Community Health Assessment
of
North Central Massachusetts

The Community Health Network of North Central Massachusetts (CHNA 9)
and **The Joint Coalition on Health of North Central Massachusetts**
In Collaboration with the **Minority Coalition of North Central Massachusetts**

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Our Collaborative Model for a Healthy Community

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The qualitative work was completed with the combined efforts of the Minority Coalition of North Central Massachusetts, the Spanish American Center, Cleghorn Neighborhood Center, Heywood Hospital, HealthAlliance Hospital, Clinton Hospital, WHEAT, Three Pyramids, Beautiful Gate Church, New Hope Community Church, Twin Cities CDC, Gardner CDC, Memorial Congregational Church, Montachusett Opportunity Council and many other agencies and individuals.

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Brief Overview and Key Themes

The enclosed report is voluminous and contains a great deal of data and qualitative information about the health status of North Central Massachusetts. The report contains several key themes throughout including:

- **Health Disparities and Social Determinants of Health** are very real issues and concerns for the North Central Massachusetts region. While quantitative data is limited in its scope and ability to demonstrate the breadth of the concern, qualitative information obtained through focus groups and interviews highlights the extraordinary challenges faced by racial and ethnic minorities and other populations which contribute to a poorer health status and quality of life.

- **The Economy** has exacerbated many issues associated with health and access to care – affecting everything from housing, food and healthcare to the stressors of job loss, reductions in hours and a sense of hopelessness that all contribute to poor mental and physical health and risk of substance abuse and domestic violence.

- **Depression and Suicide** are significant concerns for the North Central Massachusetts region.

- **Barriers to Optimal Health Status** include, among others: Social and cultural isolation; Lack of adequate transportation resources; Difficulty navigating the complexities of the healthcare and health insurance systems; Difficulty affording the out-of-pocket costs of healthcare, and Language and cultural barriers.

EXECUTIVE SUMMARY

I. Introduction

This Community Health Assessment of North Central Massachusetts is a joint effort between the Massachusetts Department of Public Health's Community Health Network Area of North Central Massachusetts (CHNA 9) and the Joint Coalition on Health (JCOH). The assessment is designed to provide information and analyses relative to the health status, issues, concerns, and assets of the North Central Region of Massachusetts. The assessment includes the 27 cities and towns covered by CHNA 9, including the cities of Fitchburg, Leominster, Gardner, and the towns of Ashburnham, Ashby, Ayer, Barre, Berlin, Bolton, Clinton, Groton, Hardwick, Harvard, Hubbardston, Lancaster, Lunenburg, New Braintree, Oakham, Pepperell, Princeton, Rutland, Shirley, Sterling, Templeton, Townsend, Westminster, and Winchendon. Eleven of these cities and towns (Fitchburg, Leominster, Gardner, Ashburnham, Ashby, Hubbardston, Lunenburg, Templeton, Townsend, Westminster, and Winchendon) are also within the service area of the JCOH.

CHNA 9 began as a Massachusetts Department of Public Health (MDPH) initiative in 1994 with the goal of continually improving the health status of the region by creating partnerships among MDPH, service providers, local health departments, consumers, community members, the business sector, neighborhood coalitions, faith based organizations, social service agencies, community health centers, and hospitals. CHNA 9's focus is on health equity and addressing and eliminating health disparities. CHNA 9 endorses the Healthy Communities Principles with its broad definition of health encompassing not just the absence of disease, but the full range of quality of life issues. CHNA 9 advocates that "community" includes diverse resident participation, particularly those disproportionately affected by disease and negatively impacted by the social determinants of health.

The JCOH was formed in 1998 to continue the efforts of area health coalitions in addressing priority issues raised in community health assessments. The JCOH is a group of committed individuals and organizations working collaboratively as catalysts for change and advocates for the underserved to improve the health and well-being of everyone in North Central Massachusetts. The JCOH has a history of leadership and action in tackling challenging issues affecting the health and well-being of the North Central MA region. Past achievements of the JCOH include:

- The founding of a federally qualified community health center organization, Community Health Connections, Inc.;
- The expansion of local dental services for low-income youth and adults through the Oral Health Initiative of North Central Massachusetts, and
- The establishment of a school-based health center in Winchendon with behavioral health services provided through The Winchendon Project.

As evidenced above, many important initiatives have resulted from past community health assessments. One unique aspect of the current assessment is the level of attention paid to minority health issues. The joint CHNA/JCOH steering committee responsible for this community health assessment made an intentional decision to focus on health disparities. Great care was taken to include members of the minority community in the planning, data gathering, and assessment processes. In addition, those responsible for gathering qualitative data made every effort to ensure racial/ethnic, socioeconomic, and geographic diversity in the composition of focus groups and with interview participants. The result is a much more comprehensive picture of the health status, issues, concerns, and assets of North Central Massachusetts.

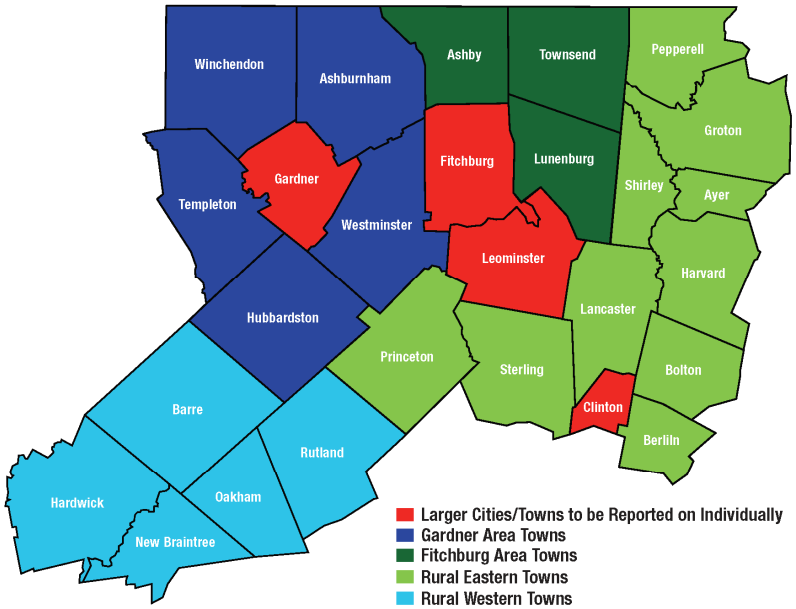
Another key feature of this community health assessment is the amount of collaboration that has gone into gathering and analyzing the data presented herein. This assessment has been a joint effort of the JCOH and CHNA 9. Funding has been provided by Heywood Hospital through the Determination of Need for the new Watkins Center for Emergency and Acute Care, a $37.6 million expansion project. In addition, support for a portion of the qualitative section of this assessment was also provided by the Boston Public Health Commission's REACH CEED Black Legacy grant. The work was completed with the combined efforts of the Minority Coalition of North Central Massachusetts, the Spanish American Center, Cleghorn Neighborhood Center, Heywood Hospital, HealthAlliance Hospital, Clinton Hospital, WHEAT, Three Pyramids, Beautiful Gate Church, New Hope Community Church, Twin Cities CDC, Gardner CDC, Memorial Congregational Church, CM AHEC, Montachusett Opportunity Council and many other agencies and individuals. Together, these entities have capitalized on their complementary expertise and have produced a document that can be used by stakeholders from every sector of the community to better the health and welfare of residents of North Central Massachusetts.

II. Methodology

a. Study Area

The assessment includes the 27 cities and towns covered by the CHNA 9. Eleven of these cities and towns (Fitchburg, Leominster, Gardner, Ashburnham, Ashby, Hubbardston, Lunenburg, Templeton, Townsend, Westminster, and Winchendon) are also within the service area of the JCOH. Data in this report are presented individually for the cities of Fitchburg, Gardner and Leominster, and the town of Clinton. The remaining smaller towns in CHNA 9 are combined into reporting regions to obtain meaningful data. These reporting regions are consistent with those reported in previous community health assessments to facilitate comparisons over time. The following map represents the Study Area and highlights the various reporting categories utilized in this assessment.

CHNA 9 Service Area with Reporting Regions



This assessment includes discussions of any differences between the JCOH service area, the overall CHNA 9 service area and the CHNA 9 service area without the JCOH cities/towns (CHNA Less JCOH). Comparisons are also made to Massachusetts as a whole and to Healthy People 2010 goals.

b. Data Sources and Analyses

Both quantitative and qualitative data were collected for this community health assessment. All data were gathered systematically utilizing the following standards or principles which guided the methodologies and source selections:

1. Availability of multiple years of data on study elements;
2. Specificity of data to the Study Area communities;
3. Appropriateness of data collection methodologies to the data source;
4. Broad participation among the stakeholder populations, and
5. Broad range of input from qualitative and quantitative sources.

The majority of the quantitative data collected for this assessment came from the Massachusetts Community Health Information Profile (MassCHIP). Other sources include: the Massachusetts Department of Public Health; the United States Census Bureau; the Massachusetts Department of Workforce Development; the Massachusetts Department of Elementary and Secondary Education; and the Massachusetts Behavioral Health Partnership. Whenever possible, three years of data were used for each measure and, when feasible, data is provided for individual towns.

The quantitative data was analyzed and reported by Maureen DeFuria. Maureen worked with Heywood Hospital and the JCOH on a William Van Fassen Community Service Sabbatical from Blue Cross Blue Shield of Massachusetts for the period of September 2008 through February 2009. She also contracted with Heywood Hospital through an Essential Provider Trust Fund Grant for the period of March through June 2009, and then for an additional period through the funds provided by Heywood Hospital to the CHNA 9/JCOH Collaborative funding account. During that time, she gathered, analyzed and reported quantitative data for this report.

Qualitative data was elicited to enhance, clarify, and add “community voices” and real life experiences to the quantitative data included in this report. Qualitative data also provides a lens into current conditions – economic and cultural – which quantitative data cannot due to the lags between data collection, reporting, and retrieval. For example, the qualitative data presented here strongly reflects the economic crisis which occurred during the qualitative data collection process but after much of the quantitative data had already been collected and reported.

Qualitative data for this assessment was gathered via focus groups with community members and through interviews with community members and community leaders. Focus groups and interviews were conducted between the spring of 2009 and the spring of 2010. Those responsible for gathering qualitative data made every effort to ensure racial/ethnic, socioeconomic, and geographic diversity in the composition of focus groups and interview participants.

Focus group notes and interviews were analyzed by Lynne Man and Emily MacRae Enterprises utilizing manual qualitative content analysis and were reviewed for consistency by Joanne Calista of the Central Massachusetts Area Health Education Center, Inc (CM AHEC). Participant feedback was only reported when expressed multiple times in the data (**i.e., descriptions and quotations**

are not recorded in this report if expressed solely by one participant). The findings of the focus groups are synthesized and are recorded within the body of this report.

III. Context:

a. Economic Crisis

One environmental factor that has had an overriding impact on many aspects of health status and social determinants during the period this study was conducted is the collapse of the stock market in 2008 and the associated mortgage and housing crises, followed by a deep recession which lingers to this day.

The impact of this economic crisis includes high unemployment rates, reduced state and federal funding for organizations and programs serving those in need, reduced funding for cities and towns resulting in job loss and service reductions, and a significant reduction in private and foundation philanthropy which is often relied upon to reduce the impact of other reductions in funding for non-profit organizations.

Some of the resulting effects of the economic crisis have been demonstrated in higher depression and suicide rates, increased reports of substance and alcohol abuse, domestic violence and child abuse, higher levels of crime (which create additional stress for victims and affected neighborhood residents), and greater stress caused by job loss and reductions in hours. For members of ethnic and racial minority populations, these stresses are compounded by cultural and social isolation, language barriers, and racism.

In addition, while the Commonwealth of Massachusetts has taken the positive and noble step of attempting to insure everyone, the cost of providing that health insurance and the cost to individuals not qualifying for MassHealth are an unmanageable burden for many. Rising health insurance costs are also a deterring factor for small business growth which further delays our economic recovery.

Efforts to address economic stability and job growth must occur at the same time as efforts to expand the safety net and services for the most vulnerable.

b. Health Disparities and Social Determinants of Health

> "Health equity means that everyone has a fair opportunity to live a long and healthy life and includes the opportunity for everyone to attain their full health potential. Health equity requires addressing social determinants of health and eliminating health disparities.
>
> Inequity refers to differences which are unnecessary and avoidable and are considered unfair and unjust. Addressing social determinants that contribute to health inequity is an issue of social justice. It requires addressing interpersonal, institutional, societal and internalized forms of racism, sexism, classism, homophobia and other forms of bias and discrimination. It means striving toward a [community] where all individuals and families have a high level of health services, education, housing and other resources that protect, promote, and preserve their health, regardless of who they are and/or where they live.

> Health disparities are differences in the incidence, prevalence, burden and mortality…that exist among population groups based on factors including but not limited to: age, class, culture, education, ethnicity, geographic location, gender identity or expression, income, language, national origin, physical or mental disability, race, religion, sex, sexual orientation, socioeconomic status, wealth or other social conditions…Racism has an independent influence on all of the social determinants of health…Racism in and of itself has a detrimental impact on health, race and other factors are present in the individuals and populations simultaneously and often interact in a synergistic manner."[1]
>
> Differences in the incidence and prevalence of health conditions and health status between groups are commonly referred to as health disparities. Most health disparities affect groups marginalized because of socioeconomic status, race/ethnicity, sexual orientation, gender, disability status, geographic location, or some combination of these. People in such groups not only experience worse health but also tend to have less access to the social determinants or conditions (e.g., healthy food, good housing, food education, safe neighborhoods, freedom from racism and other forms of discrimination) that support health…Health equity then, as understood in public health literature and practice, is when everyone has the opportunity to 'attain their full health potential' and no one is 'disadvantaged from achieving this potential because of their social position or other socially determined circumstance.'"[2]

Addressing the issues of health disparities in North Central Massachusetts is a focal point of this assessment. Having the capacity to respond effectively to the critical public health needs of these communities begins with an accurate assessment of those needs. Quantitative data is presented with delineations by race and ethnicity wherever that information was available. Qualitative data from minority populations was gathered and analyzed under the direction of the minority community leaders of North Central Massachusetts. All focus groups and interviews were conducted in the primary language of the participants and facilitators of each group were cultural brokers and leaders from their respective communities. The groups were: Latino; African American; Asian (further delineated as Lao and Hmong), and Brazilian. The groups categorized as "General" were 95% non Hispanic Caucasian.

Health Issues and Assets by Population

Summary of Findings from Focus Groups and Interviews

The summary that follows is a brief account of the data collected from 18 focus groups and over 18 interviews. The first round of focus groups was undertaken with funding from the CHNA 9 and Boston Public Health Commission's REACH CEED Black Legacy grant. The second round of focus groups was funded by Heywood Hospital through the Determination of Need for the new Watkins Center for Emergency and Acute Care. The work was completed with the combined efforts of the Minority Coalition of North Central Massachusetts, the Central Massachusetts Area Health

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[1] The Massachusetts Comprehensive Cancer Advisory Committee, Health Disparities Policy Statement. February, 2011.
[2] Brennan Ramirez LK, Baker, EA, & Melzler, M. Promoting Health Equity: A Resource to Help Communities Address Social Determinants of Health, Atlanta: U. S Department of Health & Human Services, Centers for Disease Control and Prevention; 2008.

Education Center, Inc., Emily MacRae Enterprises, The Spanish American Center, Cleghorn Neighborhood Center, Heywood Hospital, HealthAlliance Hospital, Clinton Hospital, WHEAT, Three Pyramids, Beautiful Gate Church, New Hope Community Church, Twin Cities CDC, Gardner CDC, Memorial Congregational Church, Montachusett Opportunity Council, and many other agencies and individuals. Qualitative data was analyzed by Lynne Man, Joanne Calista, and Emily MacRae.

What follows is a sample of the collective information that is reflective of repeated themes. The quotes that follow are statements that were made by several individuals. The findings indicate that there were culturally specific views, concerns, barriers, and resources stated by the residents of North Central Massachusetts. The data was collected and analyzed by cultural group so that those differences would not be lost.

Common Themes for All Groups

There were several common themes that crossed both cultural and geographic populations. Including the following:

Cost of Accessing and Utilizing Health Care

Consistently, all groups pointed to the cost of healthcare as a barrier to seeking treatment. Participants frequently complained about “co-pays” and the total monthly cost for healthcare (i.e., co-pays, premiums, medications, childcare, and transportation). Some reported that these costs reached $600 or more for one month. They also noted that insufficient/limited insurance coverage was a barrier to healthcare. For those without health insurance, out-of-pocket costs often prohibited access to care.

Unemployment and Poverty

Unemployment and the fear of potential job loss also prevented many participants from seeking medical attention. Several people cited the inability to take time off from work to attend to their personal health for fear that it would place their jobs in jeopardy. With respect to poverty, participants reported poor living conditions (i.e., substandard housing and poor neighborhoods) and concerns for safety, including the presence of drugs and violence.

Transportation

The lack and cost of transportation were also major issues. Mothers complained that they had to push baby carriages in inclement weather in order to make appointments and people reported getting sick while walking to the doctor’s office, waiting for hours to catch a bus, and not having money for gas to drive to another city to see a specialist. People noted the limitations of the public transportation system including limited schedules and routes.

Culture

Among the African American, Latino and Asian groups, culture – in varying manifestations – was cited as a barrier to health care. African Americans, while not confronting language issues, nevertheless cited poor communication between patients and providers, and also referenced racism in the form of stereotyping and discrimination.

The lack of cultural competence was mentioned across all three groups who felt that they could not explain their illness to providers who, in turn, did not have an understanding of their needs or beliefs. These experiences led to participants describing an atmosphere of fear and distrust in their interactions with healthcare providers and other public and private institutions. Hopelessness was also referenced among African Americans and Latinos.

Mental Health, Depression, and Stress

All groups indicated mental health concerns (identified as either depression, stress, refugee trauma, or a combination of the above). Apart from the refugee-specific experience, the mental health concerns articulated were often connected to other socio-economic factors contributing to poor mental health. Participants reported that the current economy has led to unemployment or the fear of becoming unemployed which, then, in turn, creates additional stress when they feel they cannot afford to take care of their health needs. As one young women stated "I worry about my health and how I am going to pay my bills. This keeps me awake at night. If I can't sleep I get sick." Many people shared a feeling of hopelessness.

Health Related Information

There was an overriding theme of a need for better and more information. Basic medical information, information about the medical system, and less complicated insurance information was requested.

Social and Cultural Isolation

People living in rural areas, the elderly, Latinos, African Americans, Brazilians, and Asians all spoke about feelings of isolation. Brazilians, Latinos, and Asians also spoke about linguistic isolation. African Americans expressed that they feel isolated as soon as they leave the church. Asians expressed feeling extremely isolated. They stated that they felt isolated as soon as they left their homes.

Wellness

When asked "what does wellness mean to you?" Most answered "a happy family, a safe place to live, a good job, enough healthy food, a healthy body that does not cause pain when I move, and good transportation."

Themes by Cultural Group

African American

African Americans make up a smaller percentage of the total population throughout the Study Area. Many referenced a feeling of having their minority status reinforced on a daily basis. Noted was the lack of African American cultural resources in the area accompanied by the lack of African Americans either as a presence in the media, in government, or on the streets. Cultural isolation, racism and providers' lack of cultural competency were seen as major barriers to healthcare. Racism and discrimination in employment and in the schools were seen as primary issues regarding the social determinants of health. Church was seen as the primary resource for overcoming barriers. Church was mentioned as a resource twenty-seven times in the five African American focus groups.

Note:
The authors of this study have chosen to use the term African American (versus Black) when referring to the race of focus group participants and interviewees, as participants self-identified as African American. In contrast, in the quantitative sections of the assessment, one will see the term "Black." This is the term used by the U.S. Census Bureau and other major data sources when describing race.

General Population *(focus groups with 5% or less minority participation)*

The General Population identified the costs of accessing health care, transportation, difficulty in reaching doctors, and the need to take time off from work to attend medical appointments as the greatest barriers to health care. Participant identified drugs, violence, commuting long distances and the high school dropout rate as social determinants affecting health and well being. This group identified the greatest number of community based, governmental, and healthcare resources.

Latino

Latino participants identified language ("I know we have to speak English but it's very difficult to learn…it's complicated."), fear of discrimination from providers (because of language, or lack of documentation), lack of transportation, and lack of employment as major barriers to health care. Social determinants of health were affected by job loss, job hazards and raids [U.S. Immigration and Customs Enforcement (ICE)]. They also feared discrimination in employment, health care and schools. Spanish speaking community centers were identified as the primary resource for overcoming barriers.

Note: The authors of this study have chosen to use the term "Latino" (versus Hispanic) when referring to focus group participants and interviewees, as participants self-identified as Latino (or by their specific country of origin). Further discussion of the use of the term Latino is found in the **Sociodemographics** section of the main body of this assessment. In contrast, in the quantitative sections of the assessment, one will see the term "Hispanic." This is the term used by the U.S. Census Bureau and other major data sources.

