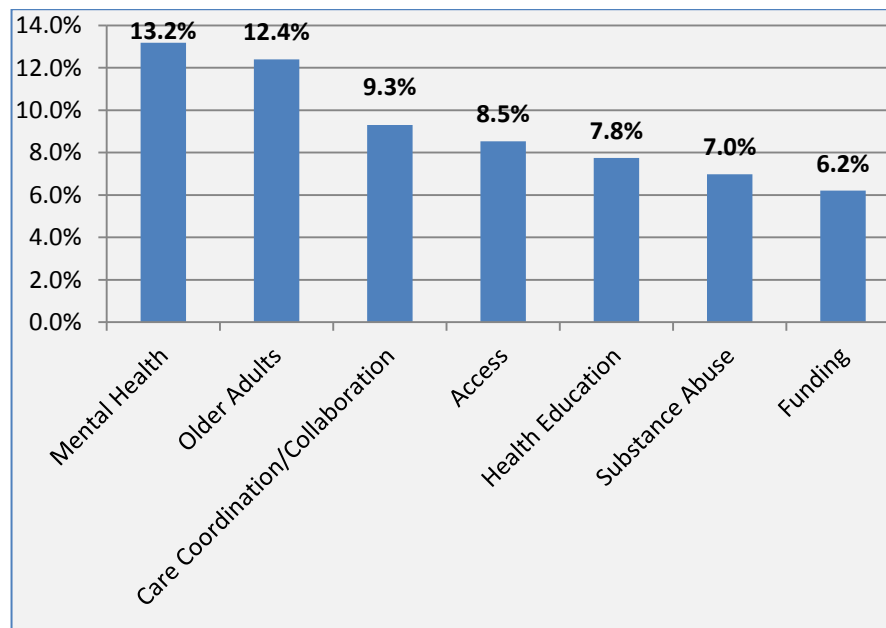
Issue	Detail
<b>Mental Health (17.9%)</b>	<ul style="list-style-type: none"> <li>• Access, availability of services for adults, adolescents, children, Early Head Start population</li> <li>• Awareness of available resources (in general and for physicians to refer to)</li> </ul>
<b>Older Adults (16.7%)</b>	<ul style="list-style-type: none"> <li>• Access, availability of general geriatric services</li> <li>• Access, availability of services for mental health and substance abuse</li> <li>• Coordinated care</li> <li>• Lack of local geriatric assessment; dementia assessment</li> <li>• Lack of knowledge of available resources; no centralized hub of information</li> <li>• Lack of assistance for families to navigate the caregiver system</li> <li>• Lack of local familial support systems</li> <li>• Limited personal resources</li> <li>• Transportation</li> <li>• Need for dedicated hospital resources</li> </ul>
<b>Substance Abuse (14.3%)</b>	<ul style="list-style-type: none"> <li>• Access, availability of services for adults, adolescents, Early Head Start population</li> <li>• Screening in primary care (particularly for alcohol)</li> </ul>
<b>Access (10.7%)</b>	<ul style="list-style-type: none"> <li>• Lack of health insurance</li> <li>• Affordable healthcare; affordable medications</li> <li>• Access for underserved emerging populations (bilingual or monolingual)</li> <li>• Access to care for primary care, specialists, healthcare services in general</li> </ul>
<b>Homelessness and Housing (7.1%)</b>	<ul style="list-style-type: none"> <li>• Lack of supportive housing</li> <li>• Lack of affordable housing</li> </ul>

**Q3:** What barriers, if any, exist to improving the health and quality of life for individuals in Middlesex County?



Issue	Detail
<b>Access (22.2%)</b>	<ul style="list-style-type: none"> <li>• Uninsured</li> <li>• Insurance costs</li> <li>• Affordability of care</li> <li>• Access to care for primary care, specialists (especially for Medicaid patients)</li> <li>• No free clinic in the area</li> </ul>
<b>Mental Health (14.8%)</b>	<ul style="list-style-type: none"> <li>• Access, availability of services for adults, children</li> <li>• Lack of resources for dual disorder treatment (including inpatient)</li> <li>• Lack of preventive health care for mental health</li> <li>• Mental health stigma</li> </ul>
<b>Older Adults (11.1%)</b>	<ul style="list-style-type: none"> <li>• Lack of services</li> <li>• Lack of local geriatric assessment</li> <li>• Access, availability of services for mental health and substance abuse</li> <li>• Lack of knowledge regarding how to access resources for older adults (by seniors themselves, family, caregivers)</li> </ul>
<b>Housing (5.6%)</b>	<ul style="list-style-type: none"> <li>• Lack of supervised supportive housing</li> <li>• Lack of affordable housing</li> </ul>
<b>Coordination of Care (5.6%)</b>	<ul style="list-style-type: none"> <li>• Lack of coordinated care in general</li> <li>• Lack of coordinated care for chronic conditions</li> <li>• Communication from inpatient stays to primary care</li> </ul>

**Q2,4,7:** What needs to be done to address these issues (Q2)? What needs to be done to address these barriers (Q4)? In your opinion, what else will improve the health and quality of life in Middlesex County (Q7)?

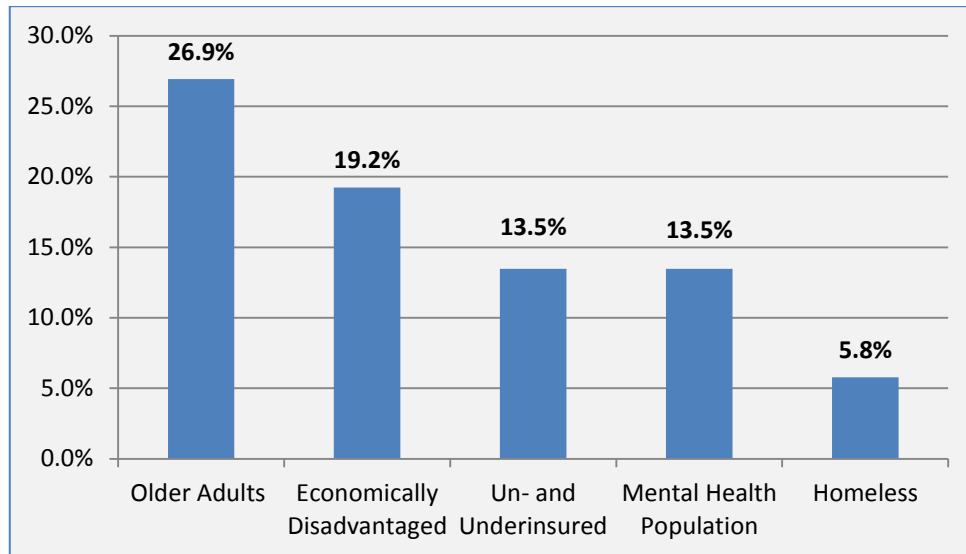


Issue	Detail
<b>Mental Health (13.2%)</b>	<ul style="list-style-type: none"> <li>• Availability of mental health services</li> <li>• Access to affordable mental health services</li> <li>• Care coordination</li> <li>• Develop a central repository of available services</li> <li>• Address un- and undertreated and un- and underdiagnosed</li> <li>• Increase financial support/funding for needed mental health services</li> <li>• More youth and family counselors/social workers in schools</li> <li>• More intensive vocational services for individuals with significant psychiatric impairments</li> <li>• Increase funding for interventions for age 0-5 with behavioral issues</li> <li>• Support for parents with children with behavioral issues</li> </ul>
<b>Older Adults (12.4%)</b>	<ul style="list-style-type: none"> <li>• Comprehensive Geriatric Assessment</li> <li>• More resources/services for geriatric care</li> <li>• Dedicated geriatric service at the hospital</li> <li>• More funding for geriatric substance abuse treatment</li> <li>• Geri-psych services</li> <li>• Care coordination/collaborative care for older adults</li> <li>• Caregivers as part of care team</li> <li>• Information for older adults and their caregivers on available services</li> <li>• Improve transportation for older adults, including access to medical care</li> <li>• More assistance in the home by home health aides</li> </ul>

**Q2,4,7: Continued**

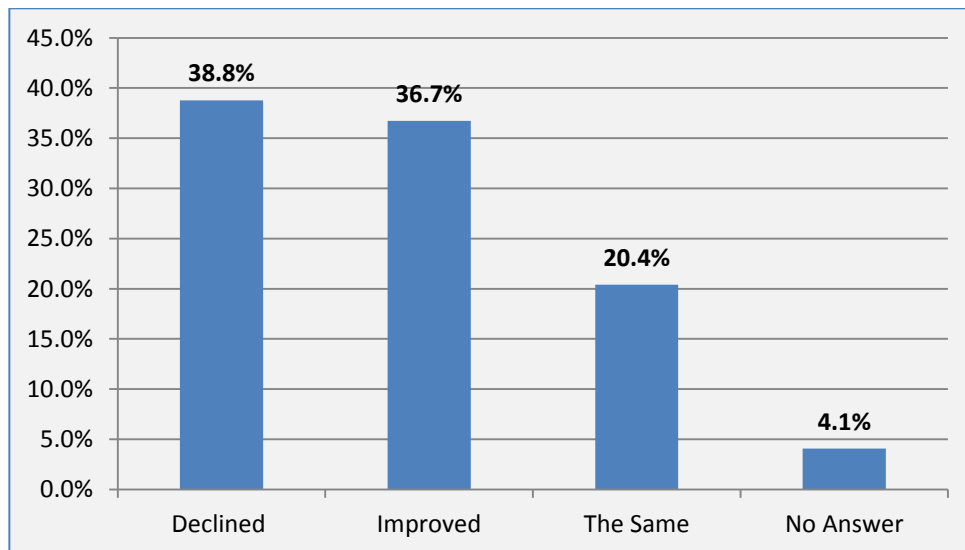
Issue	Detail
<b>Care Coordination/ Collaboration (9.3%)</b>	<ul style="list-style-type: none"> <li>• Care coordination</li> <li>• Communication between hospital inpatient and primary care for consistency of care</li> <li>• Collaboration between community agencies</li> <li>• Interagency coordination</li> </ul>
<b>Access (8.5%)</b>	<ul style="list-style-type: none"> <li>• Increase access for un- and underinsured</li> <li>• Increase access to preventive care</li> <li>• Increase access to after-hours care</li> <li>• Offer affordable health services</li> <li>• Need more providers to accept all types of patients</li> <li>• Assistance for applying to entitlements and agency financial assistance for healthcare services</li> <li>• Centralized “hotline” for linkage to appropriate services</li> <li>• Resource knowledge for practitioners for specialty treatment for the uninsured (specifically psychiatric and orthopedic services)</li> </ul>
<b>Health Education (7.8%)</b>	<ul style="list-style-type: none"> <li>• Need more health care education</li> <li>• Increase awareness of available services</li> <li>• Health care industry informational presentations on health issues and available resources</li> <li>• Education on healthy eating and healthy lifestyles</li> <li>• Targeted education for those who don’t self-manage</li> </ul>
<b>Substance Abuse (7.0%)</b>	<ul style="list-style-type: none"> <li>• Access, availability of services, including dual diagnosis</li> <li>• Outpatient treatment</li> <li>• Support for primary care physicians for patient referral</li> <li>• Address accessibility of illicit drugs at a local and legislative level</li> <li>• More substance abuse prevention</li> <li>• More early substance abuse intervention programs</li> <li>• Public health campaign for alcohol abuse</li> </ul>
<b>Funding (6.2%)</b>	<ul style="list-style-type: none"> <li>• Increase funding for general health care programs</li> <li>• Increase funding for prevention</li> <li>• Increase availability of resources for primary care</li> <li>• Advocacy to increase available resources to meet identified needs</li> <li>• Change in funding strategies that (currently) don’t favor vulnerable populations</li> </ul>

**Q8:** Are there people or groups of people in Middlesex County whose health or quality of life may not be as good as others? Who are these people or groups?