Asian **(Lao and Hmong)**

An extreme sense of isolation characterized this group. Newcomer status, culture, and language barriers contributed to the creation of ethnic enclaves which separate this community from the mainstream. Several participants stated that "no one cared about them" and that there were no institutions that served them. Language, providers' lack of cultural understanding and complications in transitioning from refugee status were seen as barriers to healthcare. Social determinants of health were impacted by lack of job safety and unsafe neighborhoods. Members of this group were also affected by toxins used in their work in nail salons, laundries, agriculture and factories.

Brazilian

Brazilian participants identified the need to work extremely long hours and numerous jobs, not having enough time for appointments, and language as the predominant barriers to accessing health care. Social determinants of health were impacted by isolation from families in Brazil, a lack

of documentation, and not having enough money to buy healthy food. The outreach workers at Community Health Connections were seen as the greatest resource for this community.

NOTE: This assessment recognizes the challenges of data collection in regard to the categorization of race and ethnicity. The authors of this study have chosen to discuss the quantitative input from the Brazilian community separately from the Latino community, while although these groups are often categorized together in some data sources, in this assessment, Brazilian individuals self identified as "Brazilian" rather than as Latino. Furthermore, this study, as noted in the 2007 Gastón Institute report[3], recognizes the growing Brazilian community in Massachusetts, and in the region, and views the efforts of this assessment as a part of a more extensive exploration of the needs of this population. Furthermore, this study recognizes the limitations of the quantitative data of describing the Brazilian community as Brazilian individuals are often undercounted and are inconsistently categorized in state and national data sources.

IV. Key Findings

The 27 cities and towns that make up North Central Massachusetts are extremely diverse. While the cities and towns in this report are combined into one Study Area, they politically fall into separate counties – Middlesex and Worcester – a reflection of the many dichotomies that exist in the region. Other distinctions may be broadly categorized as the differences between urban and rural settings, Eastern and Western geographies and orientations, and affluent and economically struggling communities.

a. Sociodemographics

Overall Study Area Population:

The largest municipalities in the Study Area are the cities of Leominster (42,120), Fitchburg (40,514), and Gardner (20,995). The smallest towns are New Braintree (1,090), Oakham (1,892), and Hardwick (2,655).

- In the beginning of the decade, between 2000 and 2005, the population of the Study Area saw an increase in population that was three times that of the Commonwealth overall (3.94% versus 1.09%).
- Generally, the Study Area population is younger than the population of the Commonwealth as a whole. In the age category 0-20 years, all reporting regions, with the exception of Clinton and Gardner, have more people who fall into this category percentage-wise than the State.
- With respect to households composed of elderly persons aged 65 and older living alone, the State average is 30%. Among the Study Area cities and towns, the highest percentages in this category were found in Hardwick (37%), Clinton (34%), and Gardner and Winchendon (both at 33%). Lowest percentages were found in Harvard and Bolton (both at 17%).

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[3] Lima A, Siqueira , E., Brazilians in the U.S. and Massachusetts: A Demographic and Economic Profile. Boston. Mauricio Gastón Institute, University of Massachusetts Boston, ,MA, November, 2007.

- Fitchburg, Leominster and Gardner emerged with the highest percentages of households composed of single females with children under age 18, at 10%, 8.3% and 8% respectively, compared to a State rate of 6.5%
- There is a large Limited English Proficient (LEP) population in the area, most notably of Spanish speakers but also of Hmong, Lao, and Vietnamese speakers.

Racial/Ethnic Diversity

Parallel to the overall increase in the African American population seen across the State, the African American population in the Study Area also saw an increase. However, despite the overall increase, the area remains below the statewide population of 6.0%. Overall, African Americans made up a smaller percentage of the total population in each of the reporting areas than they did in the Commonwealth as a whole. The largest African American community in the area is in Fitchburg comprising 4.2% of the population.

Likewise, the Hispanic population in Massachusetts increased from 6.8% to 7.9% during the 2000-2005 period, and, accordingly, so did the population in the Study Area. Latinos are, in fact, the largest racial/ethnic minority group in the Study Area, counting more than twice the State percentage and outnumbering by 2.5 times the African Americans in the area. Fitchburg has the largest community (17.2%), followed by Clinton (13.5%), and Leominster (12.9%).

During the 2000-2005 period, the Asian population increased from 4% to 4.8% of the State total. Despite an increase in all the Study Area cities and towns, Asians continue to be one of the smaller racial/ethnic minority groups in the area. The exception to this was Fitchburg, where the Asian population comprised 6% of the total population, surpassing the statewide percentage. The other largest Asian communities were found in Leominster (3.6%) and Gardner (2.1%).

It should be mentioned that although African Americans are generally the second largest racial/ethnic minority group in the Study Area, Asians hold this ranking in Fitchburg, the Gardner Area Towns, and the JCOH as a whole.

Economics

The financial picture of the region reflects its diversity, with findings that are replicated in other arenas. Looking at the economic indicators of poverty and income levels firmly establishes the contrast between the cities and towns in the JCOH service area, who were in dire financial straits, and the CHNA 9 towns outside of the JCOH. In particular, Fitchburg, along with Gardner and Leominster, were cities that emerged as those undergoing extreme financial stress.

- Fitchburg had the highest percentage of its population living below 100% of the poverty level at 15%. This represents 1.6 times the State level of 9.3%. Gardner followed with 9.6% and Leominster at 9.5%.
- Overall, the towns with the lowest percentage of people living below 100% of the poverty level were Bolton at 1.8%, Oakham at 1.9% and Harvard at 2%.
- Fitchburg also had the highest percentage of children living below 100% of the poverty level at 21.1%, 1.8 times the State level of 11.6%. Gardner and Leominster again followed at 12.8% and 12% respectively.
- At the other end of the spectrum, the lowest percentage of children living below 100% of the poverty level were found in Harvard with 0.7% and Barre, Bolton, and Lancaster all at 1.5%.

- In terms of average per capita income, the lowest average was found in Fitchburg at $17,256, less than the State average of $25,952. The highest per capita income was found again outside the JCOH in Bolton ($42,542), Harvard ($40,867), and Groton ($33,877).
- Looking at annual family income, it was Fitchburg (19.7%), Gardner (14.5%) and Leominster (14%) that had the largest number of families with annual incomes of less than $20,000 compared with the State rate of 11.4%.
- Highest annual family incomes, specified as being over $100,000, were found in Bolton (58.5%), Harvard (58.2%) and Groton (43.8%).

Unemployment

- The Study Area overall had an unemployment rate of 10.24% in June 2010. Fitchburg reported the highest unemployment rate in the region at 12.6%, 1.4 times higher than the State rate of 9.0%. Gardner (12.1%) and Leominster (11.4%) also experienced high rates of unemployment, as well as Gardner Area Towns (10.1%) and Clinton (10.0%).
- Both the Rural Eastern Towns at 8.0% and the Rural Western Towns at 8.5% had unemployment rates below the State average (9.0%).
- Clearly, the cities and towns of the JCOH have been disproportionately impacted by the economy and continue to struggle.

Education

- Fitchburg and Gardner reported the highest number of residents without a high school diploma, at 24.6% and 21.8% respectively. The State rate is 15.2%.
- The CHNA 9 cities and town less the JCOH cities and towns had a percentage rate of 10.8% of persons without a high school diploma overall, and down to 9.5% in the Rural Eastern Towns and 9.8% in the Fitchburg Area Towns.
- Parallel to this is the percentage of residents with a graduate or professional degree which is 13.7% in the Commonwealth. Gardner (5%) and Fitchburg (6.1%) had the lowest rates in this category, while the Rural Eastern Towns had the highest rates at 16.5%.
- African American students make up a lower percentage in the Study Area than in the Commonwealth overall (6.0%% versus 8.2%, respectively). Highest percentages of African American students are found in Fitchburg (6.6%), Leominster (5.8%), and Ayer (5.4%). As a corollary, all the Study Area school districts also reported a lower percentage of African American teachers than the State.
- As with general demographics, Hispanic students are well represented in the Study Area school systems. While the State percentage is 14.3%, there were several Study Area school districts with larger numbers of Hispanic students: Fitchburg's student body is 39.4% (or 2.8 times the State percentage), Leominster's is 23% (or 1.6 times the State percentage), and Clinton's is 20.3% (or 1.4 times the State percentage). Montachusett Regional Vocational Technical School had a 14.5% Hispanic student body.
- Asian students generally mirrored the overall Asian population throughout the Study Area, although with slightly higher rates. The Asian student rate in 2008-2009 for the State overall was 5.1%, with a rate of 4.8% for the general population. Fitchburg's Asian student rate was 6.1% with 6.0% residents.
- Three Study Area school districts also reported a significant student body for which English is not their first language. Compared to the State percentage of 15.4%, Fitchburg reported that English was not the first language for 29.4% of its students, with 19.5% of Clinton's students and 18.2% of Leominster's reported the same.

- In this instance, there was also a correlation between not speaking English as a first language and Limited English Proficiency (LEP). Fitchburg reported that 11% of its student body was LEP as opposed to the statewide percentage of 5.9%. Leominster and Clinton followed up respectively with 9.6% and 7.8% of LEP students.
- Five school districts within the Study Area had higher percentages of low-income students in 2008-2009 than the State average of 30.7%: Fitchburg was at 58.8%; Winchendon was at 41.4%; Clinton was at 41.4%; Gardner was at 40.1%; and Leominster was at 37.9%.
- In 2008-2009, 25.2% of the students throughout the Commonwealth qualified for the free lunch program. The same five school districts reporting highest percentages of low-income students also reported the highest percentages of students receiving free lunches: Fitchburg – 49.5%; Winchendon – 32.9%; Gardner – 32.5%, Clinton – 30.7%; and Leominster – 28.9%.
- Graduation Rates – Gardner reported the lowest graduation rate of all the school districts not only in the Study Area, but also the 16th lowest in the Commonwealth at 63.8%. The other Study Area school districts reporting rates lower than the 16th State rate of 81.2% were Fitchburg at 72%, and Winchendon at 77.9%.

b. Health Conditions

Mental Health and Substance Abuse

All groups indicated mental health concerns (identified as either depression, stress, refugee trauma, or a combination of the above conditions). Apart from the refugee-specific experience, all of the mental health concerns articulated were also connected to other socioeconomic factors contributing to poor mental health:

- The current economy has led to unemployment or the fear of becoming unemployed.
- The cost of healthcare has become prohibitive for some individuals who may forgo certain procedures or treatments due to cost.
- For those without health insurance, out-of-pocket costs prohibit access to care.

All the Study Area communities, with the exception of Clinton, had higher rates of Suicide Mortality than the State rate of 7 per 100,000. Among the communities with the highest rates were Gardner at 12.3, the Gardner Area Towns at 10.3 and Leominster at 9. Additionally, the area also had several communities with higher rates of hospital discharges for self-inflicted injuries than the State rate of 44.3 per 100,000. Fitchburg's rate was the highest at 87.2, followed by the Fitchburg Area Towns at 64.5, and Leominster at 57.

While youth overall in Massachusetts had lower rates for depressive symptoms than youth in the nation, the youth within the Study Area communities had a greater percentage of depressive symptoms than the State. Additionally, area youth had higher rates of attempted suicide than the State (9.4% versus 6.9%). The youth in the Study Area also had a higher rate of receiving medical treatment as a result of a suicide attempt than both the State and the U.S.

Most of the Study Area public school districts had a lower rate of students enrolled in Special Education due to emotional disability than the State average of 1.4%. However, those with a rate higher than the State included Gardner (2.6%), Fitchburg (2.2%), and Berlin (2.1%).

Substance abuse was also a concern noted with frequency among the focus group participants for both adults and youth. Youth often linked adult substance use to economic conditions, resulting in further stress in the family. Generally, high school-aged youth engaged in alcohol and drug use at higher rates than both the State and the U.S. It was only in the category of alcohol use that the State rate was higher than the local rate. Additionally, Massachusetts adults aged 65 and older generally had higher rates of alcohol use than the national rate (64% versus 59%), and higher rates of binge alcohol use (26.2% versus 21%).

Oral Health

In the last *Community Health Assessment of North Central Massachusetts* (printed in 2003), concern regarding the oral health and availability of dental services was expressed frequently throughout the qualitative data. Conversely, in the current study, concerns about oral health and the availability of dental services was noticeably absent in the data. Of the 160 persons in the pool of qualitative data, only 4 individuals mentioned oral health or the access to services as a major health concern. The authors of this report assert that the reason the issue ranked so much lower in people's consciousness and concerns than in past health assessments, is due to a multi-year effort to address oral health and access to dental care through the Oral Health Initiative of North Central Massachusetts. The oral health picture has improved dramatically as a result and these improvements have been sustained over time through systemic changes.

In 2002, the Joint Coalition on Health received a multi-year grant (The Oral Health Initiative) from The Health Foundation of Central Massachusetts to address access to oral health services for the underserved. A number of strategies were addressed through the Oral Health Initiative which include the following:

- **Community Health Connections (CHC) Dental Services**
  Perhaps the single most important systemic change is that Community Health Connections Family Health Centers opened a nine-chair dental service in 2003. In 2010 alone, the dental division of Community Health Connections Family Health Centers provided care for 12,718 patients with 41,001 visits.

- **GHAP Dental Program**
  GHAP dentists provided 1,200 patient visits (from July, 2002-June, 2008) in a case-managed program that evolved into and supported an increase in the number of dentists accepting MassHealth.

- **School-Based Dental Sealant Program**
  The school-based dental sealant program now called "Caring for Kids" provides dental screenings, cleanings, fluoride varnish treatments, and dental sealants to students in grades K-12 who have difficulty accessing dental care in a traditional setting. *The program has placed over 10,000 sealants since inception and provided care to more than 1,800 students in 2010 alone.*

- **Legislative Advocacy**
  Working collectively with the Central Massachusetts Oral Health Initiative and the statewide Oral Health Task Force, among others, the group successfully advocated for changes to the MassHealth Dental coverage. *As a result of these changes, a total of 47 area dentists were accepting MassHealth by the end of 2008, compared to none who were publicly accepting it in 2002.*

- **Dental Hygiene Training Program**
  The Mount Wachusett Community College Dental Hygiene program has provided exceptional preventive services for over 800 patients. The program has also increased the supply of dental hygienists working in North Central Massachusetts.

Birth Rate

Birth rates among racial/ethnic minority groups were higher than for the White, non-Hispanic population in the Study Area based on overall demographic representation in the Commonwealth. The Hispanic birth rate was 1.7 times what would be expected based on the Hispanic population in the Commonwealth; the Asian birth rate was 1.5 times the expected rate; and the African-American birth rate was 1.4 times the expected rate. In contrast, the White, non-Hispanic birth rate was 84% of the expected rate based on population.

In births to young mothers, Fitchburg had the highest rates for births to 15-19 year olds (12.7% compared to the State rate of 6.1%). With percentages also higher than the State rate were Gardner (10%), Clinton (7.4%), the Gardner Area Towns (7%), and Leominster (6.8%).

Child Abuse and Neglect

In 2006, Fitchburg and Gardner had the highest child abuse/neglect rates in the Study Area at 65 cases per 1,000 compared to the State rate of 35.3. Winchendon and Leominster also had rates higher than the State at 54.7 and 43, respectively. The verified child abuse/neglect investigation rate for the Commonwealth was 21. Within the Study Area, Fitchburg and Gardner had the highest rate of verified investigations at 38.2 and 34.3, respectively. Winchendon had a rate of 30.3.

Premature Mortality

Several of the Study Area communities had Premature Mortality Rates higher than the State rate of 304.4 per 100,000. Leading this trend was Fitchburg at 398.9, followed by Gardner at 374.9.

Cancer

Cancer was listed among the top three health concerns for 75% of all focus group participants. African Americans, in particular, experienced the highest Cancer Mortality Rates in the region compared to the statewide rate of 207 per 100,000 (age-adjusted): Leominster African Americans had a rate of 738; Fitchburg 629; and the Rural Eastern Towns 436.

- Lung Cancer Mortality Rate - Many of the Study Area communities had higher rates than the State rate of 52 per 100,000 (age-adjusted). Among the highest was Gardner at 69, followed by the Gardner Area Towns at 61, and Clinton at 59.
- Breast Cancer Mortality Rate – Three of the Study Area communities had higher rates than the State rate of 22 per 100,000 (age-adjusted): The Rural Eastern Towns – 32; Gardner – 28; and Leominster – 25. While the data for race/ethnicity were too small for analysis, on a statewide level African Americans had the highest rate at 30.

Cardiovascular Disease Mortality

Most of the Study Area communities had higher Cardiovascular Disease Mortality Rates than the statewide rate of 219 per 100,000. The Gardner Area Towns had the highest rate at 318, followed

by Leominster at 263, and the Rural Eastern Towns at 260. In the Rural Eastern Towns, the age-adjusted rate for African-Americans was noteworthy at 688.

Cerebrovascular Disease Mortality

As with other conditions, most of the Study Area communities had higher rates of Cerebrovascular Disease Mortality than the State rate of 36 per 100,000. Leominster had the highest rate at 75, followed by Fitchburg and the Fitchburg Area Towns, both at 51.

Diabetes

Diabetes was a common healthcare concern identified across all focus groups. Five of the Study Area communities had rates higher than the State rate of 16.3 per 100,000: Fitchburg – 29.4; Leominster – 26.8, and the Rural Eastern Towns – 23.4. Latino participants in particular expressed concern about diabetes, not only for family members, but also for themselves since they had been given a diabetes diagnosis.

Infectious Diseases

- HIV/AIDS – For the 3 year period of 2004-2006, only Fitchburg's rate of 274 was higher than the State rate of 246 cases per 100,000.
- Chlamydia – During the same period, the Study Area overall reported a lower crude incidence rate of Chlamydia than the State. However, in 2005, Fitchburg and Gardner saw spikes in their rates, and, in 2006, Leominster, Templeton, and Winchendon also experienced significant increases in their rates.

Injuries

Violence, in multiple forms, was a common theme expressed by many focus group participants. Looking at the Injury and Poisonings Mortality Rate, all the Study Area communities, with the exception of the Rural Eastern Towns, had higher rates than the State rate of 41.3 per 100,000. Gardner's rate was at 60.8, the Gardner Area Towns at 53.9, Leominster at 53.8, and Clinton at 53. While the data were too small for analysis within the Study Area, African Americans had a high of 53 for a statewide rate.

With regard to Weapons Related Injuries, Fitchburg had 85 injuries during the 2005-2007 timeframe, compared to 28 each in Gardner and Leominster, the communities with the next highest rates.

Domestic Violence

Domestic violence (also referred to as intimate partner violence or IPV) is a serious health issue that arose consistently across the quantitative and qualitative data in this study. Domestic violence arose across geographic, socioeconomic and ethnic and racial groups throughout the study area. Domestic violence is associated with many social and health issues including but not limited to: substance abuse; depression; attempted suicide and suicide; homelessness; teen pregnancy; STDs and HIV; child abuse; sexual assault; teen dating violence; homicide, and many assorted stress related illnesses and diseases. (Centers for Disease Control and Prevention, 2011: (http://www.cdc.gov/ViolencePrevention/intimatepartnerviolence/index.html, http://www.cdc.gov/violenceprevention/pdf/IPV_factsheet-a.pdf). Domestic violence cuts across

all races, socio-economic classes, religions and education levels, as well as across the geographic region covered in this study. It occurs in heterosexual and same sex relationships. While the majority of victims are women, approximately 10-15% of the victims are men.
One of the challenges facing any data driven report is the lack of data associated with an issue like domestic violence, particularly at the local level. Perhaps the most critical data is the information on child abuse. Research on child abuse and domestic violence suggests a 50-60% concurrent incident rate of domestic violence and child abuse (Domestic Violence Awareness Project, 2009: http://www.nrcdv.org/dvam/about/aboutdv.php). In some locations in North Central Massachusetts, the rate of child abuse is almost twice the rate of the Commonwealth. Given that child abuse rates can be considered as a surrogate marker for domestic violence, the high rate of child abuse reflected in the data in North Central Massachusetts would indicate a high rate of domestic violence as well. Also included in this report is the Massachusetts Trial Court Civil Protection Order Registry for 2007 and 2010. This records the number of permanent protection orders issued by the six District Courts in North Central Massachusetts.

The SAFEPLAN program, started in the mid 1990s statewide, has advocates in each of the District Courts in Worcester County. Often, a SAFEPLAN advocate may be the only person a victim of domestic violence will ever see given the geography and associated transportation issues. Data reflecting SAFEPLAN advocate client contacts from 2007 and 2010 is also included in this report.

Smoking

At 15.6%, there were more persons who smoked in the Study Area than in the Commonwealth overall (13.1%) in the period 2003-2008. Further, the percentage of persons who smoked across all age groups, with the exception of those 65 years and older, was higher in the Study Area than in the Commonwealth. The highest rate, and the largest difference compared to the State level, was among younger adults, aged 18-34. For this group, the Study Area rate was 21.8% while the state rate was 15.9%.

Overweight and Obesity

Obesity as a whole is a growing national, statewide, and local issue. The percentage of obese adults in CHNA 9 for the period of 2001 through 2007 was 22.1%, compared to the statewide rate of 19.4% for the same period. The percentage of adults who were overweight or obese was 61.5% as compared to a statewide rate of 55.4%.

For children, the picture is of even greater concern, since we know from the Centers for Disease Control and Prevention (CDC) that 80% of children ages 10-15 years old who were overweight are likely to go on to become obese adults by age 25. Nationally, the CDC has estimated that 17% of children ages 2-19 are obese. For those aged 2-5, obesity rates increased from 5 to 10.4% over the period of 1976-1980 to 2007-2008.

The health effects of obesity are numerous, starting with the risk of diabetes. Diabetes is such a concern because it significantly increases the chances of having a host of other health problems such as high blood pressure, high cholesterol, coronary artery disease, and stroke, among others. For example, a person with diabetes is more than twice as likely to also have high blood pressure (59.3% as opposed to 21.4% for a person without diabetes). Similarly, a person with diabetes is more than three times more likely to have cardiovascular disease than a person without diabetes (i.e., 31.3% versus 9.5% respectively).

Diabetes and diabetic conditions requiring hospitalization in the region's pediatric population is a serious concern and is reflected in the quantitative data in the region. Diabetes-related hospitalizations for children ages 0-19 were significantly higher for CHNA 9 than in the Commonwealth as a whole.

While childhood and adult overweight and obesity are significant public health issues facing the region, hunger (also referred to as food insecurity, which has shown to be a predictive factor for obesity[4]) is also a prevalent health issue facing the state and the region. The Project Bread *Status Report on Hunger* (2010) reports that the prevalence of hunger has increased dramatically since the economic crisis of 2008 due to the high rate of unemployment and expiration of benefits. Based on the U.S. Census Bureau's *American Community Survey*, more than 615,000 people in Massachusetts were at risk for hunger, representing close to a 20 percent increase from the prior year. The *Status Report on Hunger* (2010) notes that "in low income communities, families with children experience hunger at three times the rate of the rest of the state…[and that] children are at the greatest risk of poor health outcomes from hunger." They cite the importance of robust state and federal food programs as "critical resources in the prevention and alleviation of hunger".

Interventions to address the issue of both adult and childhood obesity are complex and have been initiated in some areas in the region through programs such as the *Fit in Fitchburg* program, the *Off Our Rockers* after school program in Gardner and others. Efforts undertaken have included environmental strategies such as modifying the built environment to make walking to school or going to playgrounds more accessible and safe, making school lunches healthier, supporting more community gardens, offering incentives for low-income families to purchase fresh fruits and vegetables, addressing work place health and parent education, and offering after school nutrition and activity programming.

Addressing the obesity issue in the current economic climate is a particularly difficult challenge when so many people are consumed by concerns that are more immediate. Out of more than 160 focus group or interview participants, only 6 mentioned weight control as an issue. Conversely, nearly everyone talked about jobs and the economy.

Primary Care Manageable Hospitalizations

Asthma

Asthma was a common healthcare concern across all focus group participants in the Study Area, and particularly in the Latino, Lao, and Hmong communities. During 2004-2006, the State rate for asthma hospitalizations was 142 per 100,000, while many communities in the Study Area reported higher rates. Gardner, at 226, and Fitchburg, at 190, had the highest rates in the area.

- By racial/ethnic group, African Americans overall had better asthma rates within the Study Area than African Americans as a whole in the Commonwealth. However, the exception to this was Fitchburg where rates were almost equal.

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[4] Martin, S. and Ferris, A. **Journal of Nutrition Education and Behavior.** Volume 39, Issue 1 , Pages 31-36, January 2007.

- Hispanics had a rate of 292 statewide; however, in the Gardner Area Towns, the rate was 444 and in Fitchburg it was 369.
- By age group, Fitchburg had a higher rate of asthma hospitalization for children under 5 at 369 than the State rate of 356. Fitchburg Area Towns and Leominster had higher rates for asthma hospitalization for those 65 and older at 455 and 416, respectively, over the State rate of 252. In the 5-64 year old group, Gardner had a rate that was double the State's rate at 203 versus 108.

Angina

Several Study Area communities had higher rates for Angina Hospitalization from 2004-2006 than the State rate of 16.9 per 100,000. Highest rates were in the Rural Eastern Towns at 30.1, the Fitchburg Area Towns at 23.8 and Leominster at 21.6. In addition, several towns in the Study Area had significantly higher rates than the State: Ayer at 57; Townsend at 50.4; Shirley at 41.9; and Groton at 37.2.

Bacterial Pneumonia

Several Study Area communities had higher rates for Bacterial Pneumonia Hospitalization than the State rate of 334 per 100,000. Highest rates were in Gardner at 447 and the Rural Eastern Towns at 423. Several towns in the Study Area also had remarkably higher rates than the State: Ayer at 711; Pepperell at 541; and Winchendon at 529.

c. Community Resources and Assets

Across all groups, "community" was identified as a key resource and source of support. The concept of "community" took many forms including:

- **Family**

  For the African American, Latino, and Asian groups, family was synonymous with community. Having a strong family that could be relied on was identified as a strong asset.

- **Community Centers and Community Organizations**

  Community-based organizations which provide information and/or services in a culturally appropriate manner were identified as a key resource. (This was especially important for Latinos who expressed concerns about immigration status and documentation. For such individuals, the community/neighborhood center offered a safe, secure and, as a result, sole source of assistance.)

- **Leadership**

  Community centers or other organizations also provided a source of leadership, acting as community voice and broker.

- **Church**

  For African Americans, church was significant among resources. It is noteworthy that in the five focus groups held in African American communities, church was referenced 27 times as a primary resource.

- **Healthcare Providers**

The availability of resources to address health issues was cited by the General Population group ("hospitals"), as well as the Latino group ("Medical Providers/Health Centers"). The Asian group referenced a culturally-specific resource to address health issues: the shaman or healer.

- W**ellness: Community Definitions**

All groups identified good health as a sign of wellness, but most also elaborated this theme with considerations of a happy family, financial security, transportation, a safe place to live, and employment.

- **Focus Group Experience**

  An unplanned outcome of the focus groups was the reaction of the participants who, across all groups, felt that the time spent was valuable. There was a shared general sentiment regarding the positive aspects of coming together in a comfortable and welcoming environment where opinions were listened to, shared and valued. In addition, participants expressed an interest in further community health-related events.

V. Summary

The data presented in this community health assessment demonstrates that many of the health concerns that residents of North Central Massachusetts face are considered ***preventable chronic diseases*** (i.e., diseases like Type 2 diabetes that could be prevented with changes to specific risk factors and health behaviors, such as poor diet, insufficient physical activity, alcohol abuse, inadequate sleep, and stress). This indicates that there are interventions and initiatives that we, as community members and agencies, can undertake in our own lives and for our clients and employees which can lead to improved health for our region. The statewide anti-tobacco campaign undertaken by the Commonwealth in the early 1990s is an example of how education through mass media combined with workplace and private business initiatives, has significantly influenced the health-related behaviors (i.e., tobacco use) of thousands of Massachusetts residents.

Unfortunately, research has shown that preventable chronic diseases are greatly impacted and exacerbated not only by sociodemographics and social determinants (see section on Health Disparities), but also by economic conditions. In difficult economic times, such as those we are currently facing, positive health behavior changes are difficult to initiate and sustain. With high unemployment rates and reductions in workers' hours, it is more difficult for residents to purchase healthy foods, maintain fitness club memberships, participate in stress-reducing activities, and afford health insurance premiums – all of which have been shown to positively impact health and quality of life. Racial and ethnic minorities bear the additional burden of racism and language barriers which compound these challenges.

At the same time, research has also shown that preventable chronic diseases put a strain on the local economy. Costs to employers from absenteeism are more than twice direct medical costs incurred by employees through their employer-based health plans.[5] Consequently, we, as a region, must focus on assisting our families, our clients and our employees to make healthy choices in their lives. We should learn from successful initiatives like Massachusetts' anti-tobacco campaign and come together as a community with participation from all sectors to improve access not just to healthcare, but to other basic goods and services which enable residents to make healthier lifestyle choices. We must make the case that a healthy community contributes to a healthier economy.

[5] Loeppke, Ronald et al "Health and Productivity as a Business Strategy: A Multiemployer Study," *Journal of Occupational and Environmental Medicine*, April 2009.

INTRODUCTION

Purpose

This Community Health Assessment of North Central Massachusetts is designed to provide information and analyses relative to the health status, issues, concerns and assets of the North Central Region of Massachusetts as defined by the service area of The Community Health Network of North Central Massachusetts (CHNA 9).

In the past, similar assessments have been conducted by The Joint Coalition on Health of North Central Massachusetts (JCOH). The most study was completed in 2003. The JCOH has had a history of using the data contained in these assessments to develop programs and services in the community. In other words, the JCOH has taken positive action based on the findings of prior assessments.

For this assessment, the study area has been widened to include not just the JCOH service area, but also the larger service area of CHNA 9.

As outlined in the following **Methodology** section, quantitative data for this assessment was collected from MassCHIP, the Massachusetts Department of Public Health (MDPH), the United States Census Bureau, the Massachusetts Department of Workforce Development, the Massachusetts Department of Elementary and Secondary Education and the Massachusetts Behavioral Health Partnership (MBHP).

Qualitative data for this assessment was collected via focus groups, interviews, surveys and community forums held within the region as outlined below.

Methodology

The methodology of the Study is displayed in the following chart:

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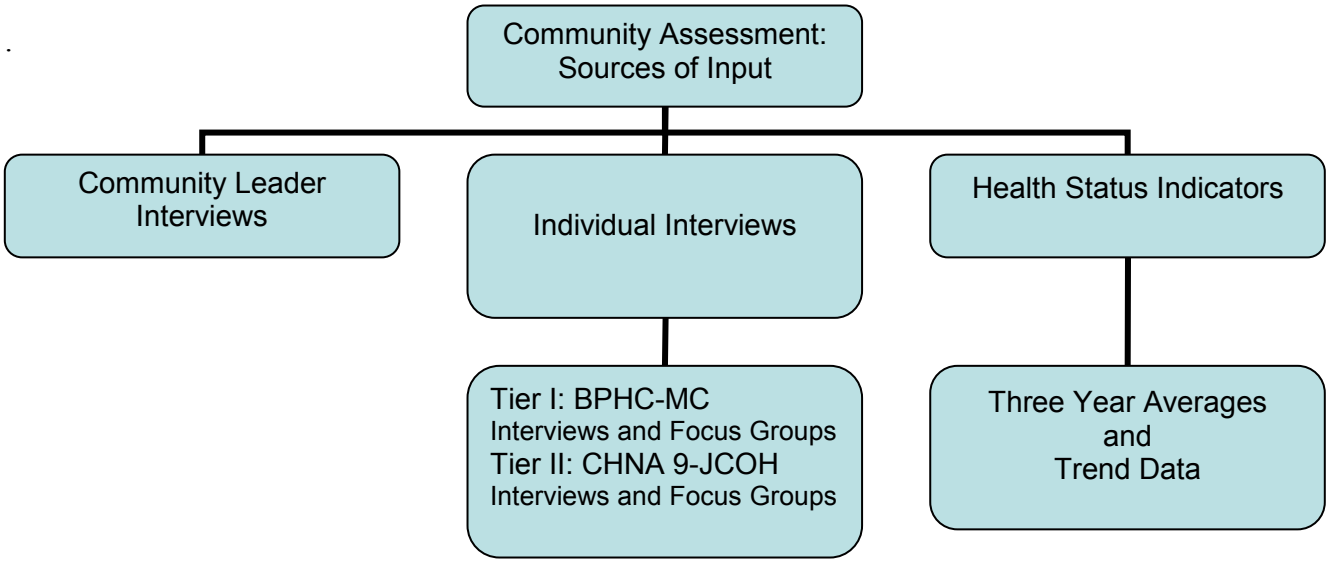

Data for the Study was gathered systematically utilizing the following standards or principles guiding the methodologies and source selections:

1. Availability of multiple years of data on study elements;
2. Specificity of data to the Study Area communities;
3. Appropriateness of data collection methodologies to the data source;
4. Broad participation among the stakeholder populations; and
5. Broad range of input from qualitative and quantitative sources.

Quantitative Data Sources

Massachusetts Community Health Information Profile (MassCHIP)

Most of the quantitative data used in this report was obtained using the custom reporting feature of the Massachusetts Community Health Information Profile (MassCHIP). According to the Commonwealth of Massachusetts website (www.mass.gov),

> "MassCHIP was developed by the Massachusetts Department of Public Health to assist communities and professionals in health planning. MassCHIP provides access to 36 health status, health outcome, program utilization, and demographic data. MassCHIP is a dynamic, user-friendly information service that provides free, online access to health and social indicators. With MassCHIP, you can obtain community-level data to assess health needs, monitor health status indicators, and evaluate health programs."

MassCHIP includes information from the following data sources:

- Vital Statistics;
- Communicable Diseases;
- Sociodemographics, including US Census Socioeconomic data (1990 and 2000);
- Massachusetts Department of Public Health Program Utilization.
- Additional Data Sets:
    - Childhood Lead Screening;
    - Cancer Incidence;
    - Hospital Discharges;
    - Hospital Emergency Department;
    - Observation Stay;
    - Weapons Related Injury Surveillance System (WRISS);
    - Behavioral Risk Factor Surveillance System (BRFSS);
    - Department of Education;
    - Department of Children and Families; and
    - Division of Early Education and Care.

Unless noted, all quantitative data in this report was sourced from MassCHIP.

Massachusetts Department of Elementary and Secondary Education

Although MassCHIP does contain data from the Department of Education, more recent data is readily available from the Massachusetts Department of Elementary and Secondary Education website (www.doe.mass.edu). This website served as the source of most of the data in the **Sociodemographics** (Education) and **Executive Summary** sections of this report.

Massachusetts Department of Workforce Development, Division of Unemployment Assistance

Although MassCHIP does contain data from the Department of Workforce Development, Division of Unemployment Assistance, more recent data is readily available from the Commonwealth of Massachusetts website (www.mass.gov). This website served as the source of data in the **Sociodemographics** (Unemployment) section of this report.

Mental Health and Substance Abuse Needs Assessment of North Central Massachusetts
This report was commissioned by the Joint Coalition on Health of North Central Massachusetts and was prepared by DMA Health Strategies in March 2009.

Qualitative Methodology

As discussed throughout this report, qualitative data was elicited to enhance, clarify, and add "community voices" and real life experiences in an effort to enhance the depth and understanding of the health concerns, assets, and quantitative data included in this report. In addition, qualitative data also possesses the capacity to reflect recent conditions that, due to the nature of qualitative data collection and reporting, reflects current conditions. For example, the qualitative data reflects the economic crisis which occurred during the process of qualitative data collection.

This report contains not only the broader geographic scope discussed earlier, but also reflects the expanded partnership with the North Central Massachusetts Minority Coalition's Health Equities Committee and the data gathered through its Boston Public Health Commission's REACH CEED Black Legacy grant focusing on health disparities and the related social determinants of health. This partnership served to expand and enrich the data of this study and is included and noted accordingly in the methodology outlined below.

The following strategies were utilized to collect qualitative data:

- Individual Interviews with Community Members;
- Individuals Interviews with Community Leaders ("Key Stakeholders"); and
- Focus Groups with Community Members.

The following chart represents the modalities and brief description of the qualitative data elements utilized in this study.

Qualitative Activities

ACTIVITY	COMMUNITIES	LANGUAGE	NUMBER OF PARTICIPANTS	LOCATION
Focus Group: 1	African American	English	11 and 6 Individual Interviews	Fitchburg
Focus Group: 2	African American	English	5 and 2 Individual Interviews	Gardner
Focus Group: 3	African American	English	2 Individual Interviews	Clinton
Focus Group: 4	African American	English	4 and 5 Individual Interviews	Leominster
Focus Group: 5	African American	English	7	Ayer
Focus Group: 6	Latino	Spanish	5 and 1 Individual Interview	Fitchburg
Focus Group: 7	Latino	Spanish	7	Gardner
Focus Group: 8	Latino	Spanish	10 and 1 Individual Interview	Leominster
Focus Group: 9	Brazilian	Portuguese	12 and 1 Individual Interview	Leominster
Focus Group: 10	Laotian	Lao	4	Fitchburg
Focus Group: 11	Hmong	Hmong	15 and 1 Individual Interview	Fitchburg
Focus Group: 12	General Population	English	11 and 1 Individual Interview	Fitchburg
Focus Group: 13	General Population	English	5 and 1 Individual Interview	Gardner
Focus Group: 14	General Population	English	6 and 1 Individual Interview	Clinton
Focus Group: 15	General Population	English	13 and 1 Individual Interview	Leominster
Focus Group: 16	General Population	English	7 and 1 Individual Interview	Rural-East
Focus Group: 17	General Population	English	12	Rural-West
Focus Group 18	Youth	English	5	Fitchburg
Individual Interviews	African American, Latino, Asian	English	Included Above	Throughout Study Area

Focus Groups: Methodology

Recruitment

The Focus Groups noted in the chart above were conducted by recruiting community members in each of the populations described above. Participants were recruited through various means: Via flyers advertising the groups posted in health, social and cultural organizations and general community locations (e.g., libraries, laundromats); Through the referral of community members from community leaders; Through the referral of community members by the staff of community based and cultural organizations; and Through direct recruitment of community members by consultants conducting the qualitative data.

Facilitation and Content

Tier I Focus Groups (funded through the Boston Public Health Commission REACH CEED Black Legacy grant were facilitated by Lynne Man in partnership with the North Central Massachusetts Minority Coalition's Health Equities Committee. Tier II Focus Groups, under the direction of the North Central Massachusetts Minority Coalition's Health Equities Committee, Emily MacRae Enterprises, and the Central MA Area Health Education Center, Inc., utilized a combination of staff/consultants of both entities as well as community leaders related to each of the identified target populations. This combination of facilitators was done intentionally as a means of eliciting candid input with trusted community leaders as well as an effort to build capacity within the study area within diverse groups of individuals. Community members, in most cases, provided group facilitation under the direction of Emily MacRae.

The Focus Groups were held in a diverse range of community settings, identified in partnership with community leaders that were thought to be accessible and safe venues to elicit data from the participants. Locations included neighborhood centers, churches, healthcare institutions, schools, and cultural centers such as the Spanish American Center, Cleghorn Neighborhood Center, Heywood Hospital, HealthAlliance Hospital, Clinton Hospital, WHEAT, Three Pyramids, Beautiful Gate Church, New Hope Community Church, Twin Cities CDC, Gardner CDC, Memorial Congregational Church, and the Montachusett Opportunity Council (MOC).

The questions utilized in the focus groups and individual interviews were developed by the North Central MA Massachusetts Minority Coalition's Health Equities Committee to conduct their initial focus groups funded through the Boston Public Health Commission REACH CEED Black Legacy grant. In an effort to achieve consistency across data, the remainder of the focus groups and stakeholder interviews also utilized these questions. The focus groups questions are listed in the table on the following page.

FOCUS GROUP QUESTIONS

1. What are the three top ailments (diseases, conditions) that you and/or your family suffer from?

2. What makes it difficult for you to get good health care?

3. Does income or insurance coverage affect the way you take care of your health?
   a. Social determinants of health (definition listed below was read to participants)

4. What comes to mind when you think about what is going on in your life and how it affects your health?

5. What are some of the conditions in your community that contribute to sickness and disease?

6. What are some of the community resources that can overcome these barriers?

7. What do good health and/or feeling healthy mean to you?

8. Is there one last thing that you would like to say about the health of the people in your community?

Consistent with the established body of Health Disparities literature and the awareness that social determinants of health directly and indirectly impact the health status of community members[6], group participants (through question 3), were explicitly asked about the impact of social determinants of health upon their health and well being. Within this context, the following definition was provided,

> "Social determinants of health refer to conditions of society that reflect root causes of community and individual health and well-being. Such causes include, but are not limited to quality and affordability of housing, level of employment and job security, standard of living, availability of mass transportation, quality of education, forms of clean economic development, racism, poverty, distribution of goods and services, chronic stress, and workplace conditions."

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[6] Brennanm Ramirez LK, Baker, EA, & Melzler, M. Promoting Health Equity: A Resource to Help Communities Address Social Determinates of Health, Atlanta: U. S Department of Health & Human Services, Centers for Disease Control and Prevention; 2008.

Focus Groups were conducted in the languages specific to the target population of each group. Languages utilized in the focus groups included: English; Hmong; Lao; Portuguese; and Spanish. In the Hmong, Lao, Portuguese, and Spanish groups, the recorded notes were then translated into English for analysis.

Analysis and Results

Notes from the Tier I focus groups (conducted in the Boston Public Health Commission REACH CEED Black Legacy grant) were analyzed by Lynne Man, utilizing manual qualitative content analysis. Similarly, Tier II Focus Groups were analyzed by Emily MacRae Enterprises and were again reviewed for consistency by Joanne Calista of Central MA AHEC, Inc. As noted in the description of the Qualitative methods in the Executive Summary and Introduction sections, participant feedback was only reported when expressed in multiplicity in the data gathering (i.e., **descriptions and quotations are not recorded in this report if expressed solely by one participant**). The findings of the focus groups are synthesized and are recorded within the body of this report.