**Community at Large, Community Institution/Organization, Health Care, School, Worksite Sectors - Question 5 Analysis (n=55)**

**Q 5:** In your opinion, has health and quality of life in Middlesex County improved, stayed the same or declined over the past few years?



## APPENDIX 9e

### Qualitative Analysis – Focus Groups

#### (Community at Large, Health Care, Worksite Sectors)

##### Community at Large Sector (10 people)

*What are the biggest health issues of concern in Middlesex County?*

##### Answers (not in rank order)

- Access to:
  - Care for uninsured
  - Affordable healthcare
  - Preventive eye care and dental care
- Cost of:
  - Healthcare, especially for working poor who can't afford to purchase health insurance
  - Health insurance premiums, especially for retirees
  - Emergency room visits
  - High co-pays even with insurance

##### *Underserved populations:*

##### Answers (not in rank order)

- Low-income families
- Working poor
- Undocumented
- Non-English speaking populations
- Homeless

*Barriers/Issues/Needs - to improving the health and quality of life for individuals in Middlesex County:*

Topics	Answers (not in rank order)
<b>Access</b>	<ul style="list-style-type: none"> <li>• Limited access for low-income families; uninsured</li> <li>• Undocumented - use emergency room services rather than primary care for fear of being identified; lack of access to surgery and specialty care</li> <li>• Free care in schools</li> </ul>
<b>Cost</b>	<ul style="list-style-type: none"> <li>• Health services</li> <li>• High co-pays</li> <li>• Affordability of medications</li> <li>• Healthcare being a profit-driven industry in the U.S.</li> </ul>
<b>Economically Disadvantaged</b>	<ul style="list-style-type: none"> <li>• Poverty</li> <li>• Working poor will continue to work when ill because they can't afford to miss work</li> </ul>
<b>Cultural Sensitivity</b>	<ul style="list-style-type: none"> <li>• Lack of cultural sensitivity in healthcare</li> <li>• Cultural sensitivity between medical providers and individuals; language barriers</li> <li>• Medical schools aren't training enough Hispanics and African Americans</li> <li>• Lack of minority staff, clinicians and leadership at local health care institutions</li> </ul>
<b>Healthy Eating</b>	<ul style="list-style-type: none"> <li>• High cost of healthiest food</li> <li>• Teaching children at a young age about healthy eating habits</li> <li>• Education on healthy foods, good nutrition, quick meals that are healthy</li> <li>• Access to fruits and vegetables</li> <li>• Improve food quality served to the homeless, give healthy choices</li> <li>• Nutrition for school children who rely on meals in schools</li> </ul>

*Barriers/Issues/Needs Continued:*

Topics	Answers (not in rank order)
<b>Supports</b>	<ul style="list-style-type: none"><li>• Support for families, especially single parent households</li><li>• Strengthening communities</li><li>• Personal accountability for/ownership of one's health</li><li>• Difficulty with completing local hospital financial assistance paperwork</li></ul>
<b>Health Education</b>	<ul style="list-style-type: none"><li>• Health education, especially to low-income families</li><li>• Health education on prevention</li><li>• Health and wellness “block party” in Middletown</li><li>• More chronic disease self-management training for individuals; more education to teach people how to take care of themselves to prevent chronic illnesses</li><li>• Community outreach by local health care institutions</li><li>• Patient compliance with medication for chronic disease management</li></ul>
<b>Prevention</b>	<ul style="list-style-type: none"><li>• Prevention efforts</li><li>• Prevention education in schools</li><li>• More screenings for cholesterol, diabetes and obesity</li></ul>
<b>Smoking</b>	<ul style="list-style-type: none"><li>• Smoking among young people</li><li>• Need smoking prevention for young people</li><li>• Need smoking cessation intervention for young people</li></ul>
<b>Physical Activity</b>	<ul style="list-style-type: none"><li>• Safe area for exercise</li><li>• Lack of a community recreation center in Middletown</li></ul>
<b>Misc.</b>	<ul style="list-style-type: none"><li>• Better training/education for minorities so they can receive higher education and increase health in minority communities</li><li>• Funding for medical practice for public good rather than for profit</li></ul>

## Health Care Sector (18 people)

*What are the biggest health issues of concern in Middlesex County?*

Answers (not in rank order)
<ul style="list-style-type: none"><li>• Mental health</li><li>• Access to healthcare services</li><li>• Substance abuse</li><li>• Older adults</li></ul>

*Underserved populations:*

Answers (not in rank order)
<ul style="list-style-type: none"><li>• Psychiatric population</li><li>• Substance abuse population, particularly alcohol abuse</li><li>• Adolescents</li><li>• Older adult population</li><li>• Disabled under age 65</li><li>• Homeless</li></ul>

*Barriers/Issues/Needs - to improving the health and quality of life for individuals in Middlesex County:*

Topics	Answers (not in rank order)
<b>Access</b>	<ul style="list-style-type: none"><li>• Primary care</li><li>• Specialists, especially for Medicaid population</li><li>• Nutritionists or dieticians, which may be limited due to insurance coverage</li></ul>
<b>Cost</b>	<ul style="list-style-type: none"><li>• Healthcare services, which leads to limited access</li><li>• Medications</li></ul>
<b>Care Coordination</b>	<ul style="list-style-type: none"><li>• Need to connect patients to resources, services and appointments</li><li>• Follow-through to ensure that patients are connected with the appropriate level of care</li><li>• Coordination for the chronically ill and also for those “at risk” of becoming chronically ill</li><li>• Case management</li><li>• Difficulty locating patients when they are back in the community</li></ul>

*Barriers/Issues/Needs Continued:*

Topics	Answers (not in rank order)
<b>Older Adults</b>	<ul style="list-style-type: none"> <li>• Lack of geriatric-specific services</li> <li>• Care coordination</li> <li>• Collaboration between community agencies</li> <li>• Quality residential facilities for ambulatory older adults</li> <li>• Transportation for older adults - inability to access resources, follow-up appointments, specialists</li> <li>• Lack of familial support system for some</li> <li>• Lack of social supports</li> <li>• Depression</li> <li>• Substance abuse</li> <li>• Condition of home may be a problem</li> <li>• Cost of medications which can lead to rationing by older adults</li> </ul>
<b>Health Education</b>	<ul style="list-style-type: none"> <li>• Education on medications</li> <li>• Health education to patients about what their illness is, how to treat it and how to manage it</li> <li>• “Active listening” where physicians tell patients information and ask patients to repeat it back</li> <li>• Provide patients with a printed physician visit summary and a description of meds and how to take them</li> </ul>
<b>Supports</b>	<ul style="list-style-type: none"> <li>• Food insecurity</li> <li>• Lack of stable housing</li> <li>• Lack of social supports</li> <li>• Lack of awareness of resources available to individuals</li> <li>• Resource guide - developed by community agencies, healthcare organizations and providers - that reviews all available community services and resources → for use by individuals and providers</li> <li>• Help individuals see health as a priority (keeping appointments, etc.)</li> </ul>
<b>Mental Health</b>	<ul style="list-style-type: none"> <li>• Continuum of care between inpatient and outpatient treatment for psychiatric population</li> <li>• Psychiatric issues among school children</li> </ul>
<b>Substance Abuse</b>	<ul style="list-style-type: none"> <li>• Lack of substance abuse services</li> <li>• Substance abuse in schools</li> </ul>
<b>Communication and Collaboration</b>	<ul style="list-style-type: none"> <li>• Communication and collaboration between community agencies</li> <li>• Computer systems that don’t “talk to each other”; lack of central medical record</li> </ul>

*Barriers/Issues/Needs Continued:*

Topics	Answers (not in rank order)
<b>Children</b>	<ul style="list-style-type: none"><li>• Childhood obesity</li><li>• Kids don't get enough exercise</li><li>• Gym requirement in all school levels, including high school</li><li>• Start education on healthy habits early in life</li><li>• Oral health for children</li><li>• Increased funding is needed for school activities</li></ul>
<b>Transportation</b>	<ul style="list-style-type: none"><li>• Public transportation limitations, which contributes to inability to access resources and specialists; especially an issue for low-income individuals and older adults</li></ul>
<b>Healthy Habits</b>	<ul style="list-style-type: none"><li>• Provide parents with resources on healthy eating</li><li>• Campaign for healthy eating</li><li>• Health education on healthy food choices that is understandable</li><li>• Smoking cessation</li><li>• Prevention for unhealthy behaviors</li></ul>

### Worksite Sector (4 people)

*What are the biggest health issues of concern in Middlesex County?*

#### Answers (not in rank order)

- Mental Health
- Substance abuse
- Chronic diseases such as diabetes, cardiovascular disease, chronic lung disease
- Air quality
- Infectious disease

*Underserved populations:*

#### Answers (not in rank order)

- Low-income families
- Working poor

*Barriers/Issues/Needs - to improving the health and quality of life for individuals in Middlesex County:*