An unplanned outcome of the focus groups was the fact that the participants, across all groups, identified the group experience itself as valuable. Participants expressed that they enjoyed coming together in a group where they felt comfortable, valued and listened to. Participants also expressed that they enjoyed learning about health issues, and expressed an interest in further community and health related gatherings.

> *"I have met new people, [you] have listened to us, and I hope that all of this helps us and the community overall. Hopefully the community will continue to respond."*
>
> *"Talking…Meeting new people, I like to share, and this is the perfect opportunity. I felt good in this meeting."*
>
> *"This gives people opportunity to learn from one another and to validate our experiences. This was well organized with good and thoughtful questions."*
>
> *"A lot of people want to be a part of things but need to know and need the outlet to do it."*
>
> *"Getting together with older women, with my sisters, I learn a lot about how to deal with things I am going through. We have so much to offer to one another but we need to find more opportunities to connect."*

The authors have highlighted this participant feedback related to the groups, as it may have implications for strategies to enhance awareness of health issues and resources as well as to address the issue of social isolation reported in this document.

Study Area Overview

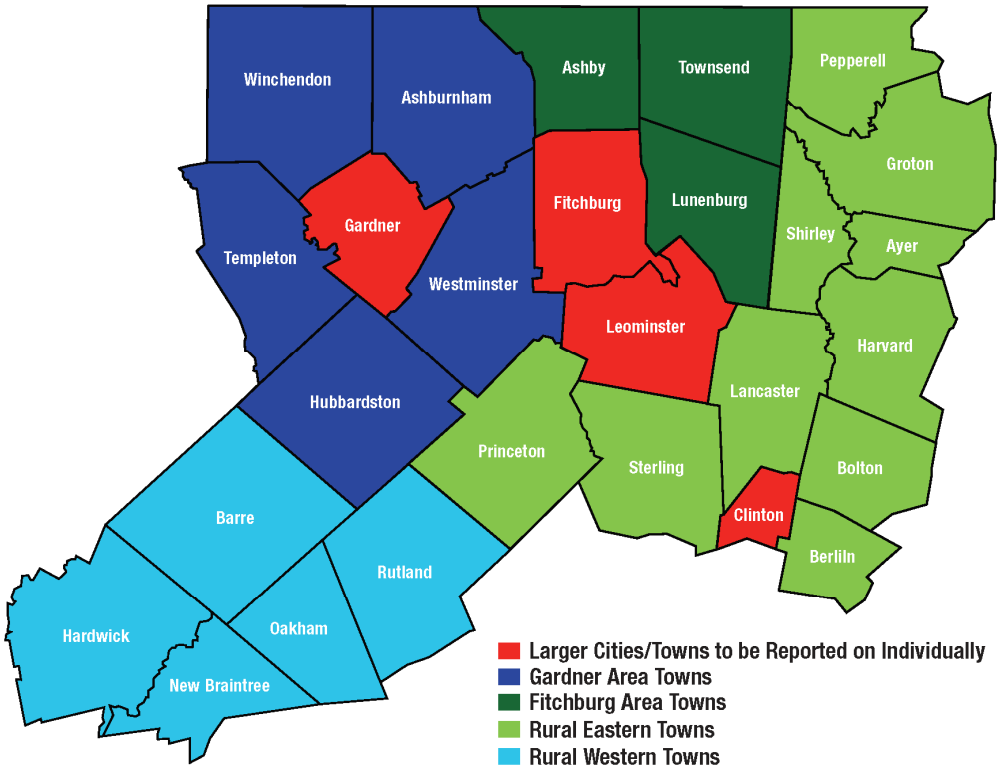
The Community Health Network of North Central Massachusetts (CHNA 9) comprises 27 cities and towns located in the North Central Region of the Commonwealth of Massachusetts. Eleven of these cities and towns are also within the service area of the Joint Coalition on Health of North Central Massachusetts (JCOH).

Data in this report is presented individually for the cities of Fitchburg, Gardner and Leominster and for the town of Clinton. The remaining smaller towns in the CHNA 9 are combined into reporting regions to obtain meaningful data. Much of the health data collected for a population group can be misleading if the population size is small. For example, one motor vehicle death in a town of 2,000 people could result in a motor vehicle death rate of 50 per 100,000 people. This rate would be alarming when compared with statewide and Healthy People 2010 age-adjusted rates of less than 10 per 100,000 people. In order to alleviate this problem, most of the towns in CHNA 9 have been grouped into reporting regions to provide a broader population base for producing meaningful comparative data. Whenever possible, three years of data are used for each measure and, when feasible, data is provided for individual towns.

In order to enable comparisons of the data reported here to that in prior JCOH assessments, the reporting areas used in prior JCOH assessments are used here for the JCOH towns.
This assessment also includes discussions of any differences seen between the JCOH service area, the overall CHNA 9 service area, and the CHNA 9 service area without the JCOH cities/towns (CHNA Less JCOH).

In addition to comparisons made to Massachusetts as a whole, data are also compared to Healthy People 2010 goals, a set of national objectives designed to reduce the most significant preventable threats to our health.

CHNA 9 Service Area with Reporting Regions



DEMOGRAPHICS

Overall Population by City/Town

As described in the Introduction, this Community Health Assessment will focus on the service area of the Community Health Network of North Central Massachusetts (CHNA 9). CHNA 9 comprises 27 cities and towns located in the North Central Region of Massachusetts.

Each of the 27 cities/towns in CHNA 9 is listed below, with its respective populations in 2000 and 2005, and its population growth and percent growth during this time period. The cities/towns with an asterisk are also part of the JCOH service area.

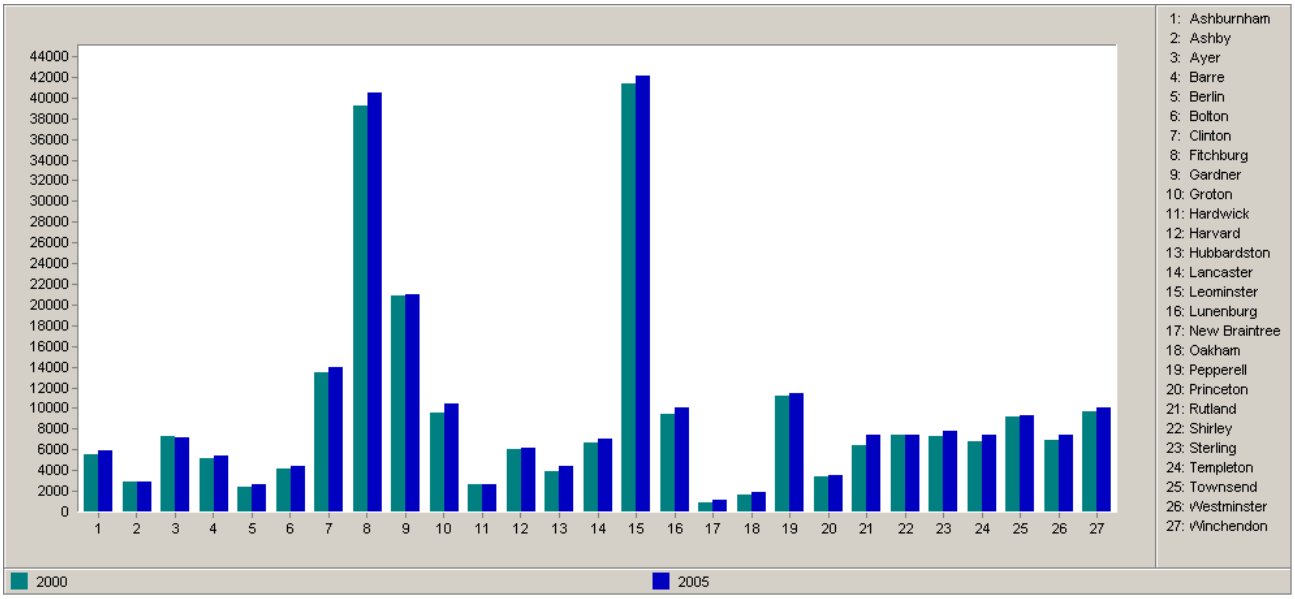
CHNA 9 Cities/Towns - Population Data 2000 versus 2005

City/Town	2000 Population	2005 Population	Growth	Percent Growth
Ashburnham *	5,572	5,970	398	7.14%
Ashby *	2,854	2,926	72	2.52%
Ayer	7,298	7,212	-86	-1.18%
Barre	5,138	5,375	237	4.61%
Berlin	2,396	2,683	287	11.98%
Bolton	4,164	4,428	264	6.34%
Clinton	13,474	13,997	523	3.88%
Fitchburg *	39,219	40,514	1,295	3.30%
Gardner *	20,816	20,955	139	0.67%
Groton	9,606	10,396	790	8.22%
Hardwick	2,630	2,655	25	0.95%
Harvard	5,997	6,116	119	1.98%
Hubbardston *	3,941	4,340	399	10.12%
Lancaster	6,599	7,069	470	7.12%
Leominster *	41,400	42,120	720	1.74%
Lunenburg *	9,452	10,008	556	5.88%
New Braintree	936	1,090	154	16.45%
Oakham	1,683	1,892	209	12.42%
Pepperell	11,186	11,386	200	1.79%
Princeton	3,367	3,520	153	4.54%
Rutland	6,397	7,406	1,009	15.77%
Shirley	7,422	7,361	-61	-0.82%
Sterling	7,295	7,761	466	6.39%
Templeton *	6,835	7,474	639	9.35%
Townsend *	9,213	9,273	60	0.65%
Westminster *	6,938	7,358	420	6.05%
Winchendon *	9,643	10,085	442	4.58%

The 4 largest entities in the CHNA 9 are the cities of Leominster (42,120), Fitchburg (40,514) and Gardner (20,995) and the town of Clinton (13,997). The 4 smallest towns are New Braintree (1,090), Oakham (1,892), Hardwick (2,655) and Berlin (2,683).

There were 2 towns in the CHNA 9 which lost population from 2000 to 2005; Shirley lost 61 people and Ayer lost 86 people. Five towns experienced growth of over 10% during this time period, including 3 of the smallest towns in the region, Berlin (11.98%), Oakham (12.42%) and New Braintree (16.45%), as well as Hubbardston (10.12%) and Rutland (15.75%). Two entities experienced an increase in population of over 1,000 people, with Fitchburg and Rutland gaining 1,295 and 1,009 people, respectively.

CHNA 9 Cities/Towns - Population Data 2000 versus 2005



Overall Population by Reporting Region

The 27 cities and towns in CHNA 9 are grouped into 8 reporting regions as follows:

- The Town of **Clinton**
- The City of **Fitchburg**
- The City of **Gardner**
- The City of **Leominster**
- The **Fitchburg Area Towns** of Ashby, Lunenburg and Townsend
- The **Gardner Area Towns** of Ashburnham, Hubbardston, Templeton, Westminster and Winchendon
- The **Rural Eastern Towns** of Ayer, Berlin, Bolton, Groton, Harvard, Lancaster, Pepperell, Princeton, Shirley and Sterling
- The **Rural Western Towns** of Barre, Hardwick, Oakham, New Braintree and Rutland.

Quantitative Data is also presented for the following summary regions:

- The **JCOH Service Area** of Ashburnham, Ashby, Fitchburg, Gardner, Hubbardston, Leominster, Lunenburg, Templeton, Townsend, Westminster, and Winchendon;
- The Overall **CHNA 9 Service Area** of Ashburnham, Ashby, Ayer, Barre, Berlin, Bolton, Clinton, Fitchburg, Gardner, Groton, Hardwick, Harvard, Hubbardston, Lancaster, Leominster, Lunenburg, New Braintree, Oakham, Pepperell, Princeton, Rutland, Shirley, Sterling, Templeton, Townsend, Westminster, and Winchendon;

- The **CHNA Less JCOH Service Area** (CHNA 9 Service Area excluding the JCOH cities/towns) of Ayer, Barre, Berlin, Bolton, Clinton, Groton, Hardwick, Harvard, Lancaster, New Braintree, Oakham, Pepperell, Princeton, Rutland, Shirley, and Sterling; and
- The **Commonwealth of Massachusetts** (for comparative purposes).

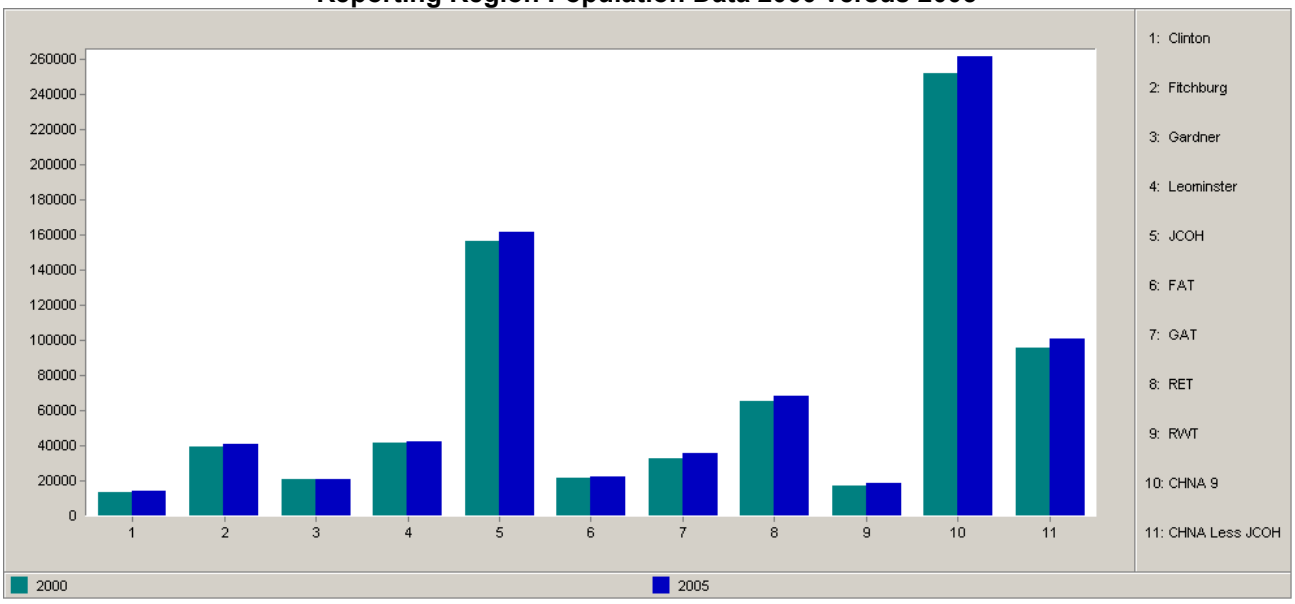
CHNA 9 Reporting Regions - Population Data 2000 versus 2005

Reporting Region	2000 Population	2005 Population	Growth	Percent Growth
Clinton	13,474	13,997	523	3.88%
Fitchburg *	39,219	40,514	1,295	3.30%
Gardner *	20,816	20,955	139	0.67%
Leominster *	41,400	42,120	720	1.74%
Fitchburg Area Towns (FAT) *	21,519	22,207	688	3.20%
Gardner Area Towns (GAT) *	32,929	35,227	2,298	6.98%
Rural Eastern Towns (RET)	65,332	67,930	2,598	3.98%
Rural Western Towns (RWT)	16,784	18,418	1,634	9.74%
JCOH *	155,883	161,025	5,142	3.30%
CHNA 9	251,473	261,369	9,896	3.94%
CHNA Less JCOH	95,590	100,344	4,754	4.97%
Massachusetts	6,367,275	6,436,940	69,665	1.09%

In 2005, the population of CHNA 9 was 261,369 or 4% of the Massachusetts population. The JCOH cities/towns with 161,025 people made up 62% of the overall CHNA 9 population. Gardner had the lowest percentage increase in population between 2000 and 2005 at 0.67%, making it the only reporting region to experience a growth rate lower than the 1.09% population increase seen in Massachusetts as a whole.

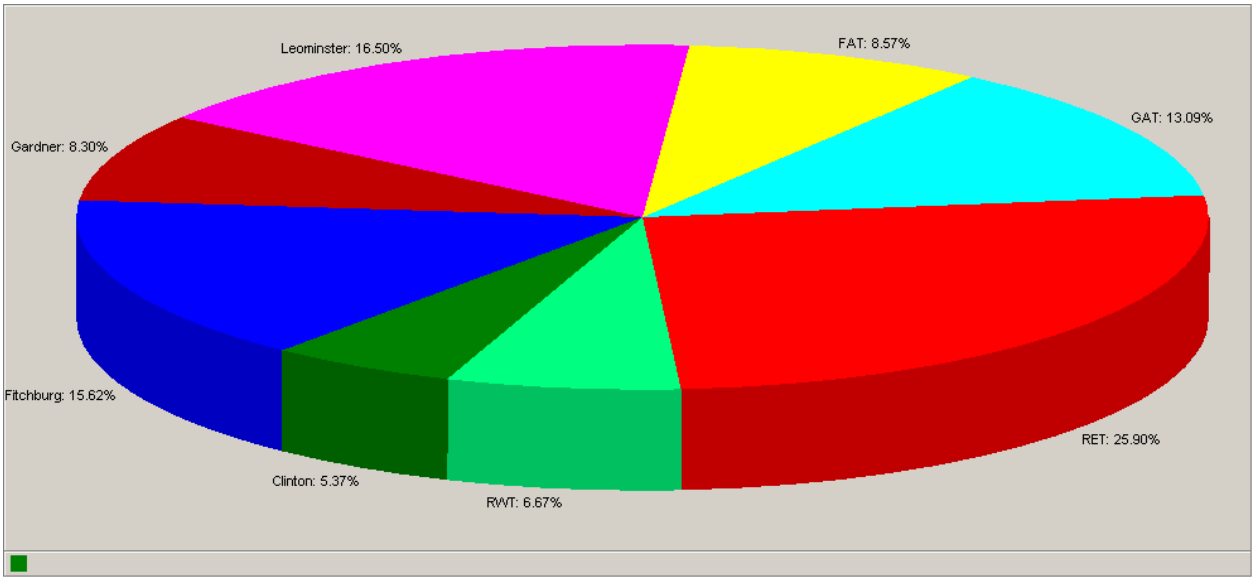
Most of the reporting regions experienced percentage increases between 3% and 4%. The largest percentage increases in population were experienced by the westernmost towns in CHNA 9, with the Gardner Area Towns showing a 6.98% increase, while the Rural Western Towns reported the largest percentage increase in population at 9.74%.

Reporting Region Population Data 2000 versus 2005

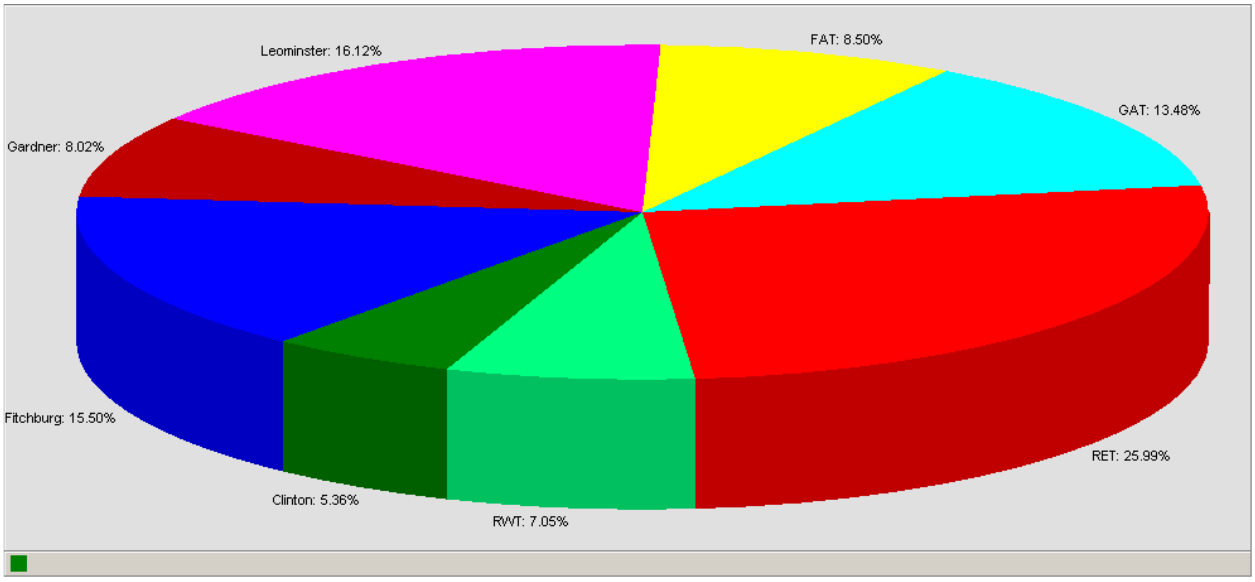


The distribution of population within CHNA 9 by reporting region changed somewhat between 2000 and 2005. Overall, the JCOH cities and towns lost population proportionally, while the CHNA Less JCOH towns made up for this shortfall by gaining population.

Overall Population by Reporting Group (2000)



Overall Population by Reporting Group (2005)



Between 2000 and 2005, the population of CHNA 9 increased by 3.94%, more than three times the 1.09% population increase seen in the Commonwealth. During that time period, the JCOH cities/towns had a 3.3% increase in population, while the CHNA Less JCOH towns experienced almost a 5% increase in population. The fact that the JCOH cities/towns as a whole grew at a slower rate than the CHNA Less JCOH towns can be illustrated by the fact that the JCOH

cities/towns, with 62% of the overall CHNA 9 population accounted for only 52% of the overall CHNA 9 growth in population.

Age Distribution

The distribution of population by age group shows that the populations of both the CHNA 9 and the JCOH are generally younger than those of the Commonwealth as a whole. Within both the CHNA 9 and the JCOH, the percent of population in the 0 - 9 and 10 -19 age groups is higher than that of the State, while the percent of population in the 60 – 69, 70 – 79 and 80 Plus age groups is lower than that of the State.

Percent of Population by Age Group (2005)

Age Range (in years)	Clinton	Fitchburg	Gardner	Leominster	Fitchburg Area Towns	Gardner Area Towns	Rural Eastern Towns	Rural Western towns	JCOH	CHNA 9	CHNA Less JCOH	MA Total
00 – 09	11.5%	13.2%	11.8%	13.3%	13.0%	13.2%	13.8%	13.7%	13.0%	13.2%	13.5%	12.3%
10 – 19	12.5%	14.9%	12.6%	13.0%	16.8%	16.2%	14.5%	16.5%	14.7%	14.6%	14.6%	13.2%
20 – 29	13.8%	16.3%	13.4%	12.9%	7.9%	9.4%	9.3%	9.4%	12.4%	11.5%	9.9%	13.3%
30 – 39	15.1%	13.0%	14.3%	15.3%	13.5%	14.3%	15.4%	14.7%	14.1%	14.6%	15.2%	14.5%
40 – 49	16.2%	14.3%	16.5%	16.3%	20.9%	19.1%	20.2%	18.9%	17.1%	18.0%	19.4%	16.2%
50 – 59	12.2%	10.9%	12.0%	12.3%	14.6%	13.9%	14.5%	13.6%	12.6%	13.1%	14.0%	13.0%
60 – 69	7.6%	6.7%	7.5%	7.4%	6.8%	6.9%	6.3%	6.1%	7.1%	6.8%	6.4%	7.7%
70 – 79	6.2%	5.8%	6.3%	5.3%	4.0%	4.2%	3.7%	4.1%	5.1%	4.7%	4.1%	5.6%
80 Plus	4.9%	4.8%	5.5%	4.2%	2.5%	2.9%	2.4%	3.2%	4.0%	3.6%	2.9%	4.4%

Similarly, all of the reporting regions, except Clinton and Gardner, have proportionally more people in the less than 20 age group than the State. The reporting regions with the highest percentage of population in the under 20 age group are the Rural Western Towns (30.2%), the Fitchburg Area Towns (29.7%) and the Gardner Area Towns (29.4%). On the other hand, both Clinton (23.9%) and Gardner (24.5%) have a percentage of population less than 20 years old which is lower than the State's average of 25.5%.

Overall, 17.7% of the Commonwealth's population is over 59 years old. Within CHNA 9, only Gardner at 19.3% and Clinton, at 18.7% have higher percentages of their populations over the age of 59 than the State. The reporting regions with the lowest percentage of people over 59 are the Rural Eastern Towns at 12.4% and the Fitchburg Area Towns and the Rural Western Towns, both at 13.3%.

Age/Gender Distribution

Overall, the Commonwealth of Massachusetts has a population which is 51.5% female and 48.5% male. Most of the reporting regions in CHNA 9 exhibit a similar ratio, with a larger percentage of females than males. The four exceptions are Gardner, the Gardner Area Towns, the Rural Eastern Towns and the CHNA Less JCOH, which all have a higher percentage of males. The highest overall percentage of females is found in Fitchburg at 52% and the highest overall percentage of males is found in the Rural Eastern Towns at 52.2%

When age ranges are considered, all of the CHNA 9 reporting regions, as well as the Commonwealth, have a higher percentage of males than females in the 0–9 and 10-19 age groups. The males range from 50.2% of the 0 – 19 population in Fitchburg to as high as 52.6% of the population in that age group in Gardner.

In contrast, the 20 – 59 age groups have different gender distributions depending upon the reporting region, with the percent of females higher than the percent of males for Clinton, Fitchburg and Leominster as well as for the Commonwealth as a whole. Gardner, the Gardner Area Towns, the Rural Eastern Towns, CHNA 9 and the CHNA Less JCOH all report a higher percentage of males than females in this age group.

Percent of Population by Gender and Age Group (2005)

Age/ Gender	Clinton	Fitchburg	Gardner	Leominster	Fitchburg Area Towns	Gardner Area Towns	Rural Eastern Towns	Rural Western Towns	JCOH	CHNA 9	CHNA Less JCOH	MA Total
0 -19												
Female	48.4%	49.8%	47.4%	48.1%	48.2%	47.6%	48.2%	48.1%	48.4%	48.3%	48.2%	48.8%
Male	51.6%	50.2%	52.6%	51.9%	51.8%	52.4%	51.8%	51.9%	51.6%	51.7%	51.8%	51.2%
20-59												
Female	50.1%	50.6%	45.1%	51.7%	50.0%	49.9%	46.3%	50.1%	50.0%	49.0%	47.5%	50.7%
Male	49.9%	49.4%	54.9%	48.3%	50.0%	50.1%	53.8%	49.9%	50.0%	51.0%	52.5%	49.3%
60 Plus												
Female	59.1%	59.5%	57.1%	58.2%	54.3%	53.7%	53.8%	54.7%	57.1%	56.4%	55.0%	57.6%
Male	40.9%	40.5%	42.9%	41.8%	45.8%	46.3%	46.2%	45.3%	42.9%	43.7%	45.0%	42.4%
Total												
Female	51.5%	52.0%	48.1%	51.9%	50.1%	49.8%	47.8%	50.1%	50.7%	50.0%	48.8%	51.5%
Male	48.5%	48.0%	51.9%	48.1%	49.9%	50.2%	52.2%	49.9%	49.3%	50.0%	51.2%	48.5%

Not surprisingly, all of the reporting regions in CHNA 9, as well as the Commonwealth as a whole, have a much higher percentage of females than males in the 60 Plus age group, a reflection of the fact that women generally have a longer life expectancy than men.

Racial/Ethnic Populations

This study strove to reflect the rich diversity of the region. In addition to the work of the combined CHNA 9/ JCOH quantitative and qualitative data collection and review that informed this study, this study was greatly enhanced by the work of the North Central Massachusetts Minority Coalition's Health Equities Committee that was supported by Boston Public Health Commission REACH CEED Black Legacy grant and was woven into this report.

As noted in the **Executive Summary,** the diversity of communities was also reflected in a diversity of experiences in relation to health: health conditions, barriers to care, and community assets and resources.

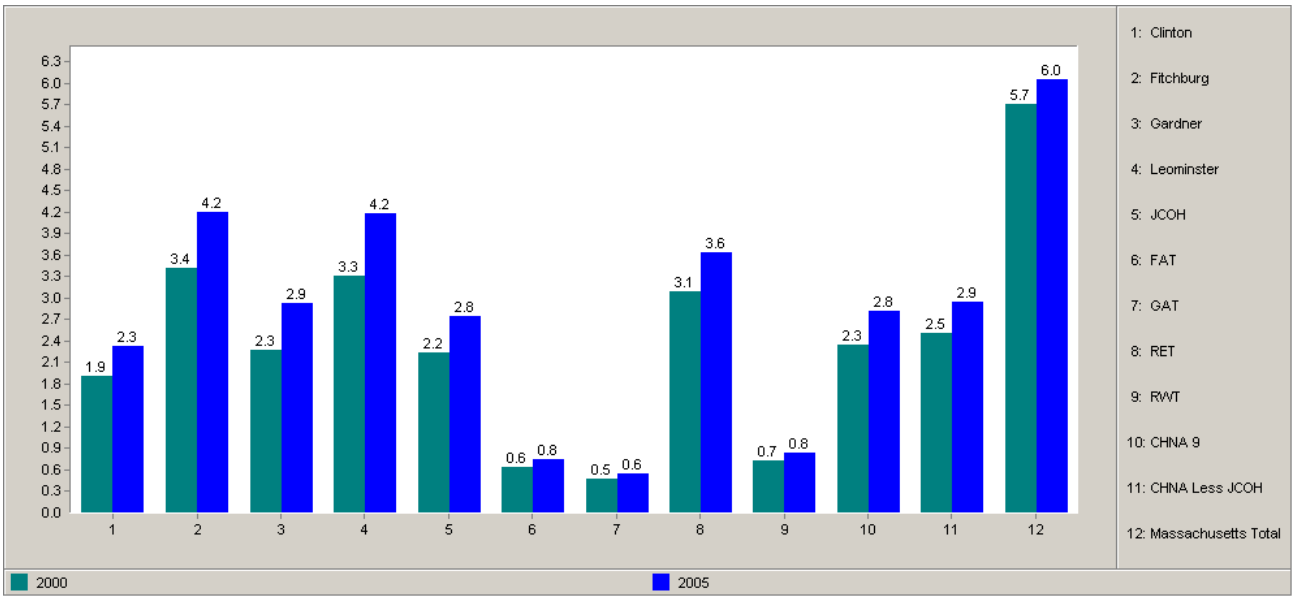
Black, Non-Hispanic Population

Within the Commonwealth of Massachusetts, the Black, non-Hispanic population increased during the time period of 2000 to 2005 from 5.7% of the State's population to 6.0%. All of the reporting regions in CHNA 9 also experienced an increase in their Black populations during this time period. The reporting regions with the most Blacks as a percent of total population in 2005 were Fitchburg (4.2%), Leominster (4.2%) and the Rural Eastern Towns (3.6%). The reporting regions with the fewest Blacks as a percent of total population in 2005 were the Gardner Area Towns (0.6%), the Fitchburg Area Towns (0.8%) and the Rural Western Towns (0.8%).

Overall, Blacks made up a smaller percentage of the total population in each of the reporting regions than they did in the Commonwealth as a whole. The total Black population within CHNA 9 numbered 7,377 in 2005. A total of 4,428 or 60% of the Blacks in CHNA 9 resided in the JCOH service area, while 2,949 or 40% resided in the non-JCOH towns.

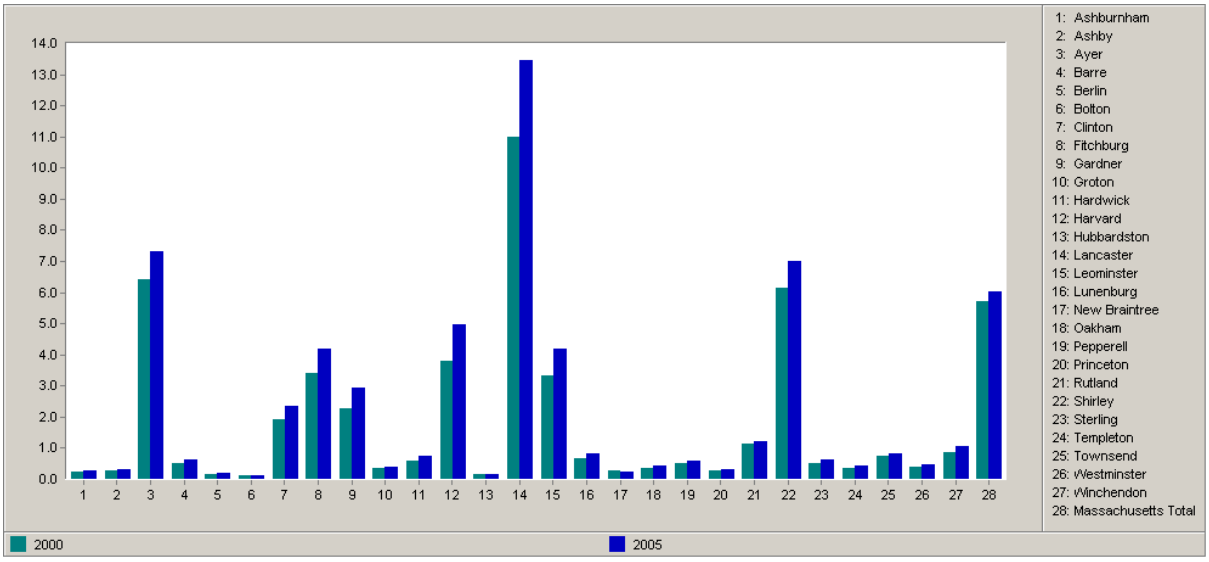
Among the reporting regions, the Rural Eastern Towns had the largest number of Black residents at 2469 or 33.5% of the total number of Blacks in CHNA 9. Leominster had the second largest number of Blacks in CHNA 9 at 1759 (24% of CHNA 9 total), followed by Fitchburg with 1,697 or 23% of the CHNA 9 Black population. The Rural Eastern Towns, Fitchburg and Leominster combined had a total of 5925 Black residents in 2005, constituting a full 80% of the Black population within CHNA 9.

Blacks as a Percent of Population (2000 versus 2005)



Overall, the Black population in CHNA 9 increased by 1,503 people between 2000 and 2005. The Rural Eastern Towns had a net increase in Black population of 449 residents or almost 30% of the increase experienced by CHNA 9. Leominster experienced a net increase of 388 Blacks or 25.8% of the overall increase in black population in CHNA 9, while Fitchburg saw a net increase of 358 people among its Black residents, accounting for 23.8% of the increase in Black population within CHNA 9.

Blacks as Percent of Population (2000 versus 2005)



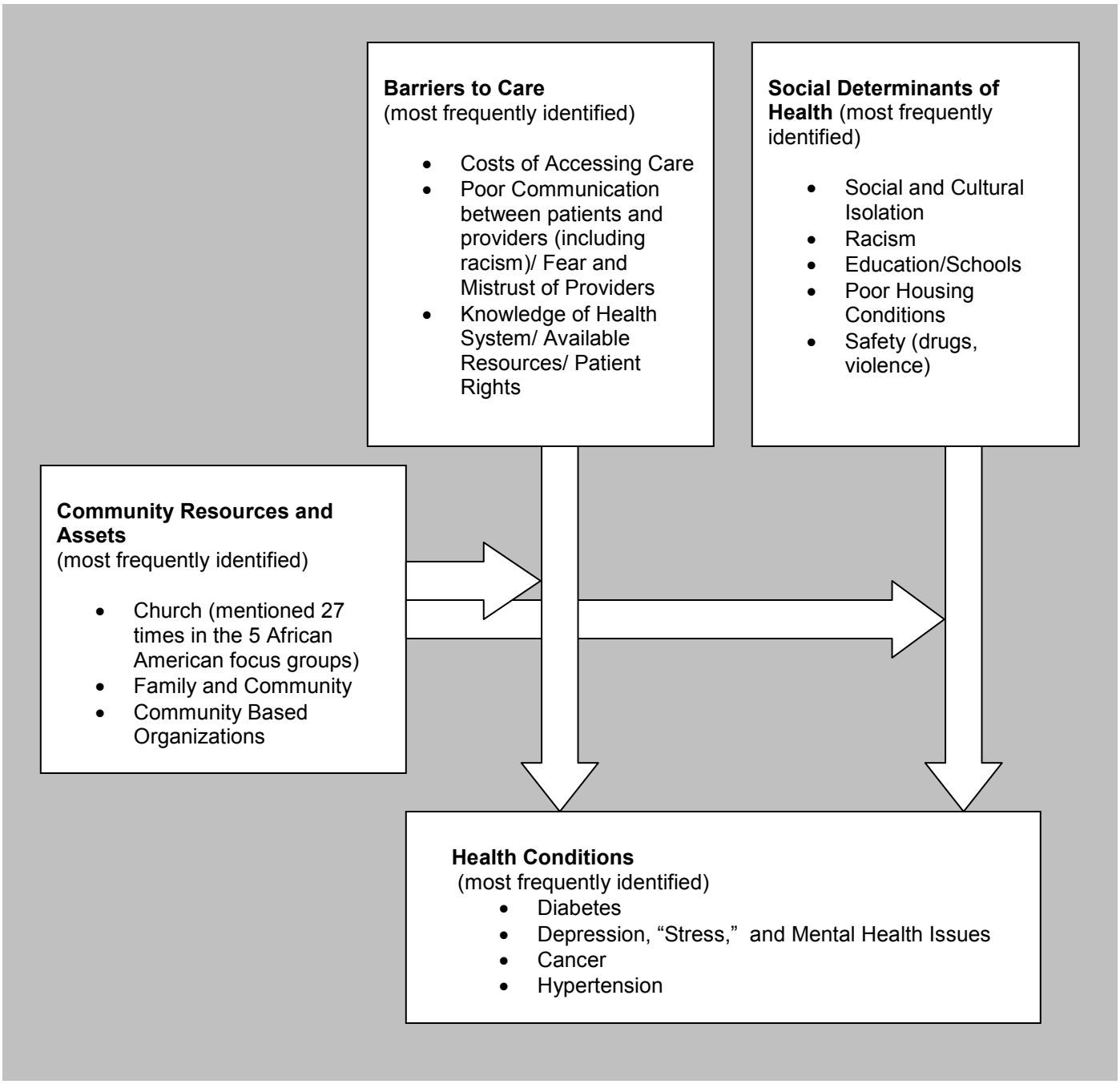
There were three towns within the Rural Eastern Towns in which Blacks made up a larger percentage of residents than the State average in 2005. These towns were Lancaster, in which Blacks made up 13.5% of the population, followed by Ayer at 7.3% and Shirley at 7%. Closely behind these towns was Harvard, with a Black population of 5% of its total. These four towns had a combined Black population of 2,295, constituting 93% of the Blacks in the Rural Eastern Towns and 31% of the Blacks in CHNA 9.

Lancaster, Ayer, Shirley and Harvard were also notable relative to the growth in Black population within these towns between 2000 and 2005. Lancaster alone accounted for 50% of the growth in Black population within the Rural Eastern Towns, with the addition of 224 Black residents during the 2000 to 2005 time period. Harvard, Ayer and Shirley combined accounted for 43.2% of the remainder of the growth in Black population within the Rural Eastern Towns.

As discussed throughout this report, specific racial and ethnic communities within the study area identified: specific health conditions affecting themselves and their families; sources of stress/barriers to health and well being; and resources and sources of support. While there were themes that permeated the data from all groups (e.g., the effects of the depressed economy), the issues and assets identified varied across racial and ethnic groups.

In this portion of the **Demographics** section discussing the Black, Non-Hispanic Population, an outline of the qualitative findings related to health concerns and assets is summarized in a graphic and text on the following pages. In the writing of this assessment, the authors of this Study have chosen to use the term African American (rather than Black) when referring to the race of focus group participants and interviewees, as participants self-identified as African American. In contrast, in the quantitative sections of the assessment, one will see the term “Black.” This is the term used by the U.S. Census Bureau and other major data sources when describing race. A summary of all groups is also contained in the **Executive Summary** of this report.

African American



African American

Voices from the Community

- **Social and Cultural Isolation and Racism**

  "….there are no cultural things around here for African Americans. Kids need to see that there is a broader world out there."

  "I finally have two friends after having been here for some time."

  "I feel like I walk around on eggshells. I am the only Black person there... [at work]. I have to try twice as hard and have to bite my tongue [when I see racism]. It hurts me mentally every day."

  "There are no people of color on FATV, city hall, maybe an Asian but no Black – this is part of the stress…we don't see it and neither do our kids."

  "If you can't find a person that you can talk to…it's almost like missing a leg…it was culture shock when I moved from [the south]. Things are different here. I chose a white collar job with mostly white people. I didn't understand the racism that is undercover here versus what's in your face. [Down south] you know exactly where you stand."

- **Costs of Accessing Care**

  "Better coverage costs more, so I opted for a cheaper plan, then I got sick and had more out-of-pocket costs. Not being able to able to afford good health care results in getting behind in health and stress!"

- **Knowledge of Health System/ Available Resources/ Patient Rights**

  "I don't know what's out there (for services). I get MassHealth. It's difficult for me to get health care if I have other problems. Like if I have housing issues, if I know I am going to be homeless. I don't think about my health care if I have support issues. If I think I am going to be homeless I don't think about having a doctor's appointment. I had to pay market rate rent while receiving Social Security (SSI). I'm in transitional housing now but you can only stay two years and I am almost up to the limit. My health comes secondary to just trying to live on a daily basis."

- **Community Assets/ Sources of Support: Church**

  "Church and friends are most important. Because of my income bracket I don't get the freebees, that is why I need to take advantage of what the church has to offer. Church represents rest and peace."

"Church lets me know who I am, what I am and what I'm going to be. I was an addict. I've burned bridges but they still accept me."

- **Community Assets/ Sources of Support: Family and Community**

  "I've got the best family in the world. We have Sunday dinners. We talk every day. Family is the strongest thing in my life. My mother keeps us together, keeps us talking with each other."

  "I went through a stage of depression when I found out I was going blind. My faith keeps me. I stick to my diet and get plenty of rest. My family is like this. (She claps her hands tightly together and interlocks her fingers). And my extended family-the kids around here are real nice. That's part of the healing."

  "Our own people."

  "Getting together with older women… my sisters, I learn a lot about how to deal with the things I am going through. We have so much to offer to one another but we need to find more opportunities to connect."