Topics	Answers (not in rank order)
<b>Access</b>	<ul style="list-style-type: none"><li>• Lack of access to healthcare services for low income families</li><li>• Access to mental health services for those living in poverty</li><li>• Need free clinics</li></ul>
<b>Cost</b>	<ul style="list-style-type: none"><li>• Cost of healthcare services, especially for low-income families</li><li>• Affordable health insurance</li><li>• College isn't affordable</li></ul>
<b>Economically Disadvantaged</b>	<ul style="list-style-type: none"><li>• Minimum wage is not enough</li><li>• Economic insecurity</li><li>• Full-time positions are either cut of reduced to part-time positions</li></ul>
<b>Adolescents</b>	<ul style="list-style-type: none"><li>• Peer pressure for teenage promiscuity</li><li>• Drug use in schools, especially marijuana</li></ul>
<b>Supports</b>	<ul style="list-style-type: none"><li>• Transportation, especially in rural areas for seniors or those who are disabled</li></ul>
<b>Misc.</b>	<ul style="list-style-type: none"><li>• Lack of knowledge about how to access healthcare services</li><li>• Smoking</li><li>• Health education</li><li>• Dental health</li><li>• Social/welfare needs</li><li>• Free vaccines</li><li>• Flu shots for everyone</li></ul>

## **APPENDIX 10a Middlesex County Coalition on Community Wellness Steering Committee**

Mary Jane Engle, Director of Health, Coalition Co-Chair*	Connecticut River Area Health District
Thad King, Director of Health, Coalition Co-Chair	Chatham Health District
Catherine Rees, Manager, Community Benefit, Coalition Co-Chair**	Middlesex Hospital
Sherry Carlson, Public Health Nurse	Connecticut River Area Health District
Susan Dubb, Public Health Nurse	Chatham Health District
Lisa Fasulo, Director of Health	Essex Health Department
Midge Malicki, Community Wellness Coordinator	Middlesex County Coalition on Community Wellness
Wendy Mis, Director of Community Health	Chatham Health District

\* Mary Jane Engle Co-Chaired the Coalition between November 2011 and June 2012

\*\* Catherine Rees Co-Chaired the Coalition from July 2012 to current

## APPENDIX 10b Middlesex County Coalition on Community Wellness Members

Adam Perrin, MD, Medical Director, Center for Chronic Care Management	Middlesex Hospital; Assistant Clinical Professor, Department of Family Medicine, University of Connecticut School of Medicine
Amy D. Gagliardi, MA, IBCLC, RLC Maternal-Infant Program Director	Community Health Center, Inc.
Anita Dempsey, The Zumba Lady	Zumba Fitness
Art Linares, State Senator, 33 <sup>rd</sup> District	Connecticut General Assembly
Arthur Tanner, Health Care Council Co-Chair	Middlesex County Chamber of Commerce Health Care Council
Betsey Chadwick, MA, Director	Middlesex County Substance Abuse Action Council (MCSAAC)
Betsy Dean, Executive Director	Durham Middlefield Youth and Family Services
Betsy Morgan, Director	Middlesex Coalition for Children
Bobbie Knoll Peterson, Executive Director	North End Action Team (NEAT)
Cat Greaves, Director of Family Resources	Middletown Youth Services
Catherine Rees, MPH, Manager, Community Benefit	Middlesex Hospital
Charise Corsino, MA, Director, Middlesex County Sites	Community Health Center, Inc.
Cheryl B. Chandler, BSW, Executive Director	Youth and Family Services of Haddam-Killingworth, Inc.
Dave Landsberg, Health Care Council Co-Chair	Middlesex County Chamber of Commerce Health Care Council; Community Health Center, Inc.
Deanna Rhodes, Land Use Administrator/Planner	Town of Portland
Dionne Lowndes, BSN, RN, Maternal Child Health Manager	ACES Middlesex County Early Headstart Partnership
Donna Marino, Partnership Coordinator	Middletown Schools
Dwight Norwood, MSW, MBA, Director, The Gatekeeper Program	St Luke's Eldercare Services
Ed Bonilla, MBA, MS, Senior Director for Community Resources	Middlesex United Way
Gary Burnett	Durham Middlefield Youth and Family Services
Heather McNeil, LMFT, LADC, Director	Old Saybrook Youth and Family Services
Izzi Greenberg, Executive Director	Middlesex Coalition for Children
Jackie Haywood, Property Manager	Theresa A. Rook Retirement Community
Jane Hylan, MPH, CHES, Director School Based Health Services	Community Health Center, Inc
Janet Nocek, MSLS, Director	Portland Library
Janet Willits, Intern	St Luke's Eldercare Services
Jason Belejack, ND	Durham Naturopathic Health and Wellness Center

Jeff Bernstein, MD, Internal Medicine	Emergency and Internal Medicines, Middlesex Hospital
Jessica Lyman, MPH, Dental Health Care Specialist	Connecticut Dental Health Partnership
Jim Monopoli, MPH, Director of Health	CT River Area Health District
Joanne M. Ligas, BSN, RNC	Middlesex Hospital Homecare
Joseph Havlicek, MD, Director of Health	Middletown Health Department
Joyce Walter, MS, CHES, Director, Davison Health Center	Wesleyan University
Judy Bahr MSN, RN-BC, CIC, Geriatric Educator/NICHE Coordinator	Middlesex Hospital
Justin Carbonella, MPA, Coordinator	Middletown Youth Services Bureau
Kathleen Lutz	University of Connecticut Health Center
Kathryn Glendon, Prevention Coordinator	Haddam-Killingworth Youth and Family Services
Katie Kenneally, Public Affairs Coordinator	Connecticut General Assembly
Kit McKinnon, BSN RN CDE, CCM, Manager Diabetes Care and CCCM Support, Center for Chronic Care Management	Middlesex Hospital
Konrad Kotrady, MD, Director of Health	Chester Health Department
Lee Vito, RS, Sanitarian	Middlefield Health Department
Lily Gagliardi, BA, CEO	Lily's Kids Inc.
Lisa Fasulo, BS, MPH, RS, Director of Health	Essex Health Department
Lisa Sedlock-Reider, LCSW, Office Director, Middletown	Connecticut Department of Children and Families
Louis Carta, MA, Community Health Educator	Middletown Health Department
Lydia Brewster	St. Vincent de Paul, Middletown
Mark P Lundgren, Municipal Agent	Haddam Senior Center
Mary Flood, Director	Portland Senior Center
Mary Pont, Director	Portland Youth Services
Maura Esposito, RS, MPH, Director of Health	Killingworth Health Department
Maureen Nuzzo, BS, MBA, Director of Food Services	Old Saybrook Public Schools
Melissa Ziobron, State Representative, 34 <sup>th</sup> District	Connecticut House of Representatives
Michael Gilroy, Library Director	East Haddam Free Public Library
Michele Rulnick, Vice President	Middlesex YMCA
Midge Malicki, MPH, CHES, Community Wellness Coordinator	Middlesex County Coalition on Community Wellness
Monica Belyea, MPH, RD Community Nutrition Specialist	UCHC Center for Public Health and Health Policy
Nancy McAuliffe, CHES, Health Educator	Chatham Heath District
Nat Holmes	Community Health Center, Inc.
Pam Danas, Owner	Curves Cromwell
Patrice Barrett, MPH, Member	Middletown Citizen's Advisory Committee
Patty Dowling, MSW, Executive Director	Shoreline Soup Kitchens and Pantries

Peter Schultheis, MA, Director	Clinton Youth and Family Services
Philip Miller, State Representative, 36 <sup>th</sup> District	CT General Assembly
Rebecca Hays, Ph.D., Clinical Director	Franklin Academy
Rev Deborah Hopkins, Member	Middletown Ministerial Alliance
Ron Krom, Executive Director	St. Vincent de Paul
Rosa Browne, MBA, MPH, CHES, President	Middlesex County NAACP
Salvatore Nesci, RS, Chief Public Health Sanitarian/Office Manager	Middletown Health Department
Sean Dwyer, Director	Portland Parks and Recreation
Sherry Carlson, RN, BSN, Public Health Nurse	CT River Area Health District
Sue Berescik, Library Services Director	East Hampton Public Library
Susan Consoli, MA, LPC, Coordinator	Old Saybrook Social Services
Susan Dubb, RN, AEMT, Public Health Nurse	Chatham Heath District
Susan Furbish, RD, Assistant Director	UCHC Center for Public Health and Health Policy
Thad King, MPH, RS, Director of Health	Chatham Heath District
Thayer Talbott, Programs and Operations Director	Community Foundation of Middlesex County
Theresa Strong, Director	Cromwell Senior and Human Services
Tony Sharillo, Youth and Camp Ingersoll Director	Middlesex YMCA
Tracy Mancinelli	Connecticut House of Representatives
Veronica Mansfield, APRN, AE-C, CCM, Manager of Disease Care and Development, Center for Chronic Care Management	Middlesex Hospital
Vickie Han, LPN, PC, Cancer Control Coordinator	Chatham Health District
Wendy Mis, MPH, CHES, Director of Community Health	Chatham Health District
Wendy Regan, MFT, Director of Human Services	East Hampton Human Services
Wesley Bell, RS, MS, MPH, Director of Health	Cromwell Health Department
William Milardo Jr, RS, Assistant Health Officer/Sanitarian	Durham Health Department

## Appendix 10c- Workgroup Members

<b>Cowgirls</b>	
Sherry Carlson, Public Health Nurse	Connecticut River Area Health District
Susan Dubb, Public Health Nurse	Chatham Health District
Lisa Fasulo, Director of Health	Essex Health Department
Midge Malicki, Community Wellness Coordinator	Middlesex County Coalition on Community Wellness
Catherine Rees, Manager, Community Benefit	Middlesex Hospital

<b>School Sector</b>	
Sherry Carlson, Public Health Nurse	Connecticut River Area Health District
Christine Fahey, School Readiness Coordinator	Middletown Schools
Daria Keyes, Program Planner	iCare and Opportunity Knocks, Middlesex Hospital
Lisa Mason, Community Health Liaison	Middlesex County Substance Abuse Action Council (MCSAAC)
Michele Rulnick, Vice President	Northern Middlesex YMCA

<b>Work Site Sector</b>	
Charise Corsino, Director, Middlesex County Sites	Community Health Center, Inc.
Susan Dubb, Public Health Nurse	Chatham Health District
Kit McKinnon, Manager, Diabetes Care Program	Middlesex Hospital
Dwight Norwood, Director, Gatekeeper Program	St. Luke's Eldercare Services
Tony Sharillo, Youth and Camp Ingersoll Director	Middlesex YMCA
Janet Willets, Intern	St. Luke's Eldercare Services

<b>Community Institution/Organization Sector</b>	
Monica Belyea, Community Nutrition Specialist	UCHC Center for Public Health and Health Policy
Ed Bonilla, Senior Director for Community Resources	Middlesex United Way
Justin Carbonella, Coordinator	Middletown Youth Services Bureau
Betsey Chadwick, Director	Middlesex County Substance Abuse Action Council (MCSAAC)
Susan A. Furbish, Assistant Director	UCHC Center for Public Health and Health Policy
Amy Gagliardi	Community Health Center, Inc.
Lily Gagliardi, CEO	Lily's Kids, Inc.
Midge Malicki, Community Wellness Coordinator	Middlesex County Coalition on Community Wellness
Joyce Walter, Director, Davidson Health Center	Wesleyan University

<b>Community at Large Sector</b>	
Susan Dubb, Public Health Nurse	Chatham Health District
Lisa Fasulo, Director of Health	Essex Health Department
Jessica Lyman-Valli, Dental Health Care Specialist	CT Department of Public Health
Wendy Mis, Director of Community Health	Chatham Health District
Jim Monopoli, Director of Health	Connecticut River Area Health District
Betsy Morgan, Director	Middlesex Coalition for Children

<b>Health Care Sector</b>	
Jason M. Belejack, ND	Durham Naturopathic Health and Wellness Center
Joann Ligas, Homecare Coordinator	Middlesex Hospital Home Care
Dionne Lowndes, Maternal Child Health Manager	ACES Middlesex County Early Head Start Partnership
Veronica Mansfield, Manager of Disease Care and Development, Center Chronic Care Management	Middlesex Hospital
Adam E. Perrin, MD, Medical Director, Center for Chronic Care Management	Middlesex Hospital; Assistant Clinical Professor, Department of Family Medicine, University of Connecticut School of Medicine
Catherine Rees, Manager, Community Benefit	Middlesex Hospital

## **APPENDIX 10d: Community Agencies and Partners that Participated with Key Informant Interviews, Focus Groups, and CHANGE Tool Surveys**

ACES Middlesex County Early Head Start Partnership	Dionne Lowndes, BSN, RN, Maternal Child Health Manager
Advanced Behavioral Health	Barbara Durham MA, LADC, Regional Coordinator
Bon Appétit	Michael Strumpf, Resident District Manager
Chestelm Health & Rehabilitation Center	Brenda E. Marinan, Administrator
City of Middletown	Daniel T. Drew, Mayor
City of Middletown – Department of Police Services	Gary Wallace, Captain
City of Middletown – Health Department	Joseph Havlicek, MD, Director of Health
City of Middletown – Health Department	Louis Carta, MA, Community Health Educator
City of Middletown – Health Department	Salvatore Nesci, RS, Chief Public Health Sanitarian/Office Manager
Clinton Youth and Family Services	Peter Schultheis, MA, Director
Community Foundation of Middlesex County	Cynthia H. Clegg, President & CEO
Community Health Center, Inc.	Clinton and Middletown sites
Community Health Center, Inc.	Gail Fasciano, RN, Nurse Manager
Community Health Center, Inc.	Margaret Flinter, APRN, PhD, Senior Vice President and Clinical Director
Community Health Center, Inc.	Mark Masselli, President/CEO
Connecticut Valley Hospital	Helene Vartelas, CEO
CT Dental Health Partnership	Jessica Lyman, MPH, Dental Health Care Specialist
CT Department of Children and Families	Lisa Sedlock-Reider, LCSW, Office Director, Middletown
Curves Cromwell	Pam Danas, Owner
Durham Middlefield Youth and Family Services	Betsy Dean, Executive Director
Durham Naturopathic Health and Wellness Center	Jason M. Belejack, ND
East Haddam Medical Associates, PC	Malcolm Gourlie, MD
East Hampton School District	Terry Schramm, RNC, CCM, CLCP, MSCC, School Nurse Supervisor
East Hampton Volunteer Ambulance Association	Tom Donnelly, Chief of Operations
Franklin Academy	Dr. Rebecca Hays, Ph.D., Clinical Director
Gilead Community Services, Inc.	Barry Simon, MA, MPA, Chief Executive Officer
Haddam Senior Center	Mark Lundgren, Municipal Agent
Home Depot Middletown	Lisa Huelsman, Department Supervisor
Home Depot Middletown	Scott Predom, Customer Order Specialist
Lily's Kids Inc.	Lily Gagliardi, BA, CEO
Michael Smithwick, LLC	Michael Smithwick, Licensed Professional Counselor
Middlesex Coalition for Children	Betsy Morgan, Director

Middlesex County Chamber of Commerce	Larry McHugh, President
Middlesex County Community Member, Veteran	Lawrence Riley, Commander, Vets of the Vietnam War
Middlesex County Community Member, Veteran	Phil Cacciola, Commander, American Legion Post 75
Middlesex County Community Member, Veteran	William Currlin, Durham Fair Coordinator; American Legion Post 75; Vets of the Vietnam War
Middlesex County NAACP	Al Weston, Member
Middlesex County NAACP	Andrew Dykas
Middlesex County NAACP	Bobby Rock, Member
Middlesex County NAACP	Cocomo Rock, Member
Middlesex County NAACP	Enid Butts, Member
Middlesex County NAACP	Evelyn B. Elam, Member
Middlesex County NAACP	Grady W. Fitzpatrick, Sr., Treasurer/Finance Committee
Middlesex County NAACP	Rosa Browne, MBA, MPH, CHES, President
Middlesex County NAACP	Shelley Rothman, Member
Middlesex County NAACP	Winston Dunn, Member
Middlesex County Substance Abuse Action Council (MCSAAC)	Betsey Chadwick, MA, Director
Middlesex Hospital	Adam Perrin, MD, Medical Director, Center for Chronic Care Management, Middlesex Hospital; Assistant Clinical Professor, Department of Family Medicine, University of Connecticut School of Medicine
Middlesex Hospital	Alan B. Douglass, MD, FAAFP, Director, Family Medicine Residency Program
Middlesex Hospital	Arthur McDowell, MD, Vice President, Clinical Affairs
Middlesex Hospital	Brian Taber, MSPT, DPT, Rehabilitation Supervisor, Physical Rehabilitation Department
Middlesex Hospital	Cliff O'Callahan, MD, PhD, FAAP, Pediatric Faculty & Director Nurseries
Middlesex Hospital	Deb Warzecha, MSN, RN, NEA-BC, Director ED & Inpatient Behavioral Health Services
Middlesex Hospital	Doug Paup, Director, Food & Nutrition
Middlesex Hospital	Jackie Calamari, MSN, MS, NEA-BC, CEN VP Patient Care Services/Chief Nursing Officer
Middlesex Hospital	Jackie Nelson, BSN, RN, CEN, Emergency Department Nurse Manager
Middlesex Hospital	Kelly Haeckel, MSN, BSN, RN, Nurse Manager
Middlesex Hospital	Kit McKinnon, BSN, RN, CDE, CCM, Manager Diabetes Care and CCCM Support, Center for Chronic Care Management

Middlesex Hospital	Lynn Yuris, Office Manager, Middletown Family Practice
Middlesex Hospital	Michael Saxe, MD, FACEP, Chair, Emergency Medicine
Middlesex Hospital	Paulette Swanson PT, DPT, MS, cert MDT, Administrative Director, Rehabilitation Services and Hand Therapy Department
Middlesex Hospital	Rebecca Burrell, MS, CCC/SLP, Inpatient Therapy Supervisor, Speech-Language Pathologist, Physical Rehabilitation Center
Middlesex Hospital	Terri DiPietro, OTR/L, MBA, Director of Outpatient Behavioral Health
Middlesex Hospital	Veronica Mansfield, APRN, AE-C, CCM, Manager of Disease Care and Development, Center for Chronic Care Management
Middlesex Hospital	Vincent G. Capece, Jr., President/CEO
Middlesex Hospital	Wheatley Wentzell, MBA-HCM, MT(ASCP), Administrative Fellow
Middlesex Hospital Family Medicine Group	Otto Weis, MD
Middlesex Hospital Homecare	Joanne Ligas, BSN, RNC
Middlesex Hospital Primary Care	Millicent Malcolm, DNP, GNP-BC, APRN
Middlesex United Way	Kevin Wilhelm, Executive Director
Middlesex YMCA	Michele Rulnick, Vice President
Middlesex YMCA	Tony Sharillo, Youth and Camp Ingersoll Director
Middletown Citizen's Advisory Committee	Patrice Barrett, MPH, Member
Middletown High School	Colleen Weiner, Principal
Middletown Public Schools	Christine Fahey, School Readiness Coordinator
Middletown Public Schools	Patricia Charles, Superintendent
North End Action Team (NEAT)	Izzi Greenberg, Executive Director
Northwest Children's Center	Suzanne Rutner, Director
Old Saybrook Public Schools	Karen VanderHorst, RN, BSN, Head Nurse
Old Saybrook Public Schools	Maureen Nuzzo, BS, MBA, Director of Food Services
Regional School District 13	Susan Viccaro, Superintendent
Rushford Center, Inc.	Edwina Ranganathan, Clinical Supervisor
Rushford, A Hartford HealthCare Partner	Jeffrey Walter, President/CEO
Shoreline Soup Kitchens and Pantries	Patty Dowling, MSW, Executive Director
St. Luke's Eldercare Services	Dwight Norwood, MSW, MBA, Director, The Gatekeeper Program
St. Luke's Eldercare Services	Nancy Leonard, MSW, LCSW, MBA, Executive Director
St. Vincent de Paul, Middletown	Ron Krom, Executive Director
Theresa A. Rook Retirement Community	Jackie Haywood, Property Manager

Town of Cromwell – Senior Center	Theresa Strong, Senior/Human Services Director
Town of East Haddam	Mark B. Walter, First Selectman
Town of East Hampton – Human Services	Wendy Regan, MFT, Director of Human Services
Town of Haddam	Candace Casale, RN
Town of Killingworth	Catherine Iino, First Selectwoman
Town of Portland	Susan Bransfield, MPA, First Selectwoman
UHC Center for Public Health and Health Policy	Monica Belyea, MPH, RD Community Nutrition Specialist
UHC Center for Public Health and Health Policy	Susan Furbish, RD, Assistant Director
Water's Edge Center for Health & Rehabilitation	Laura P. Falt, Director of Community Relations
Wesleyan University	Gretchen Streiff, Assistant Director, Student Activities and Leadership
Wesleyan University	Joyce Walter, MS, CHES, Director, Davison Health Center
Wesleyan University	Michael Leung, QRC Intern
Wildwood Pediatrics & Adolescent Medicine	Nicholas Condulis, MD, FAAP
Youth and Family Services of Haddam-Killingworth, Inc	Cheryl Chandler, BSW, Executive Director

## APPENDIX 11 Photo Journal Pictures from CoCW Members

Middlesex County Coalition on Community Wellness members submitted the following pictures to illustrate- either positively or otherwise- how our local communities address the five CTG focus areas: Healthy Eating/Active Living, Tobacco-Free Living, High Quality Clinical Preventive Services, Healthy and Safe Physical Environment and Social and Emotional Wellness. Pictures illustrate both Environmental and Policy assets.