- **Community Assets/ Sources of Support: Community Based Organizations**

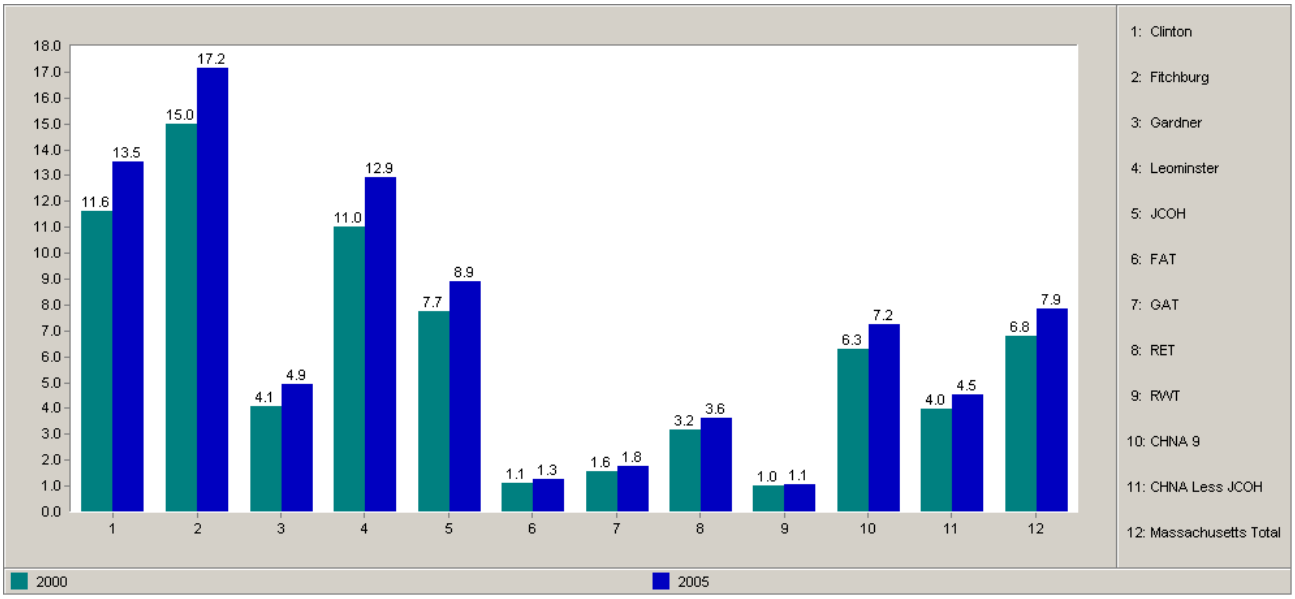
  "The community leadership helps, civic leadership and church and community organizations. The churches help the carnival at St. …. The little things help to lift us emotionally. Sometimes even the hardships help to bring out the best in us."

Hispanic Population

Within the Commonwealth of Massachusetts, the Hispanic population increased during the time period of 2000 to 2005 from 6.8% of the Commonwealth's population to 7.9%. All of the reporting regions in CHNA 9 also experienced an increase in their Hispanic populations during this time period. The reporting regions with the most Hispanics as a percent of total population in 2005 were Fitchburg (17.2%), Clinton (13.5%), Leominster (12.9%) and Gardner (4.9%). The reporting regions with the fewest Hispanics as a percent of total population in 2005 were the Rural Western Towns (1.1%), the Fitchburg Area Towns (1.3%) and the Gardner Area Towns (1.8%).

Overall, Hispanics made up a larger percentage of the total population in Fitchburg, Clinton and Leominster in 2005 than they did in the Commonwealth as a whole, with Fitchburg's Hispanic population at more than twice the Commonwealth's when measured as a percent of population. In addition, it is interesting to note that the total Hispanic population within CHNA 9 numbered 18,884 in 2005, more than 2.5 times the number of Blacks in CHNA 9. A total of 14,321, or 76%, of the Hispanics in CHNA 9 resided in the JCOH service area, while 4,563, or 24%, resided in the non-JCOH towns.

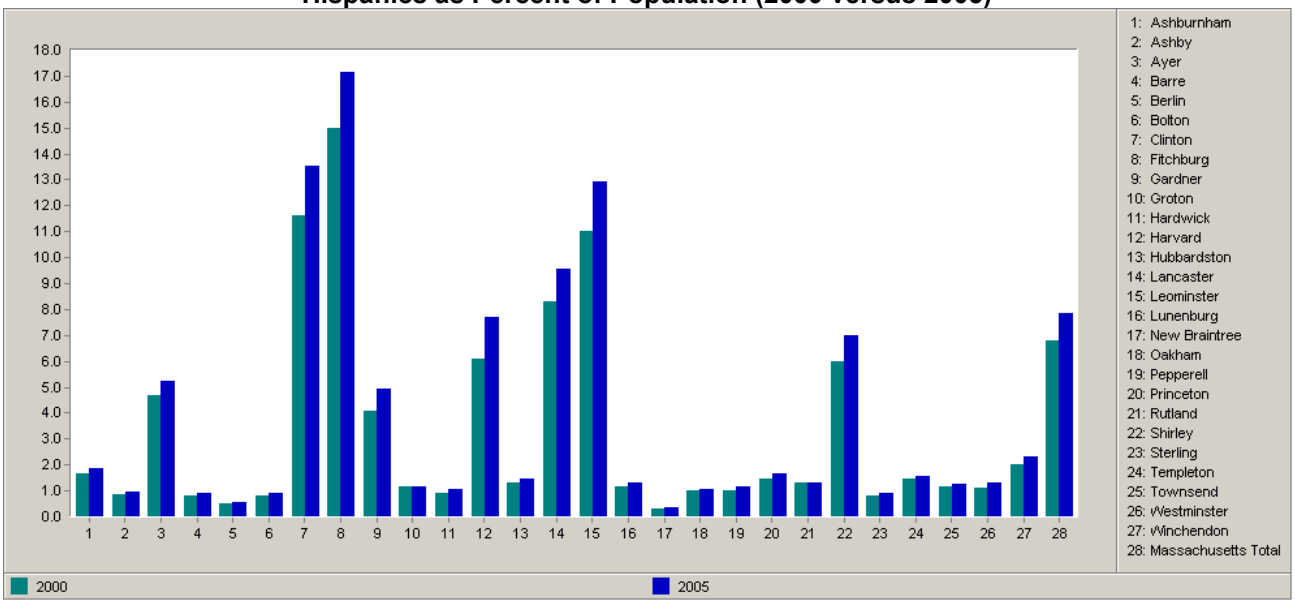
Hispanics as Percent of Population (2000 versus 2005)



Among the reporting regions, Fitchburg had the largest number of Hispanic residents at 6,953, or 37%, of the total number of Hispanics in CHNA 9. Leominster had the second largest number of Hispanics at 5,441 (29% of CHNA 9 total), followed by the Rural Eastern Towns with 2472, or 13%, of CHNA 9 Hispanic population. Fitchburg, Leominster and the Rural Eastern Towns combined had a total of 14,866 Hispanic residents in 2005, constituting 79% of the Hispanic population within CHNA 9.

Overall, the Hispanic population in CHNA 9 increased by 3,046 people from 2000 to 2005. Fitchburg saw a net increase of 1085 people among its Hispanic residents, accounting for 35.6% of the increase in Hispanic population within CHNA 9, while Leominster experienced a net increase of 883 Hispanics or 29% of the overall increase in Hispanic population in CHNA 9.

Hispanics as Percent of Population (2000 versus 2005)



A closer look at the individual Rural Eastern Towns indicates that in 2005 Lancaster was the only town in which Hispanics made up a larger percentage of residents than the state average at 9.5% of the population versus the State's 7.9%. There are 3 additional Rural Eastern Towns in which Hispanics constituted more than 5% of the population: Harvard at 7.7%, Shirley at 7% and Ayer at 5.2%. These four towns, Ayer, Harvard, Lancaster and Shirley, have a combined Hispanic population of 2036, constituting 82% of the Hispanics in the Rural Eastern Towns and 11% of the Hispanics in CHNA 9.

Lancaster and Harvard were also notable relative to the growth in Hispanic population within these towns between 2000 and 2005. Lancaster alone accounted for 31.7% of the growth in Hispanic population within the Rural Eastern Towns, with the addition of 126 Hispanic residents during the 2000 to 2005 time period, while Harvard, with an increase of 106 Hispanic residents, accounted for 26.7% of the increase in Hispanic population in this region.

In this portion of the **Demographics** section discussing the Hispanic population, the qualitative data gathered will be reviewed. The authors of this study would like to note that they have chosen to use the term "Latino" (rather than Hispanic) when referring to focus group participants and interviewees, as participants self-identified as Latino (or by their specific country of origin). In contrast, in the quantitative sections of the assessment, one has seen the term "Hispanic." This is the term used by the U.S. Census Bureau and other major data sources.

The authors would also like to emphasize that there exists a challenge in identifying Latinos in one group given the different ethnicities, dialects, races and cultures associated with this group. There are 20 countries in Latin America and two major Latin languages spoken which are Spanish and Portuguese; however, there exist many languages that are still spoken by the many indigenous peoples within the countries (e.g., a form of Creole that is spoken in the Caribbean and some coastal countries of Central America). Each country has its challenges, consisting of socioeconomic barriers, political unrest, and historical relationships with the U.S., all of which create very different social and economic indicators.

Through anecdotal data from Latino serving agencies in the area, it is agreed that Latino immigrants and Latinos come largely from Puerto Rico and the following Latin American countries (in order of highest to lowest populations in the Study Area): Puerto Rico;[7] Uruguay; Dominican Republic; Brazil; Colombia; El Salvador; Honduras; Guatemala; and Mexico[8]. According to the Department of Homeland Security, there are over 3,000 legal permanent residents in Fitchburg and Leominster that are eligible to become citizens.

An outline of the qualitative findings related to health concerns and assets identified by Latinos is summarized in a graphic and text on the following pages. As discussed throughout this report, specific racial and ethnic communities within the study area identified specific health conditions affecting themselves and their families, sources of stress/barriers to health and well being, and resources and sources of support. While there were themes that permeated the data from all groups (e.g., the effects of the depressed economy), the issues and assets identified varied across racial and ethnic groups. Qualitative data for each of the other groups is contained throughout the **Demographics** section. A summary of all groups is also contained in the **Executive Summary** of this report.

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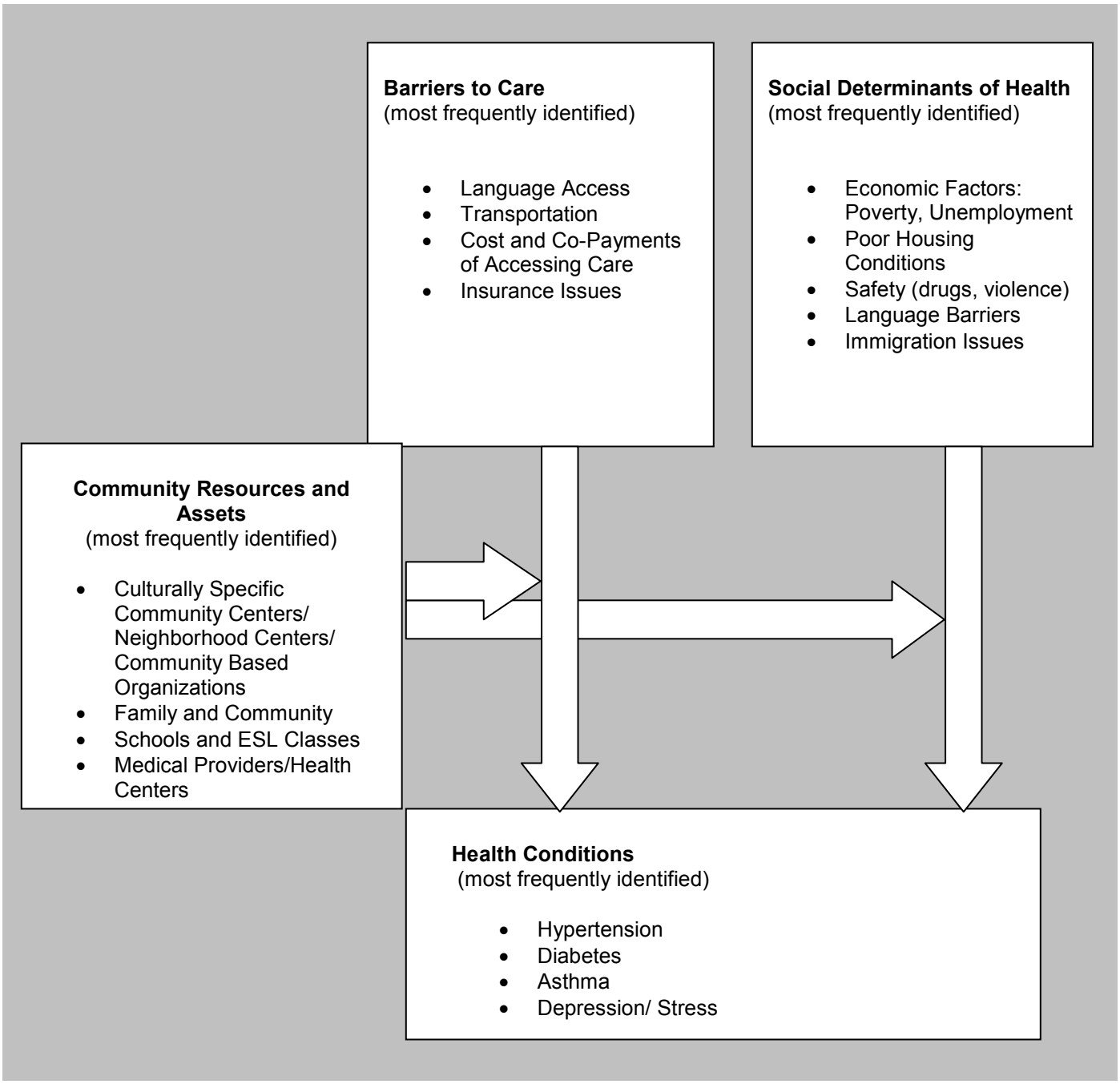
[7] Puerto Rico is a territory of the U.S. and its inhabitants are U.S. citizens; however, the cultural nationalism of Puerto Ricans gives them a national identity.

[8] In New England, Mexicans represent the smallest, although increasing, Latino ethnic group; however, nationally it is the largest group in the U.S.

Latino


Barriers to Care
(most frequently identified)
Language Access
Transportation
Cost and Co-Payments of Accessing Care
Insurance Issues
Social Determinants of Health
(most frequently identified)
Economic Factors: Poverty, Unemployment
Poor Housing Conditions
Safety (drugs, violence)
Language Barriers
Immigration Issues
Community Resources and Assets
(most frequently identified)
Culturally Specific Community Centers/ Neighborhood Centers/ Community Based Organizations
Family and Community
Schools and ESL Classes
Medical Providers/Health Centers
Health Conditions
(most frequently identified)
Hypertension
Diabetes
Asthma
Depression/ Stress

Latino

Voices from the Community

- **Language Access**

  "Language is the biggest barrier the Latino community faces."

  "If you say that you don't speak English people get upset. I know we have to speak English but it's very difficult to learn, it's complicated."

- **Transportation**

  "I don't have personal transportation. I can't afford transportation…I got sick walking to the doctor's office!"

  "Transportation [that's available]…they have limited operating hours. People don't go if they don't have transportation. If people don't have income or insurance things just get worse, they don't get treatment and they die." (Youth)

- **Poverty and Unemployment**

  "…it's difficult finding a job…and job loss…if you lose your job you are screwed…you cannot meet expenses, it causes depression…and you become dependent on agencies and government with all the worry about qualifications."

  "*There are few jobs in our community…Language makes it more complicated*."

- **Community Assets/ Sources of Support: Community Based Organizations**

  "The community centers [are the best resources]… because any problem that we have we can come here and get help, they are always accommodating us."

  "Community centers that help and direct people in the right direction, with after school help for families and help with financial needs, overall help for Latinos…We, as people, need to offer help to our own families. We need a place for youth and help adults to move on in life professionally."

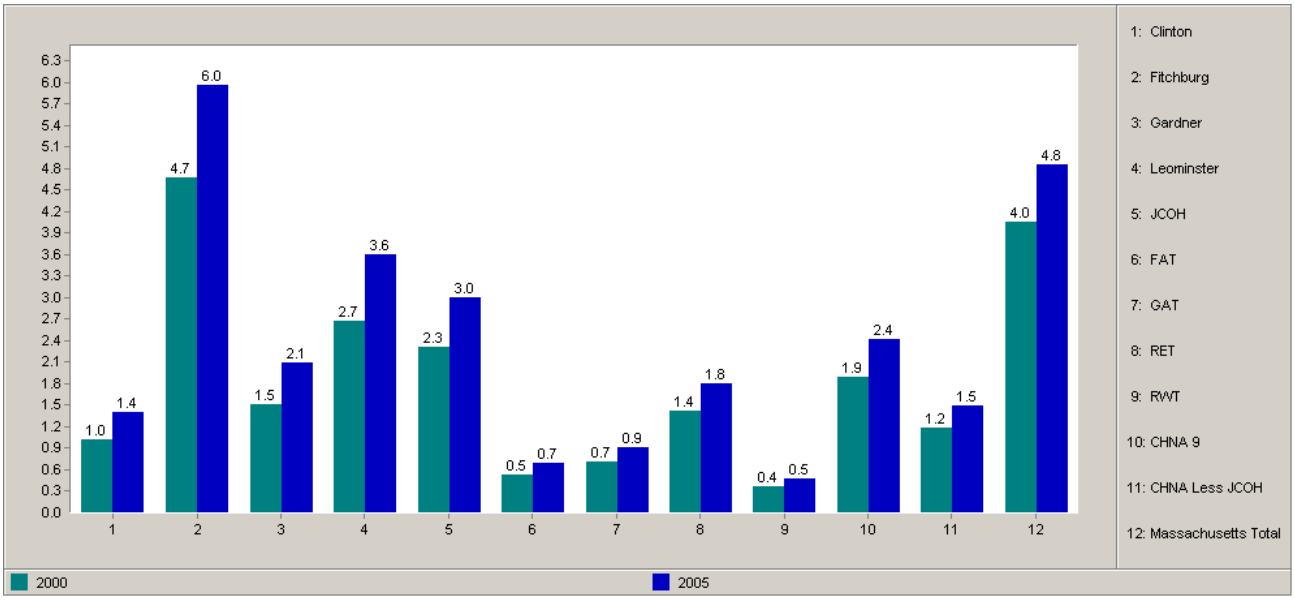
  "I am afraid to use other resources because they may ask for documentation and may not speak Spanish."

Asian Population

Within the Commonwealth of Massachusetts, the Asian population increased during the time period of 2000 to 2005 from 4% of the Commonwealth's population to 4.8%. All of the reporting regions in CHNA 9 also experienced an increase in their Asian populations during this time period. The reporting regions with the most Asians as a percent of total population in 2005 were Fitchburg (6%), Leominster (3.6%) and Gardner (2.1%). The reporting regions with the fewest Asians as a percent of total population in 2005 were the Rural Western Towns (0.5%), the Fitchburg Area Towns (0.7%) and the Gardner Area Towns (0.9%).

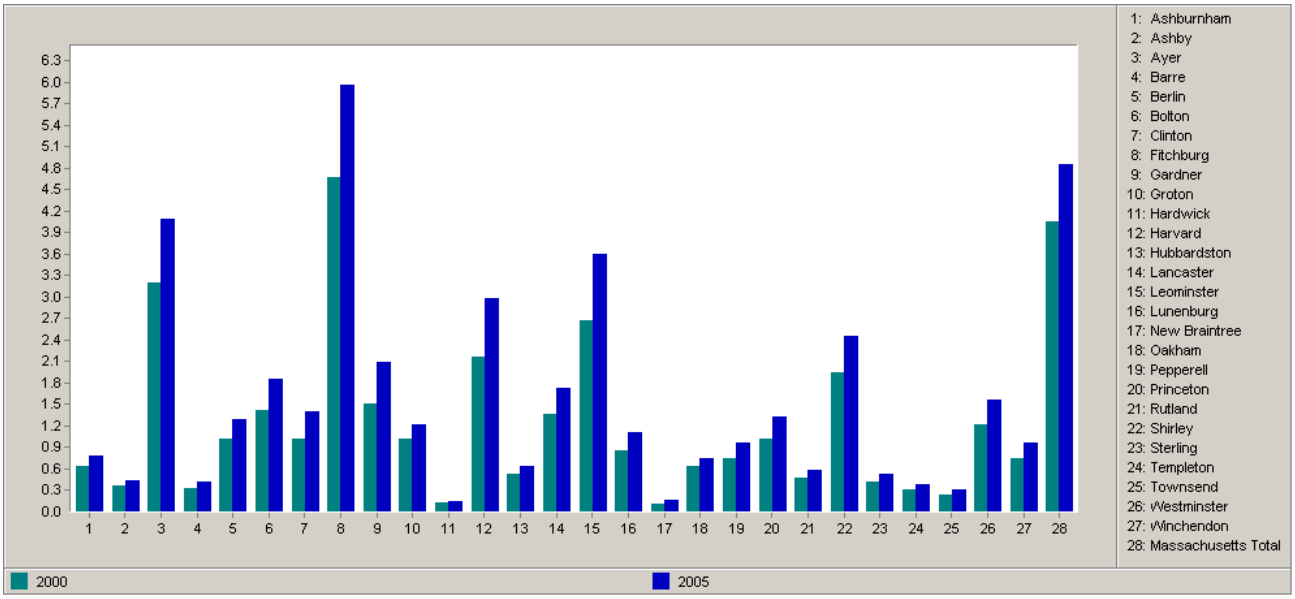
Overall, Fitchburg was the only reporting region in CHNA 9 to have Asians make up a larger percentage of its total population in 2005 than they did in the Commonwealth as a whole. The total Asian population in CHNA 9 numbered 6335 in 2005. A total of 4837, or 76%, of the Asians in CHNA 9 resided in the JCOH service area, while 1,498, or 24%, resided in the non-JCOH towns.

Asians as Percent of Population (2000 versus 2005)



Within the reporting regions, Fitchburg had the largest number of Asian residents with 2,416, or 38%, of the total number of Asians in CHNA 9. Leominster had the second largest number of Asians at 1515 (24% of the CHNA 9 total), followed by the Rural Eastern Towns at 1217, or 19%, of CHNA 9 Asian population. Fitchburg, Leominster and the Rural Eastern Towns combined had a total of 5148 Asian residents in 2005, constituting 81% of the Asian population within CHNA 9.

Asians as Percent of Population (2000 versus 2005)



The Asian population in CHNA 9 increased by a net of 1,619 people from 2000 to 2005. Fitchburg experienced a net increase of 587 people among its Asian residents or 36.3% of the increase in Asian population within CHNA 9. Leominster saw a net increase of 413 Asians (25.5% of the increase in CHNA 9), while the JCOH as a whole had an increase in Asian population of 1,248 residents or 77% of CHNA 9 increase.

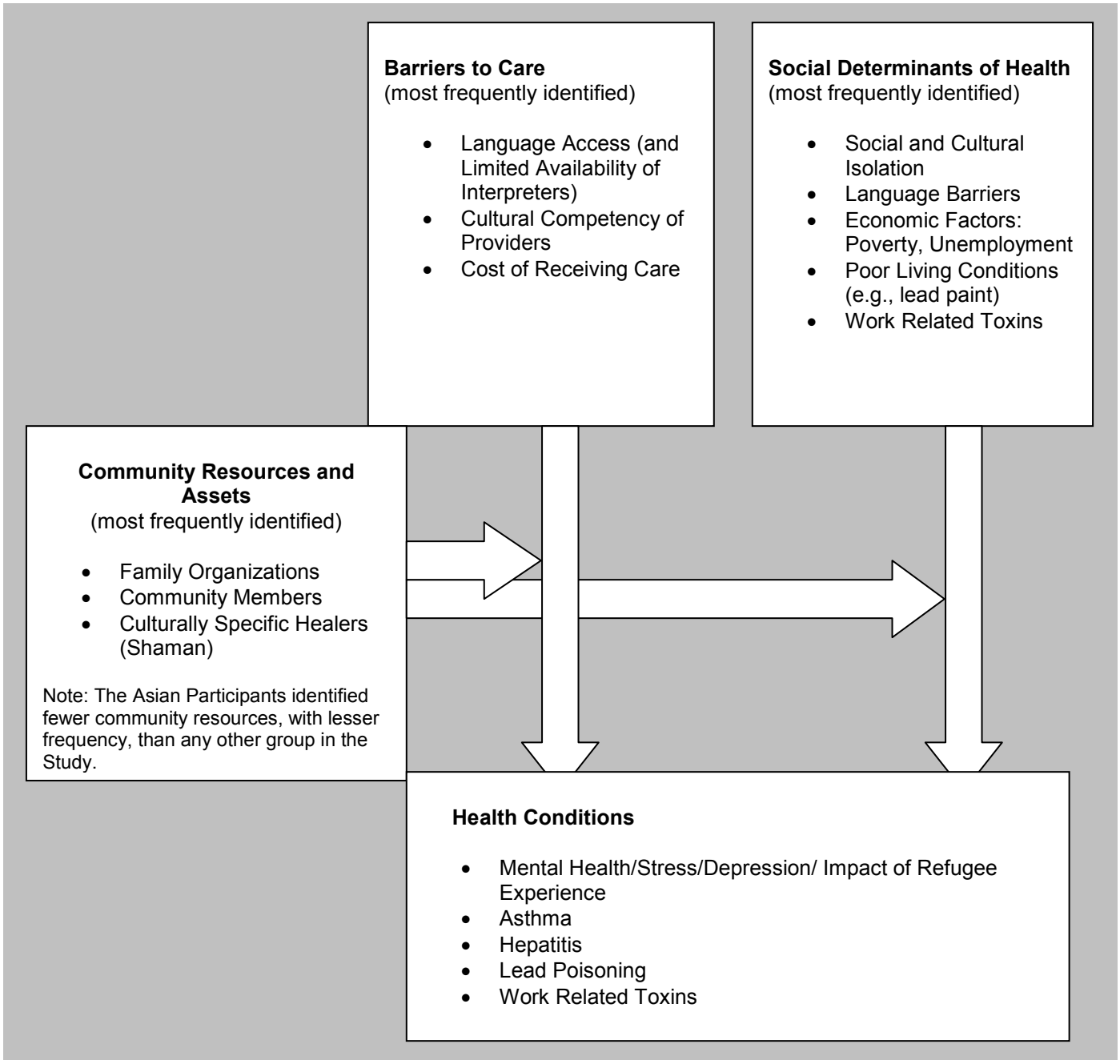
Within the Rural Eastern Towns, there are 3 towns in which Asians constituted more than 2% of the population in 2005: Ayer at 4%; Harvard at 3%; and Shirley at 2.5%. These 3 towns had a combined Asian population of 656, or 54%, of the Asians in the Rural Eastern Towns and 10% of the Asians in CHNA 9.

Ayer alone accounted for 21% of the growth in Asian population within the Rural Eastern Towns, with the addition of 60 Asian residents during the 2000 to 2005 time period. Harvard, with an increase in Asian population of 52 residents accounted for 18% of the increase in Asian population with the Rural Eastern Towns.

As discussed throughout this report, specific racial and ethnic communities within the study area identified specific health conditions affecting themselves and their families; sources of stress/barriers to health and well being; and resources and sources of support. While there were themes that permeated the data from all groups (e.g., the effects of the depressed economy), the issues and assets identified varied across racial and ethnic groups.

In this portion of the **Demographics** section discussing the Asian communities, an outline of the qualitative findings related to health concerns and assets is summarized in a graphic and text on the following pages. In this report, the qualitative data refers to the Lao and Hmong communities. Qualitative data for each of the other groups is contained throughout the **Demographics** section. A summary of all groups is also contained in the **Executive Summary** of this report.

Asian (Lao and Hmong)



Asian

Voices from the Community

- **Language Access**

  "Language is a big problem. No doctors speak our language [Hmong]…this results in misunderstandings and miscommunication."

  "Discrimination…it happens when you don't speak the language."

  "There is a lack of professional interpreters…there is a lot of mistrust for the interpreters in our communities [re: accuracy and confidentiality]."

  "Having my young daughters miss school to help translate was hard because I understand that they should be in school getting an education."

- **Mental Health/ Stress/ Depression/ Impact of Refugee Experience**

  "Stress and depression…from the Vietnam War and from current living conditions."

  "In my childhood I was a refugee. I didn't know if I was going to survive. There was no good food, no health care, no space, it was always packed. It is permanent. It is always with you. It affects your physical and mental health forever."

  "I had refugee status, had welfare, then my refugee status ended, welfare ended, I applied for disability, but am not qualified because refugee status ended and I'm not a citizen. It will take 5 years for U.S. citizenship preparation. It is not worth living. Maybe I will die soon."

  "I have depression…This is from the Vietnam War. We had no place to go, nothing to eat. We were living in the jungle. My mom talks about how she took care of us and how she worked so hard. I told her that I worked hard too. I was 10 years old and going to school and working three jobs."

  "You don't have a permanent place to live. You come here you don't know the language and you have to find a job. If you live in an apartment you just survive. People don't care about you. It affects your health. They don't care about your quality of life."

  "There are cultural issues…I could not explain my illness to the doctor…they could not explain it to me."

- **Cultural Competency of Providers**

  "I feel that the doctors are not sensitive to my needs or beliefs…I do not have trust for the doctor or the people who are translating for me.''

  "Doctors talk to you as if you are stupid, doctors can be rude…There's bias. People treat you different if you don't speak the language…people are rude, or they show pity."

- **Social and Cultural Isolation**

  "I am very isolated and rely on my family not others."

  "We are the only Asians on the block. It's hard for others to understand us, so we stay with our own family or with the Asian community."

  "Being a Hmong man is hard. There is no place to worship your religion. There is no place for us to work as a group. The people don't have any resources. Family members are a resource, but they will not share with others...If you say go to the food pantry they will be afraid. They are afraid you will get their personal information (Social Security number, name, address) and use it for your own benefit. They are afraid that they will lose their identity."

- **Community Assets/ Sources of Support**

  "In our community we have Shaman and soul calling. Soul calling is $600. Fight the demon is $1,000."

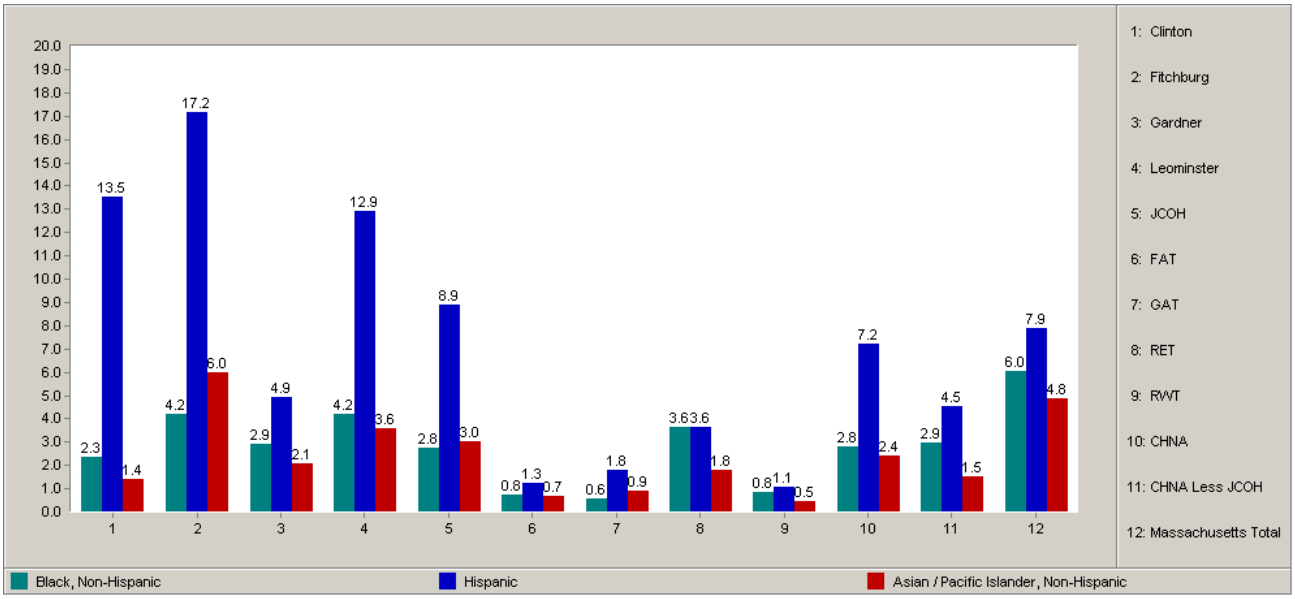
  "My people do not rely on local agencies. They only believe what comes from their own hands. They believe in taking care of their soul."

  "Staying healthy you need to do more than going to a hospital or health clinic. The city has provided parks for its residents to exercise. There are also gyms you can join."

  "Going out to the temple and out to dinner with my family is all I need. I will die a happy man."

Overall Racial/Ethnic Populations

Percent of Population by Racial/Ethnic Group (2005)



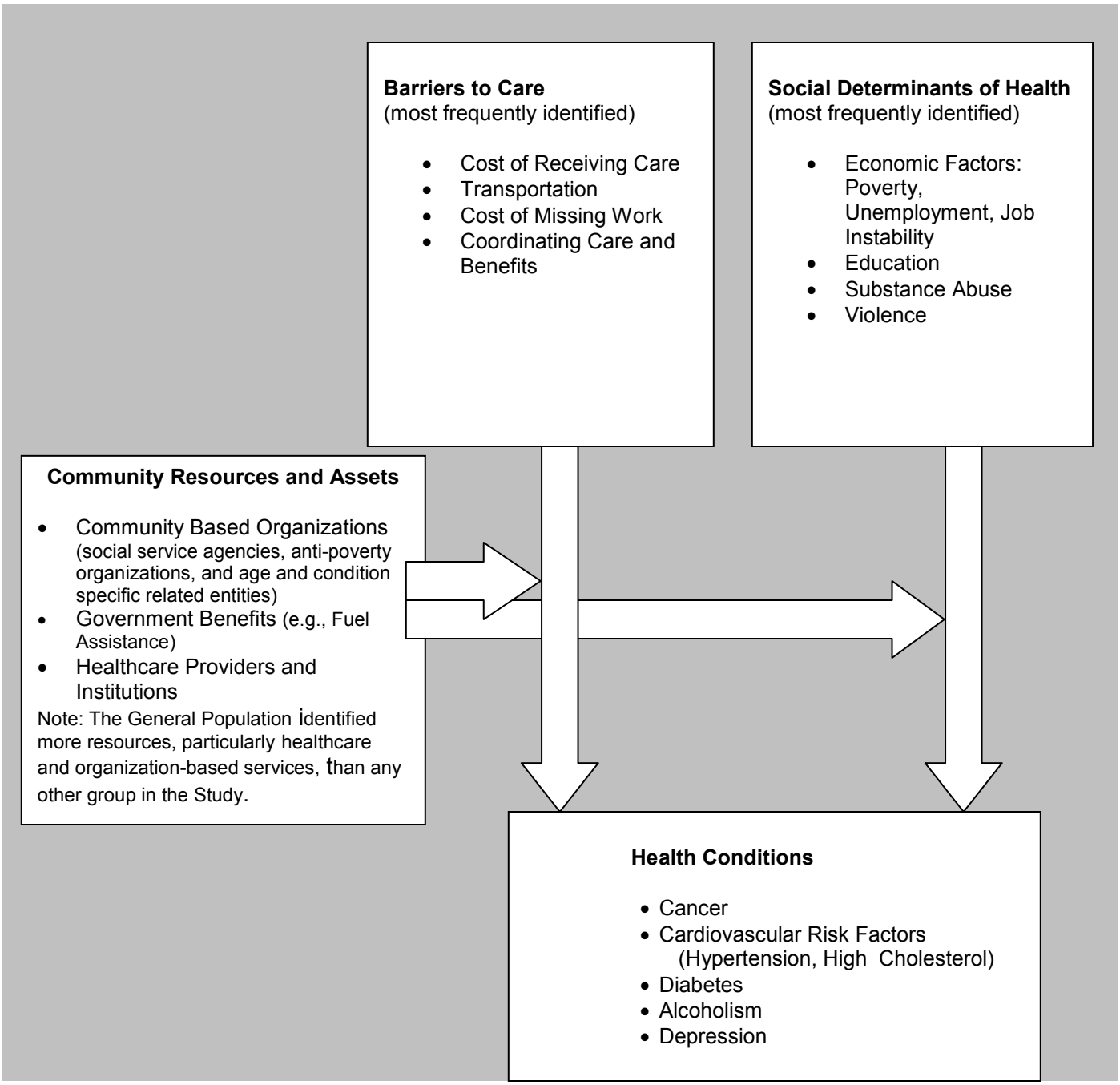
As shown in blue in the graph above, within the reporting regions in CHNA 9, Hispanics comprise the racial/ethnic minority group with the highest percentage of population. Although Blacks are the racial/ethnic minority group with the second highest percentage of population within the Commonwealth and within most of the reporting regions in CHNA 9, Asians are the racial/ethnic minority group with the second highest percentage of population in Fitchburg, the Gardner Area Towns and the JCOH as a whole.

General Population

As discussed throughout this report, specific racial and ethnic communities within the study area identified specific health conditions affecting themselves and their families, sources of stress/barriers to health and well being, and resources and sources of support. While there were themes that permeated the data from all groups (e.g., the effects of the depressed economy), the issues and assets identified varied across racial and ethnic groups.

In this portion of the **Demographics** section discussing the general population, an outline of the qualitative findings related to health concerns and assets is summarized in a graphic and text on the following pages. In this study, the qualitative data identified as “General Population” comprises 95% non Hispanic Caucasian individuals. Qualitative data for each of the other groups is contained throughout the **Demographics** section. A summary of all groups is also contained in the **Executive Summary** of this report.

General Population



General Population

Voices from the Community

- **Impact of Unemployment/ Job Instability**

> *"Lack of jobs makes it difficult for people in [specific town] to get good health care. Job opportunities… [It's difficult] to get proper nutrition when you don't have enough money."*
>
> *"The lack of jobs and job loss too. It increases the stress and the substance abuse."*
>
> *"When you're living off unemployment, there's no health care."*
>
> *"I can't go to day time appointments due to my pay will be docked."*

When asked about the factors affecting health, a political stakeholder identified jobs:

> *"I think it's the jobs. The problem is supporting your family…It's stressful trying to keep your job and keep your family together. A customer [just] came in talking about people losing their jobs. The children coming up are not happy with the low level jobs they have. Even high level jobs like engineering, they have had to take salary cuts. They had to readjust to live within the lower salary. I wish there were the ability for the government to provide an environment where people can have a good living, provide food for their families and their activities."*

As a political stakeholder noted describing the economic struggles people are facing:

> *"[They tell you] to…pull yourself up by your own boot straps…what happens when you don't have boots?"*

- **Costs of Receiving Care**

> *"When I had back problems co-pays were up to $60 a week. Acupuncture helped but it was $60-$100 per week. It wasn't covered. Sometimes I had to make a choice between medication and groceries for the week."*
>
> *"There's the 'donut hole' when you reach the yearly limit, the costs for medications for the rest of the year must come out of pocket. My inhaler is $150, so I try to stretch its use."*

- **Transportation**

As was stated in a focus group conducted in one of the rural communities

> *"Dialysis is in Fitchburg. There is no public transportation. [the available transportation] is inconvenient you must wait hours. You have to depend on friends and family."*

As was expressed in a youth focus group:

> *"If people don't have jobs, they get their cars towed. Repo!"*
>
> *"If people don't have income or insurance things just get worse, they don't get treatment and they die." (Youth)*
>
> *"Half of [specific town] don't have jobs. They depend on other people, they go crazy, get evicted. Families start breaking apart…They owe people money. It causes violence." (Youth)*

- **Violence**

> *"I am disturbed by the murders, abuses to me and other people…abuses both mental and physical, within the family and community." (Youth)*
>
> ***"****There are murders, suicides, guns, and domestic violence." (Youth)*

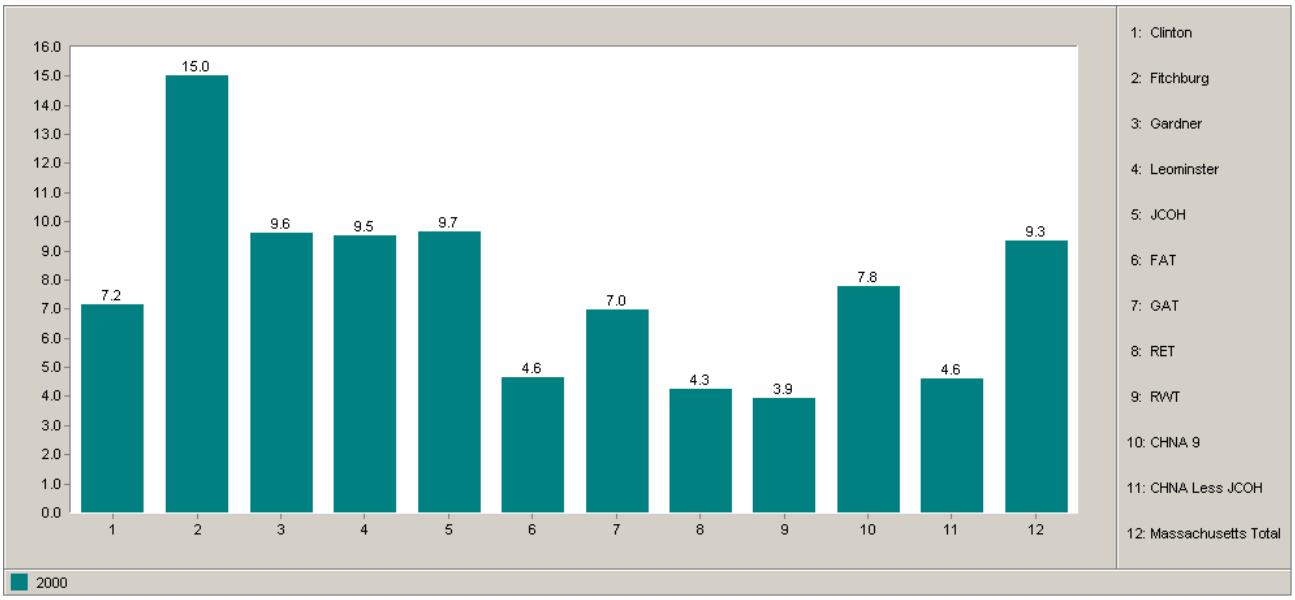
SOCIODEMOGRAPHICS

Income

Population Living Below 100% of the Poverty Level

One way to assess the financial status of a community is to examine the percent of the population living below 100% of the poverty level. According to data from the 2000 US Census, 9.3% of the population in Massachusetts was living below 100% of the poverty level. Within CHNA 9, the percent of the population living below 100% of the poverty level was a slightly more favorable 7.8%. However, the JCOH service area was not as fortunate, with 9.7% of its population living below 100% of the poverty level. When the JCOH cities and towns are removed from CHNA 9, the CHNA Less JCOH percentage falls to 4.6%. Clearly, there is a concentration of people below 100% of the poverty level within the JCOH service area.