### HEALTHY EATING



*Middletown has several locations where fresh produce is available. The Food Mart shown above accepts EBT (Electronic Benefits Transfer) - a system where state public assistance and federal food stamp benefits can be accessed through electronic transactions.*





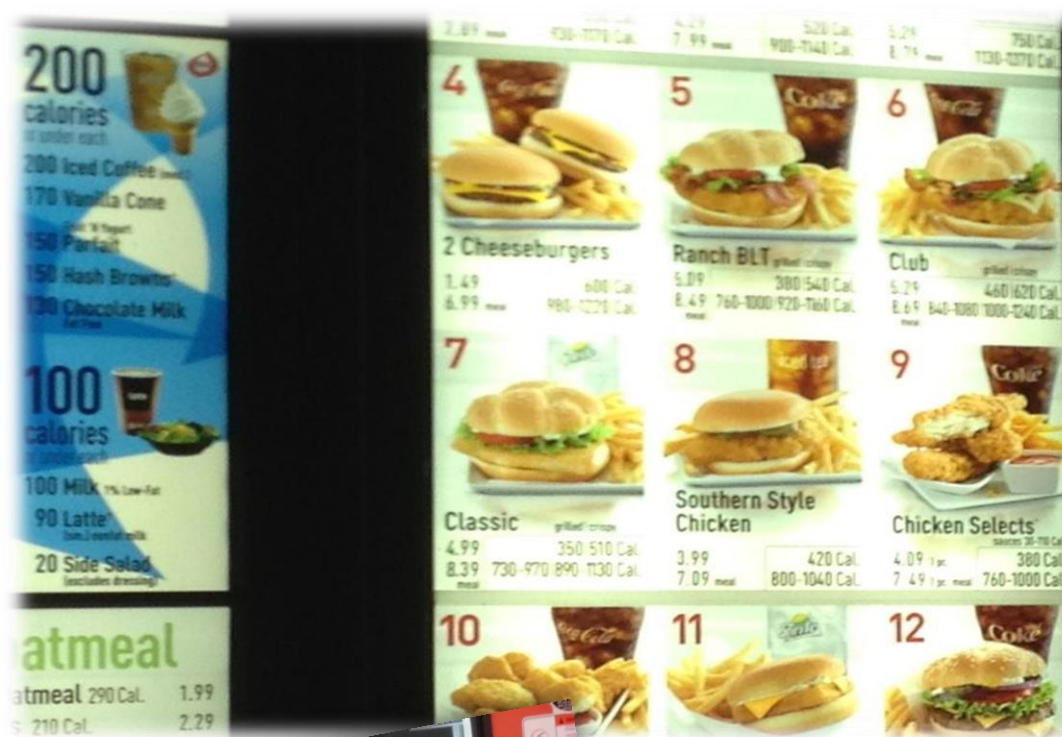
**Family with Organic  
Farm in Middletown**



*Farmers' Markets  
(environmental assets) offer  
fresh, locally grown foods.*

*Farmers' Market Nutrition  
Program (FMNP) is a  
popular supplemental food  
program (policy) offered at  
most CT Farmers' Markets.*

*Many markets include  
organic foods.*

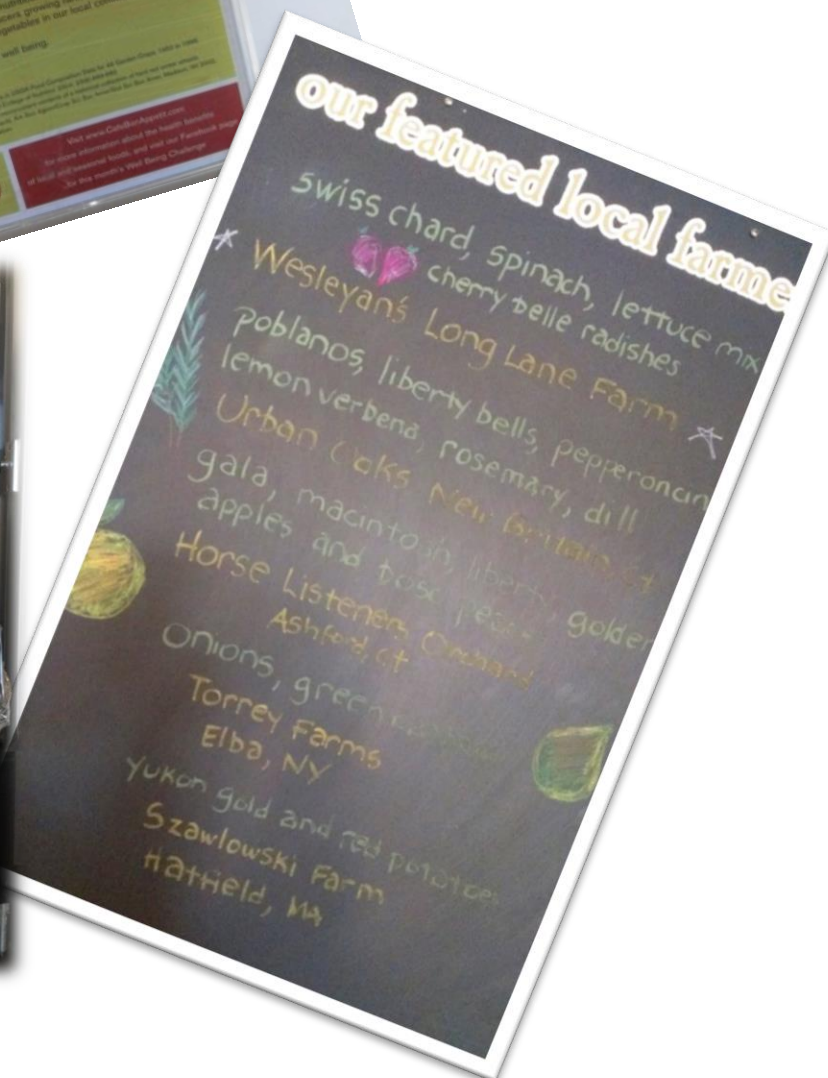


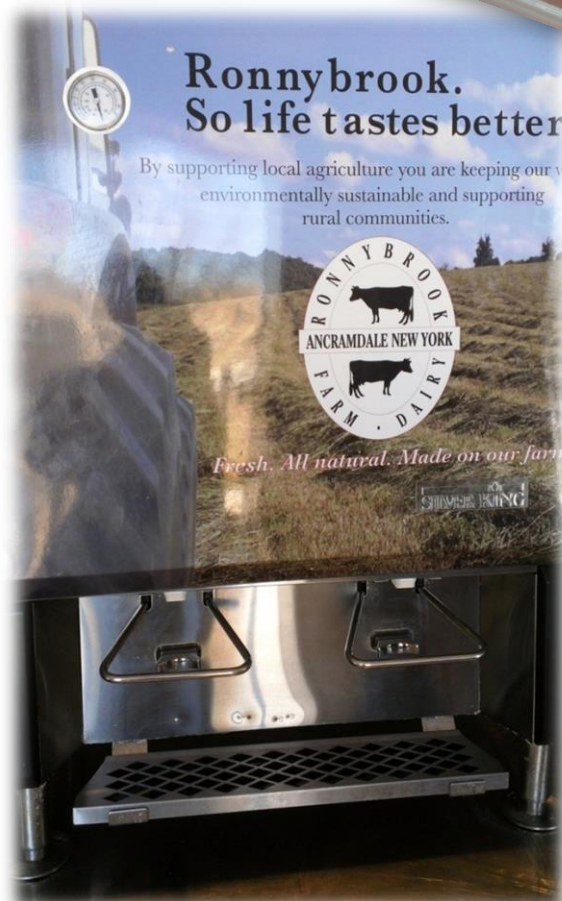
*Fast food restaurants and vending machines can include healthy eating options. Some fast food restaurants include grilled foods, salads, or oatmeal*

*This vending machine in the Middletown YMCA offers water, juices, baked crunchy snacks and granola bars, demonstrating an environmental asset that supports a policy to provide healthier food options.*



Wesleyan University in Middletown offers many fresh food choices to students and staff. Produce from local farms is promoted on a chalk board. “Bottled” water is dispensed in a self-serve dispenser.





Wesleyan  
University  
promotes food  
options on campus  
through posters  
and photographs.

*Policies to support and address nutritional concerns are evidenced through the use of notices and signs, such as the La Leche Lounge sign in Middletown Public Schools and the Nut Free Zone sign at the Middletown YMCA.*



## Active Living

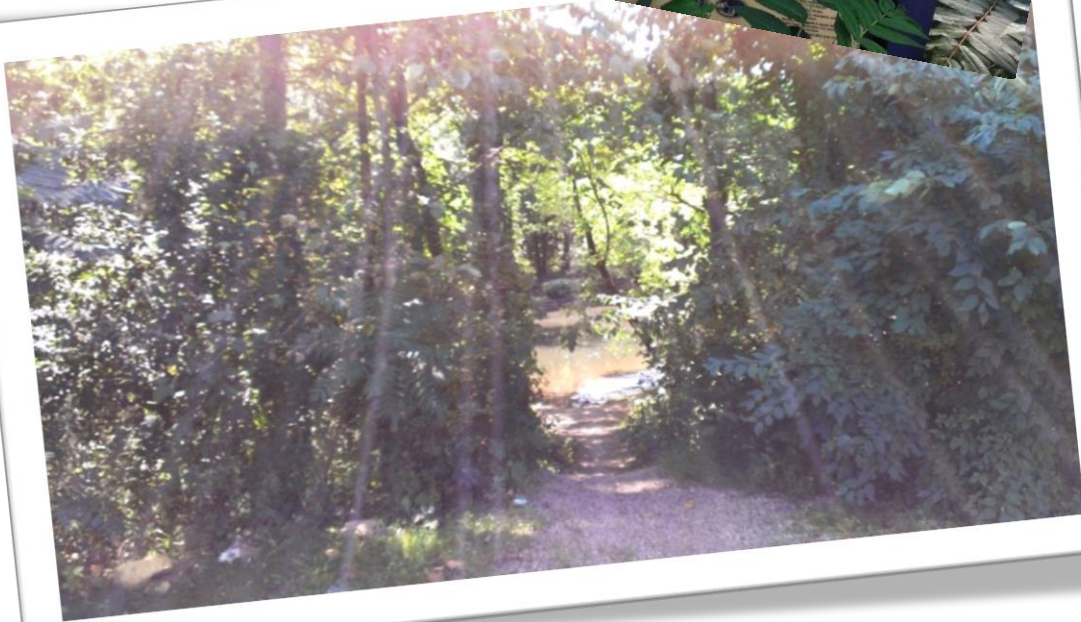


*Physical activity is encouraged through environmental assets such as multi-purpose trails, including the Air Line Trail State Park, which runs through several towns.*

*Signage and bicycle racks demonstrate policy and environmental support of bicycle riding.*

*"I found this little gem literally behind the parking lot at a Dunkin Donuts in Cromwell. There was a holder with laminated maps of the trail. When I told a woman I met with about it she said she would always see people drive along the main road (in front of Dunkin) with canoes and kayaks but never knew where they were going or that it was there. The woman works in Cromwell."*

*CoCW member who submitted the pictures of the River Trail*

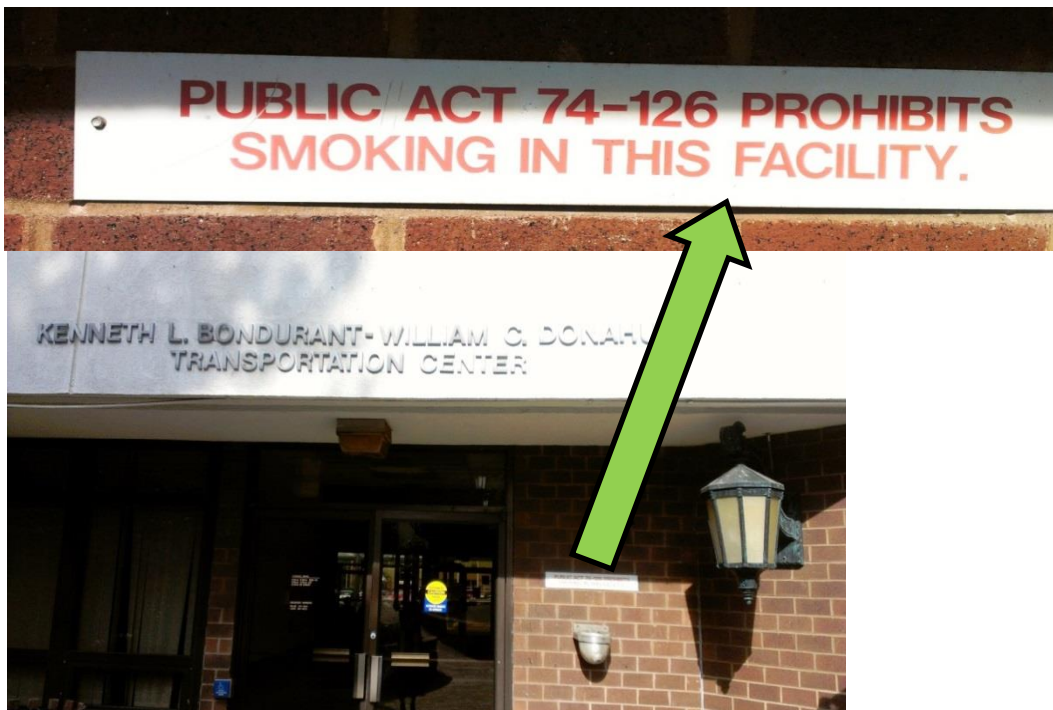


## Tobacco-Free Living



*No Smoking signage in front of the bus terminal on Main Street in Middletown. Policy and environmental support of this tobacco-free location are evidenced with the ashtray and attached no smoking sign.*

*Signage outside the Municipal Building in Middletown refers to the State Statute addressing smoking prohibition.*





*Local cigarette advertising sign*

## High Quality Clinical Preventive Services



*Flu vaccination clinic at  
Wesleyan University*

*Chatham Health District  
Public Health Nurse and  
support staff at flu clinic at  
community event.*



## Healthy and Safe Physical Environment

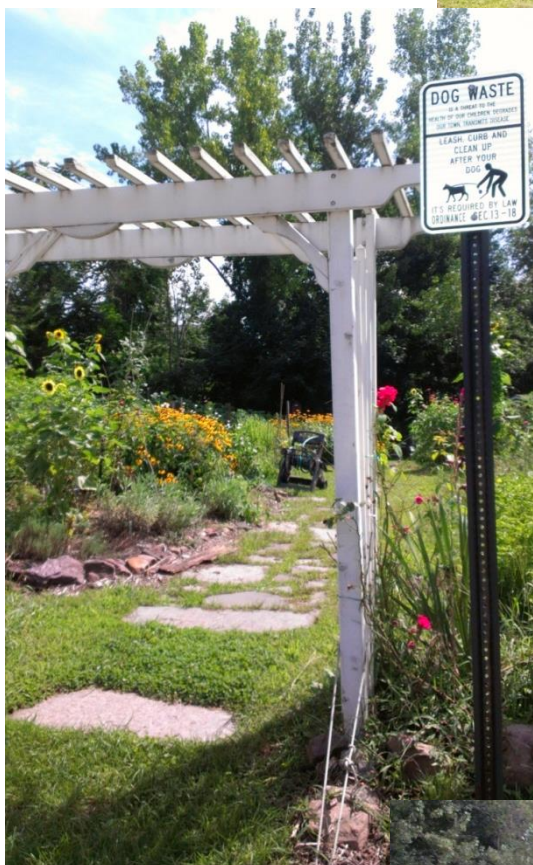
*Healthcare worker  
walking to work*

*She walks 30 minutes to  
work in an effort to stay  
healthy but voiced concern  
about her safety while  
walking. The road is  
notorious for potholes,  
uneven pavement, and no  
sidewalks. The road is on  
Middletown's Complete  
Streets and Bikeways  
Committee radar.*



## Social and Emotional Wellness





*Middletown's  
North End Action  
Team (NEAT)  
encourages positive  
neighborhood  
activities in order to  
improve the quality  
of life of residents  
in the North End  
neighborhood*





NEAT Garden party

Wesleyan University's  
Sleep Health  
Enhancement and  
Education Program





MIDDLESEX COUNTY  
Coalition on  
Community  
Wellness

Chatham Health District  
240 Middletown Avenue  
East Hampton, CT 06424  
(860) 365-0884  
[www.chathamhealth.org](http://www.chathamhealth.org)



**Middlesex Hospital  
Community Health Needs Assessment  
Implementation Strategy**

**Middletown, CT  
September 2013**

## **Executive Summary**

Continuous dedication to the communities we serve remains the hallmark of Middlesex Hospital's purpose. Our Community Benefit program enables us to live our commitment to improving the health and wellbeing of our community members by measuring health, creating programs that respond to identified need, and collaborating with community partners to develop meaningful and sustained health improvement.

The process of formally measuring the health of the community through a community health needs assessment allows for a comprehensive understanding of a community's health status as well as the needs, gaps and barriers to health and health services. Using this data, Middlesex Hospital has developed a prioritized implementation strategy to address identified need.

We are grateful to the Chatham Health District for inviting Middlesex Hospital to participate in a community health needs assessment through the Centers for Disease Control and Prevention Community Transformation Grant capacity-building project. We have enjoyed the collaboration with the Chatham Health District, CT River Area Health District, Essex Health Department, the Middletown, Durham and Cromwell Health Departments, and a wide array of Middlesex County community partners representing the sectors of public health, healthcare, social services, community services and education and look forward to continuing to work together to improve community health.

Middlesex Hospital is pleased to present our community health needs assessment implementation strategy, which outlines the process for prioritization and serves as the foundation for our Community Benefit strategic plan. Based on analysis of the community health needs assessment data, the Hospital has selected the following five priority areas:

1. **Mental Health** - increasing access to care
2. **Substance Abuse** - increasing access to care
3. **Older Adults** - increasing access to care
4. **MCCOCW Tobacco Free Living** - support and collaboration
5. **MCCOCW Clinical Preventive Services, Hypertension** - support and collaboration

Middlesex Hospital focuses on keeping our community healthy and strong. Whether this is accomplished through treatment in the Hospital or through community-based preventive care and education, our purpose has always been, and continues to be, to improve the health and wellbeing of the communities we serve.



Vincent G. Capece, Jr.  
President/CEO  
Middlesex Hospital

## **About Middlesex Hospital**

Middlesex Hospital, founded in 1904, is a not-for-profit, acute-care community hospital located in Middletown, CT. It is the only acute-care hospital in its service area, which includes Middlesex County and the lower Connecticut River Valley region. The Hospital is licensed for 275 beds and serves a total population of over 265,000 persons.

Middlesex Hospital is part of the Middlesex Health System, which employs 3,031 people and has 433 physicians on its medical staff. The Health System offers comprehensive community-based inpatient and emergency services as well as extensive outpatient care, including diagnostic, rehabilitation, behavioral health, disease management, radiology, laboratory, cancer care, homecare, wound care, surgical services, and a network of primary care offices. The Hospital has a long-standing commitment to teaching, as exemplified by its Family Medicine Residency Program which has been in existence for over 40 years. In addition to its Emergency Department in Middletown, the Health System operates two satellite medical centers in Essex and Marlborough that feature fully accredited, stand-alone emergency departments. Combined, the three locations serve the 3<sup>rd</sup> highest emergency patient volume of all CT hospitals. In 2012, the Health System had 14,158 inpatient discharges (FY), 642,083 outpatient visits (FY) and 92,456 combined emergency department visits (CY).

## **Our Purpose**

Middlesex Hospital's mission is to provide the safest, highest quality health care and the best experience possible for our community. Our vision is to be the clear first choice for medical care. Our core values are to pursue excellence, uphold honesty, cooperate and collaborate, support innovation and deliver compassionate care.

We have a longstanding commitment to community benefit and providing programs and services that meet identified need, most specifically for underserved and vulnerable populations. Our Community Benefit program exemplifies our core purpose of bettering the health of the community we serve by measuring community health need, creating programs that respond to need, and collaborating with partners to improve population health. We understand the importance of building evidence-based programs with measurable, benchmarked results and positive outcomes.

## **Measuring Community Health**

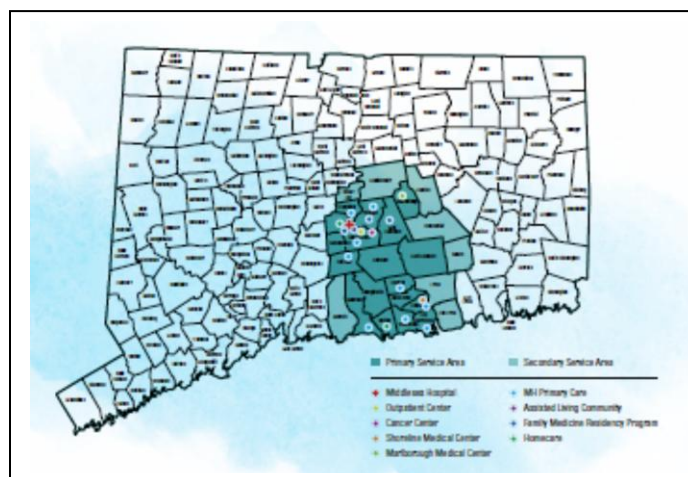
Prior to enactment of the Patient Protection and Affordable Care Act (the "Affordable Care Act") on March 23, 2010, Middlesex Hospital's Community Benefit policy required that we conduct a community health needs assessment at regular intervals with input from key community stakeholders, prioritize needs, and develop a plan that includes measurable goals and objectives. Our experience in conducting health needs assessments and focusing on access to care for identified priority areas enables us to live our community benefit philosophy of improving the health and wellbeing of the communities we serve.

Section 501(r) under the Affordable Care Act requires that tax-exempt hospitals complete a community health needs assessment once every three years with input from persons representing the broad interests of the community and adopt an implementation strategy to meet the community health needs identified in the assessment.<sup>1</sup>

The purpose of a community health needs assessment is to systematically collect and review the primary and secondary as well as the quantitative and qualitative data of a specific geographic area. Through a rigorous process, this data is carefully analyzed in order to understand a community's health status and identify the needs, gaps, access issues and barriers to both health and health services. The results of this process enable the prioritization of health problems and the development and execution of a community health implementation strategy.

### **Description of Community Served**

Middlesex Hospital's primary service area encompasses 24 municipalities, including the 15 towns of Middlesex County (Middletown, Cromwell, Portland, East Hampton, East Haddam, Haddam, Middlefield, Durham, Killingworth, Chester, Deep River, Essex, Old Saybrook, Westbrook, Clinton) and 9 towns on Middlesex County's periphery (Rocky Hill, Glastonbury, Hebron, Marlborough, Colchester, Salem, Lyme/Old Lyme, Madison, Guilford).



With a population of 165,676 (2010 Census), Middlesex County ranks 3<sup>rd</sup> of the eight CT counties in population size.<sup>2</sup> 72% of the county's residents live in urban areas with 28% living in rural environments.<sup>3</sup> The county's racial composition is 89.2% white, 4.6% Black or African American, 2.6% Asian Pacific, 0.2% Native American and 3.4% Other/Multi-Race, with an ethnic make-up of 5.1% Hispanic or Latino (2011).<sup>4</sup> Middletown is the largest municipality in the county, with a population of 47,648 (2010 Census) and demographically stands alone from the other towns within Middlesex County. Middletown's racial composition is 76% white, 12% Black or African American, 4% Asian Pacific, 0.1% Native American and 7.5% Other/Multi-Race, with an ethnic make-up of 6.8% Hispanic or Latino (2010).<sup>5</sup> Regarding the socioeconomic measures of income level, poverty rate, and education attainment: 1) the average annual household income is \$61,791 in Middletown and \$74,627 in Middlesex County (2010);<sup>5</sup> 2) the poverty rate

is 11.8% in Middletown and 5.8% in Middlesex County (2009);<sup>5</sup> and 3) 10.3% of adults age 25 or older in Middletown don't have a high school diploma compared to 7% in Middlesex County (2007-2011).<sup>6,7</sup>

### **Community Collaborative**

Middlesex Hospital is a member of the Middlesex County Coalition on Community Wellness (MCCOCW), an inclusive and representative partnership comprised of constituents from the sectors of public health, health care, social services, community services and education. The purpose of MCCOCW is to work collaboratively, through a multi-sectorial effort, as agents of change to improve the health and wellbeing of the communities it serves.

MCCOCW's goals are to:



- 1) work together to conduct a Middlesex County community health needs assessment
- 2) identify key issues that impact health and wellbeing
- 3) develop collaborative programs to meet identified need

### **County-Wide Effort**

Middlesex County was a recipient of Centers for Disease Control and Prevention (CDC) Community Transformation Grant (CTG) funding for projects that improve the health and wellbeing of communities, reduce chronic disease rates and reduce health disparities. The CT Department of Public Health (DPH) was one of 61 CTG national recipients and secured funding for capacity building to improve community health by laying a solid foundation for community prevention efforts. Connecticut DPH identified 5 of the 8 counties with populations of less than 500,000 to receive funding, one of which was Middlesex County. Deliverables included: strengthening of multi-sectorial, county-wide coalitions; completion of policy scans to identify best practices and gaps (i.e. policies, programs, infrastructure); and completion of a county-wide health needs assessment.

The Chatham Health District provided the oversight for the administration of the CTG capacity-building deliverables in Middlesex County in partnership with the CT River Area Health District, Essex Health Department, the Middletown, Durham and Cromwell Health Departments, Middlesex Hospital and a wide array of community partners representing the broad interests of Middlesex County. The Chatham Health District Director of Health and the Middlesex Hospital Manager of Community Benefit serve as co-chairs of the coalition.

The Middlesex County Coalition on Community Wellness (MCCOCW) is the advisory body for the CDC Community Transformation Grant. The coalition is made up of 75+ members from Middlesex County, including those who have special knowledge or expertise in public health; a complete listing of coalition members is included in the MCCOCW 2013 Community Health Needs Assessment. Those who are unable to attend the monthly meetings are kept informed

and engaged via e-mail communications as well as meeting minutes, agendas and pertinent documents. The monthly meetings include updates on standing items (community health needs assessment status, grant deliverables, etc.) as well as Member Spotlights, which allow MCCOCW members to give overviews of their programs and share best practices.

In addition to the full-member coalition, the MCCOCW has a steering committee that is responsible for timeline adherence and ensuring that all deliverables are met. The steering committee frequently convenes in between monthly meetings to hold planning sessions and status reviews.

#### **Middlesex County Coalition on Community Wellness Steering Committee**

<b>Name</b>	<b>Agency</b>
Thad King, MPH, Director of Health (co-chair MCCOCW)	Chatham Health District
Catherine Rees, MPH, Manager Community Benefit (co-chair MCCOCW)	Middlesex Hospital
Wendy Mis, Director of Community Health	Chatham Health District
Midge Malicki, MPH, CHES, Community Wellness Coordinator	Middletown Health Department
Susan Dubb, RN, AEMT, Public Health Nurse	Chatham Health District
Sherry Carlson, RN, BSN, Public Health Nurse	CT River Area Health District
Lisa Fasulo, MPH, RS, Director of Public Health	Essex Health Department
Mary Jane Engle, MPH (until 2012; retired Health Director)	CT River Area District of Health

#### **Methodology – Data Collection**

To define the scope and breadth of a community's health, MCCOCW's community health needs assessment (CNHA) used primary, secondary, qualitative and quantitative data collection. Data was collected using the following methodologies:

- CDC CHANGE Tool
- Key Informant Surveys
- Focus Groups
- PhotoVoice
- Health Equity Index (Connecticut Association of Directors of Health)
- Asset Mapping
- Available national, state and county data sets

The purpose of using a variety of data collection methods is to provide coalitions with data that sufficiently and accurately represents health status and health needs. Analysis of comprehensive data sources allows for prioritizing community health needs, defining areas of opportunity and creating sustainable, population-based strategies that improve community health and wellbeing.

**CDC CHANGE Tool:** The Community Health Assessment and Group Evaluation (CHANGE) Tool focuses on five sectors: 1) Health Care; 2) Worksite; 3) School; 4) Community at Large; and 5) Community Institution/Organization and five focus areas: 1) Healthy Eating & Active Living; 2) Tobacco-Free Living; 3) Clinical Preventive Services; 4) Healthy & Safe Environments; and 5)

Social & Emotional Wellness. As the CDC Community Transformation Grant is county-based, the CHANGE Tool data was collected using representative sampling of towns within Middlesex County. Middletown was selected as it demographically stands alone from the other towns within Middlesex County. The remaining towns of Cromwell, Killingworth, East Haddam and Old Saybrook were chosen based on Health Reference Groups, which identify towns as urban centers, manufacturing centers, diverse suburbs, wealthy suburbs, mill towns and rural towns.

Key Informant Surveys: MCCOCW developed a key informant interview survey in order to capture the knowledge, belief, and perspective of key stakeholders in Middlesex County who have in-depth understanding of health needs, areas of concern and social determinants of health. Key informant surveys representing the five CDC CHANGE Tool sectors were administered via face-to-face interviews, electronically and through mail. A total of 54 key informants completed surveys.

Key Informant Survey: What is your vision for a healthy community?

*"That there is easy access to all levels of health care for all citizens; no one is forgotten or left behind"*

*"The saying, "it takes a village" could never be overused. We need to be sensitive to our overwhelming diversities, cultural issues, socio-economic imbalance, day to day stressors that overwhelm people affecting their ability to function well"*

*"Everyone is housed, has access to the care they desire/need, has enough food for their families, are employed if they are able...and has a social network of friends and family members where they feel connected and loved"*

*"Asking, "what can we do together as a community?" because together as a community, what a power we will be"*

Focus Groups: MCCOCW developed focus group questions specific to the five CDC CHANGE Tool sectors and invited representative community members and stakeholders to attend sector-specific sessions with facilitator-directed discussion. Three focus groups were conducted.

PhotoVoice: Coalition members were asked to contribute visual representations of the CHANGE Tool's five focus areas using PhotoVoice, socially engaged photography where the community point of view is portrayed through photographs.

Health Equity Index: Secondary data was collected using the Health Equity Index (HEI), an electronic tool developed by the Connecticut Association of Directors of Health. The HEI uses several types of data to provide community-specific scores on seven social determinants of health and thirteen health outcomes, the correlations between them, and Geographic Information System maps that illustrate the community-specific scores. Scores range from one to ten, with ten being the best possible score and one being the lowest.<sup>8</sup>

Asset Mapping: Asset mapping provides an inventory of community resources that helps identify strengths and opportunities for capacity building. Once priority strategies are selected, the resources uncovered during the asset mapping process can help to be solutions to possible deficits within the community.

### **Methodology – Data Analysis**

Middlesex County Coalition on Community Wellness members were invited to join one of five sector work groups (Healthcare, Worksite, School, Community at Large, and Community Institution/Organization). Each work group was tasked with reviewing sector-specific quantitative and qualitative data for emerging/common themes.

The individual work groups met for several months, culminating with a large All-Sector work group meeting on March 28, 2013. Prior to the All-Sector meeting, each sector work group identified key themes from their respective data sources; these overviews were distributed to the attendees of the All-Sector meeting so that all who were present were reviewing the same data sets. Participants were asked to divide into groups and review each data set for identification of the most common themes across all sectors. Collectively, the members present provided foundational work by refining the data for future review, analysis, discussion and prioritization by the full MCCOCW.

### **Methodology – Prioritization**

The Middlesex County Coalition on Community Wellness conducted priority setting based on the CDC Community Transformation Grant focus areas and Middlesex Hospital conducted priority setting from its Community Benefit perspective.

Middlesex County Coalition on Community Wellness: On April 9, 2013, the MCCOCW held a prioritization and implementation planning meeting. The original sector-specific data sets that were reviewed by the All-Sector work group meeting were compiled into a resource document and distributed to the full MCCOCW via e-mail and at the April 9<sup>th</sup> meeting. The MCCOCW Co-Chairs presented the findings and themes from all collected data sources and the sector-specific work group reviews. Prioritization facilitation was conducted by the Executive Director of the Connecticut Association of Directors of Health. During the breakout session, committee members were asked to sit at one of the five CHANGE Tool focus area tables (Healthy Eating & Active Living; Tobacco-Free Living; Clinical Preventive Services; Healthy & Safe Environments; and Social & Emotional Wellness). Each breakout group was asked to review the data synopses for the respective focus area, develop 3 strategies, and assess each strategy for:

- |                                 |   |
|---------------------------------|---|
| ▪ Feasibility                   | ▪ Champion person or organization               |
| ▪ Magnitude of potential impact | ▪ Data to collect or track                      |
| ▪ Cost                          | ▪ Short-term or long-term results               |
| ▪ Resources needed              | ▪ Benchmarks to evaluate progress               |
| ▪ Existing assets               | ▪ Readiness                                     |
| ▪ Stakeholders                  | ▪ Settings/sectors available for implementation |

Breakout group members then ranked their respective focus area strategies by readiness and importance on a scale of one to three and presented a summary of findings to the larger group.

The Middlesex County Coalition on Community Wellness has selected the following two CDC Community Transformation Grant strategic directions:

**1) Tobacco Free Living: Prevent and Reduce Tobacco Use through Tobacco Free Policies in Public Parks**

Based on Behavioral Risk Factor System (BRFSS) findings, Middlesex County ranked sixth among the eight CT counties in smoking prevalence, with a smoking rate of 16%, which mirrors the 16% smoking rate for the state of CT. The proposed strategy is one of the CDC-Recommended Evidence- and Practice-Based Strategies and is included as a recommendation in the U.S. National Prevention Strategy.<sup>2</sup>

**2) Clinical Preventive Services: Implement a Clinical Preventive Protocol for Management of Individuals who are Identified with Hypertension**

Hypertension is a prevalent condition in Middlesex County residents which contributes to significant adverse health outcomes including premature death, heart attack, renal insufficiency and stroke. Individuals who experience uncontrolled blood pressure will be identified, educated and engaged in care management with the goal of blood pressure control.<sup>2</sup>

Middlesex Hospital: Middlesex Hospital's last community health needs assessment (CHNA) priority areas were the basis of its Community Benefit annual goals, which include specific goal, rationale, and measure(s) of success. The priority areas selected by Middlesex Hospital for the 2013 CHNA will continue to be the foundation for its Community Benefit annual goals for the next three years, at which point another CHNA will need to be conducted to stay within compliance of the Affordable Care Act, Section 501(r). To select its priority areas from the 2013 CHNA, Middlesex Hospital's Community Benefit Steering Committee, along with members of its executive staff, reviewed the quantitative and qualitative results and themes of the following data sources, analysis and strategies:

- Health Equity Index
- Key Informant Surveys – Healthcare Sector
- Focus Groups – Healthcare Sector
- CDC CHANGE Tool
- Available national, state and county data sets
- MCCOCW Prioritization Analysis
- MCCOCW CDC Community Transformation Grant Priority Strategies

Qualitative analysis of the healthcare sector key informant surveys and focus group identified themes that occurred with the highest frequency, which were supported by the quantitative data within the CHNA. Top areas of concern were **mental health**, **substance abuse** and **older**

**adults**, including availability of services, access, and coordination of care. These priority areas are consistent with the findings of Middlesex Hospital's last community health needs assessment and have been past community benefit focus areas. The Hospital's Community Benefit Steering Committee and members of its executive staff reviewed 1) the vulnerability of the target populations; 2) the breadth of people affected; 3) problem severity; and 4) the Hospital's ability to make significant and lasting improvements. Given the positive impacts that have been made in these three priority areas due to the Hospital's community benefit organizational commitment, the Hospital has elected to continue to build upon earlier successes by continuing to focus on these vulnerable populations and areas of identified need.

### **Community Health Needs Assessment Priority Areas to be Addressed by Middlesex Hospital**

Through the findings of the MCCOCW 2013 Community Health Needs Assessment, Middlesex Hospital will engage in five initiatives, three of which the Hospital will take a leadership role and two of which the Hospital will take a supportive role. Oversight of Middlesex Hospital's 2013 CHNA Implementation Strategy will reside under Community Benefit, where Hospital staff will collaborate with community agencies whenever possible and build evidence-based programs, where needed, with measurable, benchmarked results and the goal of achieving positive outcomes. The Hospital's priority areas focus on the needs of the following identified vulnerable populations:

#### **Priority Area #1: Mental Health – access and care coordination**

**Rationale:** The MCCOCW 2013 Community Health Needs Assessment identified mental health emergency department treatment and hospitalizations to be an issue in Middletown. In addition, mental health concerns were identified by the healthcare sector key informant surveys and focus group to be a top health priority for Middlesex County with regard to access, available services and coordination of care.

**Goal:** To take a leadership role in increasing access to care through resource identification, care coordination and interagency collaboration for community members experiencing mental illness.

#### **Priority Area #2: Substance Abuse – access and care coordination**

**Rationale:** The MCCOCW 2013 Community Health Needs Assessment identified alcohol related deaths to be an issue in every town in Middlesex County. In addition, substance abuse concerns were identified by the healthcare sector key informant surveys and focus group to be a top health priority with regard to access, available services and coordination of care.

**Goal:** To take a leadership role in increasing access to care through resource identification, care coordination and interagency collaboration for community members experiencing substance abuse.

**Priority Area #3: Older Adults – access and care coordination**

**Rationale:** Middlesex County has a higher distribution of residents over the age of 65 (15.1%) when compared to the state (14.2%).<sup>2</sup> Similar to nationwide trends, Middlesex County is experiencing a dramatic demographic shift in the older adult population. In addition, geriatric concerns were identified by the healthcare sector key informant surveys and focus group with regard to access, available services, coordination of care, and ability to meet the needs of a growing older adult population.

**Goal:** To take a leadership role in increasing access to care through resource identification, care coordination and interagency collaboration for older adults living in Middlesex County.

**Priority Area #4: MCCOCW Tobacco Free Living – support and collaboration**

**Rationale:** The MCCOCW 2013 Community Health Needs Assessment identified that Middlesex County ranked sixth among the eight CT counties in smoking prevalence, with a smoking rate of 16%, which mirrors the 16% smoking rate for the state of CT. A CDC Community Transformation Grant focus area is Tobacco-Free Living.

**Goal:** To be a supportive partner to and collaborate with MCCOCW on its Tobacco Free Living priority area.

**Priority Area #5: MCCOCW Clinical Preventive Services, Hypertension – support and collaboration**

**Rationale:** The MCCOCW 2013 Community Health Needs Assessment identified hypertension as a prevalent condition in Middlesex County. A CDC Community Transformation Grant focus area is Clinical Preventive Services.

**Goal:** To be a supportive partner to and collaborate with MCCOCW on its Clinical Preventive Services, Hypertension priority area.

**Adoption of the Implementation Strategy**

The Middlesex Hospital Board of Directors reviewed the Hospital's Community Benefit Community Health Needs Assessment Implementation Strategy for addressing five priority areas identified in the MCCOCW 2013 Community Health Needs Assessment and approved the strategy on September 20, 2013.

### **Community Health Needs Not Addressed:**

Middlesex Hospital recognizes that it cannot focus on all the health needs identified in the MCCOCW 2013 Community Health Needs Assessment. Given the significant resources and in-kind time needed to address health priority areas uncovered by a community health needs assessment, the Hospital engaged in a thorough process of data review and discussion to identify the areas of greatest need, impact potential and feasibility.

The MCCOCW 2013 Community Health Needs Assessment will be widely disseminated to Middlesex County community agencies with the hope that the study will be used to initiate focus on CHNA findings that are outside the scope of the Hospital's selected priority areas. As many local community based organizations are dedicated to meeting the needs of county residents, the Hospital realizes that these organizations may be better suited to take a leadership role in improving certain health outcomes. As with our previous community health needs assessment, the Hospital will continue to be a willing partner, when able, for initiatives not related to its selected CHNA priority areas.

In addition, the MCCOCW 2013 Community Health Needs Assessment will be disseminated among Middlesex Hospital directors, managers, supervisors and medical staff so that internal departments are able to use the findings to work collaboratively with community partners, when able, to improve the health and wellbeing of specific populations.

### **Sources**

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2. Chatham Health District, *Middlesex County Coalition on Community Wellness Community Health Needs Assessment*, Chatham Health District, East Hampton, CT; July 2013
3. [http://www.city-data.com/county/Middlesex\\_County-CT.html](http://www.city-data.com/county/Middlesex_County-CT.html)
4. Connecticut Economic Resource Center, Inc., CERC Region Profile 2012, Middlesex County; June, 2012, [www.cerc.com](http://www.cerc.com)
5. Connecticut Economic Resource Center, Inc., CERC Town Profile 2011, Middletown, CT; May, 2011, [www.cerc.com](http://www.cerc.com)
6. <http://quickfacts.census.gov/qfd/states/09/0947290.html>
7. <http://quickfacts.census.gov/qfd/states/09/09007.html>
8. Connecticut Association of Directors of Health , Health Equity Index, <http://www.cadh.org/health-equity/health-equity-index.html>