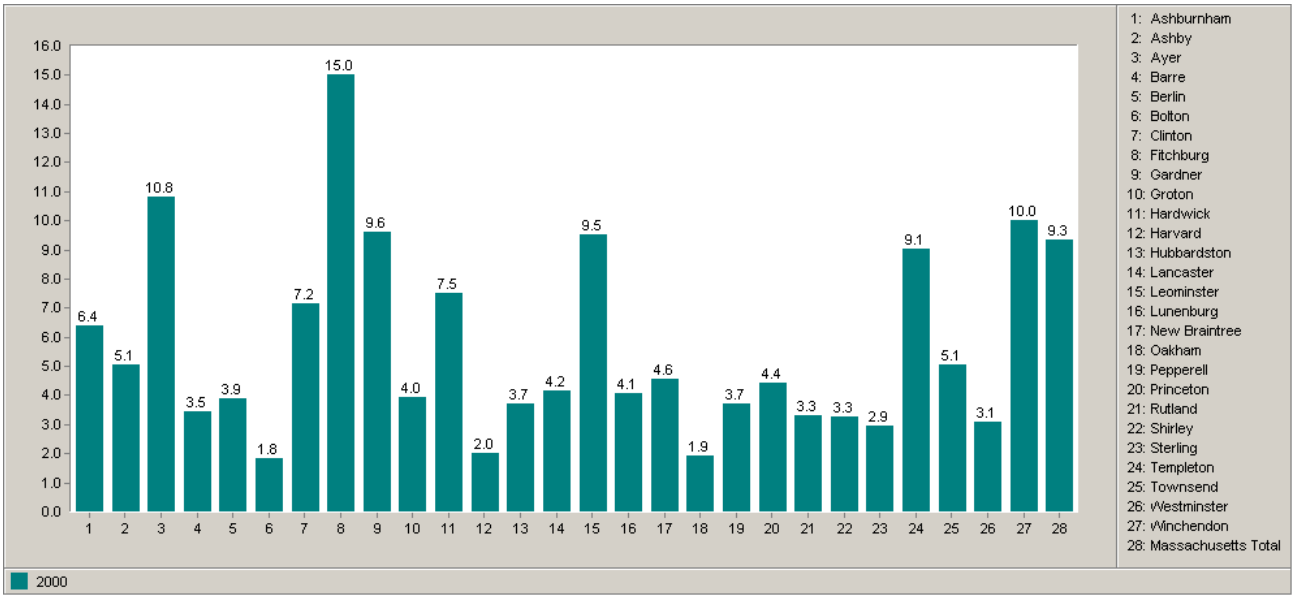
Percent of Population Living Below 100% of the Poverty Level (2000)



Among the reporting regions, Fitchburg had the highest percent of its population living below 100% of the population at 15%, 1.6 times that of the State. Gardner (9.6%) and Leominster (9.5%) also had percentages higher than the State. The lowest percentages of people below 100% of the poverty level were found in the Rural Western Towns (3.9%), The Rural Eastern Towns (4.3%) and the Fitchburg Area Towns (4.6%), all with percentages that were less than half that of the State.

Among individual towns, Ayer at 10.9% and Winchendon at 10% both had percentages of their populations living below 100% that were greater than the Commonwealth's poverty level. The towns with the lowest percentage of people living below 100% of the poverty level were Bolton at 1.8%, Oakham at 1.9%, and Harvard at 2%, all of which had percentages that were approximately one fifth that of the State.

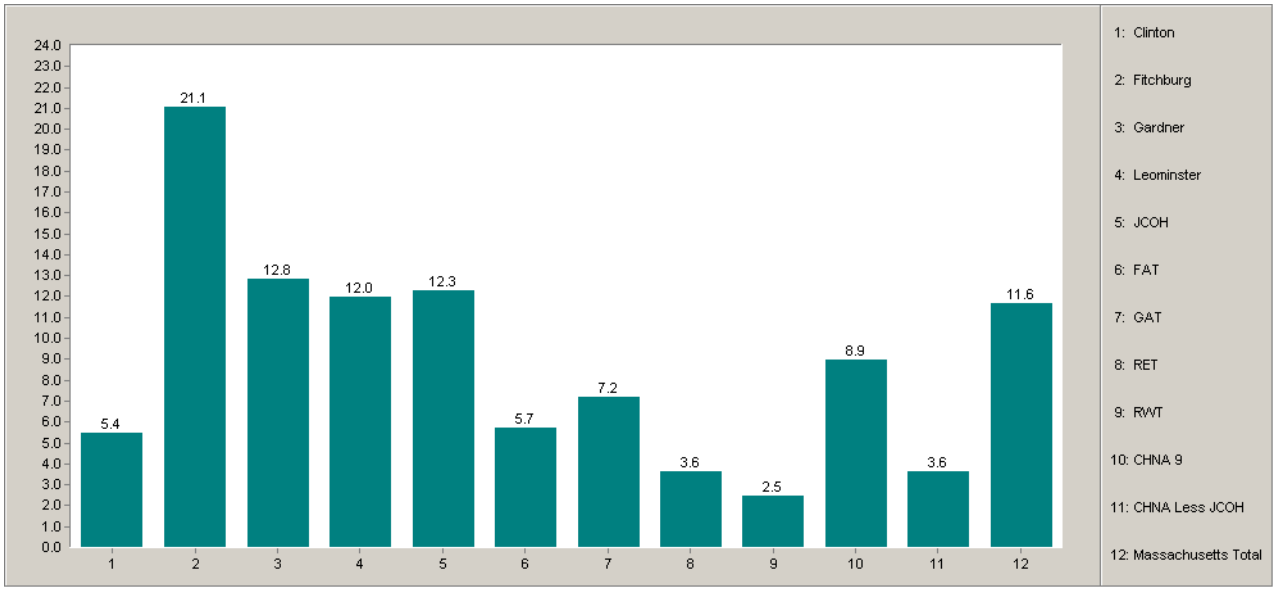
Percent of Population Living Below 100% of the Poverty Level (2000)



Children Living Below 100% of the Poverty Level

According to data from the U.S. Census in 2000, 11.6% of the children in Massachusetts were living below 100% of the poverty level. Within CHNA 9 as a whole, the percent of the children living below 100% of the poverty level was a slightly more favorable 8.9%. However, the JCOH service area was not as fortunate, with 12.3% of its children living below 100% of the poverty level. When the JCOH cities and towns are removed from CHNA 9, the CHNA Less JCOH percentage falls to 3.6%, less than a third of the State's percentage. Again, there is certainly a concentration of children below 100% of the poverty level within the JCOH service area.

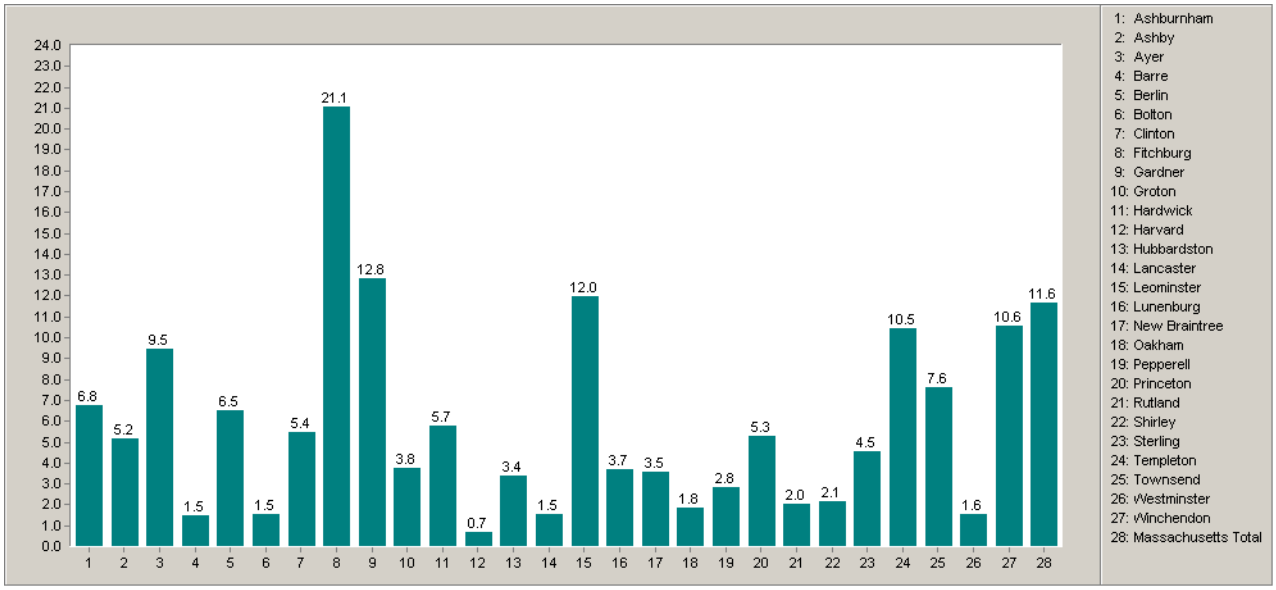
Percent of Children in Families Living Below 100% of the Poverty Level (2000)



Among the reporting regions, Fitchburg had by far the highest percentage of its children living below 100% of the poverty level at 21.1%, 1.8 times that of the State. Gardner (12.8%) and Leominster (12%) also had percentages higher than the State. The lowest percentages of children below 100% of the poverty level were found in the Rural Western Towns (2.5%) and the Rural Eastern Towns (3.6%).

When the individual towns in CHNA 9 are considered, none had percentages of children living below 100% of the poverty level which were higher than the State. The towns with the lowest percentage of children living below 100% of the poverty level in 2000 were Harvard with 0.7% and Barre, Bolton and Lancaster, all with 1.5% of their children living below 100% of the poverty level.

Percent of Children in Families Living Below 100% of the Poverty Level (2000)

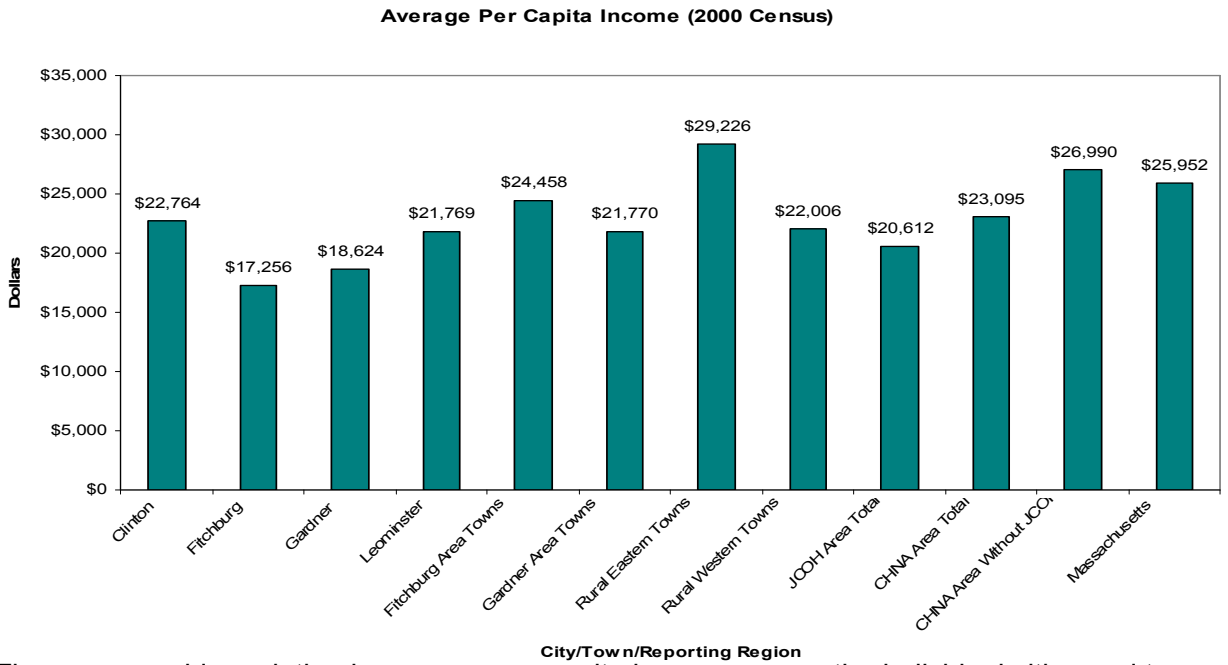


Average per Capita Income

Another indicator of a community's financial health is its average per capita income. Within the State, the average per capita income in 2000 was $25,952. The Rural Eastern Towns at $29,226 was the only reporting region to exceed that number, with the other reporting regions all falling below the State's average per capita income.

Two of the cities in CHNA 9 had average per capita incomes in 2000 of less than $20,000: Fitchburg at $17,256 and Gardner at $18,624.

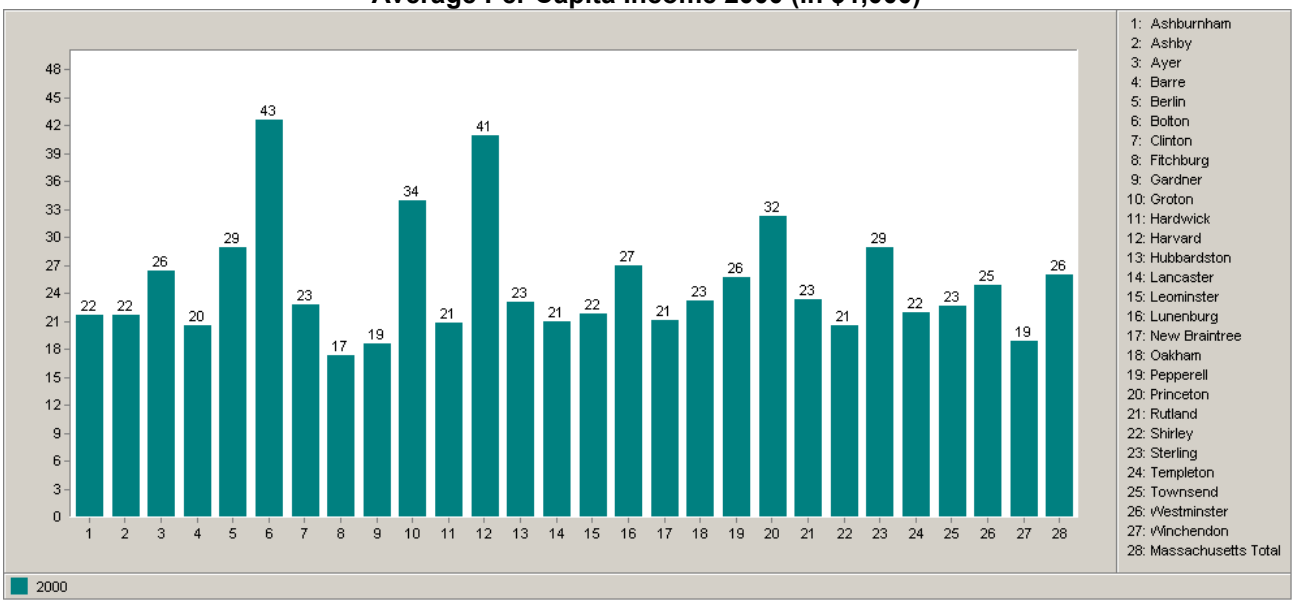
The JCOH as a whole had an average per capita income of $20,612, more than 20% below the State average. The overall CHNA 9 had an average per capita income of $23,095, higher than the JCOH, but still lower than the State. However, when the JCOH cities and towns are removed from CHNA 9, the CHNA Less JCOH average per capita income rises to $26,990, exceeding that of the State. Again, the cities and towns in the JCOH service area appear to be faring less well financially than CHNA 9 towns outside of the JCOH.



There was a wide variation in average per capita income among the individual cities and towns within CHNA 9 in 2000. The lowest average per capita income was found in Fitchburg, followed closely by Gardner and Winchendon, all with figures less than $20,000. Sixteen additional cities/towns had average per capita incomes in the low to mid 20s.

Only 8 towns reported average per capita incomes which were greater than the State. Four of these, all part of the Rural Eastern Towns reporting region, had an average per capita income in excess of $32,000: Princeton ($32,232); Groton ($33,877); Harvard ($40,867); and Bolton ($42,542). Each of these towns had an average per capita income that was not only 1.25 to 1.64 times the State average, but was also 1.87 to 2.47 times Fitchburg's average per capita income.

Average Per Capita Income 2000 (in $1,000)

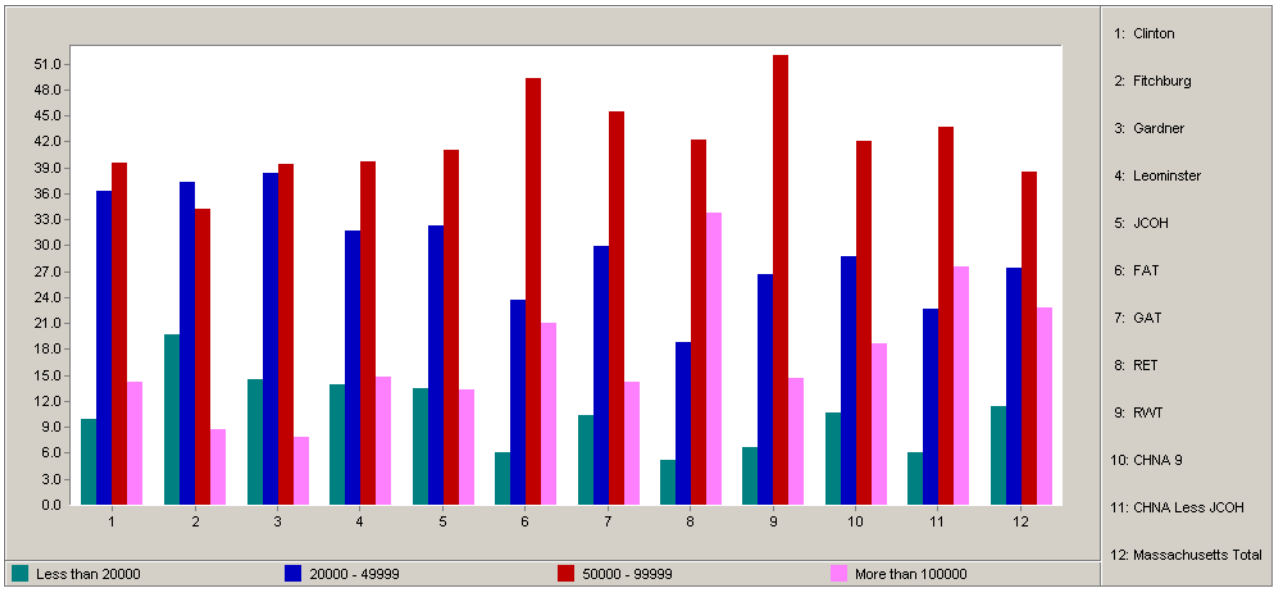


Annual Family Income

A review of the distribution of annual family income may be helpful. Within the Commonwealth as a whole, 11.4% of families had annual incomes of less than $20,000 in 2000. Within the reporting regions, only the 3 cities had higher percentages of families with annual incomes of less than $20,000, with Fitchburg at 19.7%, Gardner at 14.5% and Leominster at 14%. The JCOH as a whole also had a higher percentage of families with annual incomes in this range at 13.4%.

On the opposite end of the spectrum, 22.8% of Massachusetts families had annual family incomes of greater than $100,000 in 2000. Only the Rural Eastern Towns had a higher percentage of families with annual incomes greater than $100,000 that was higher than the State, with 33.7% of its families within this income range, while the CHNA Less JCOH also reported a percentage higher than the State with 27.5% of its families in this income range. Not surprisingly, both Fitchburg and Gardner had less than 10% of their families in the annual family income range of greater than $100,000 with Gardner at 7.8% and Fitchburg at 8.8%.

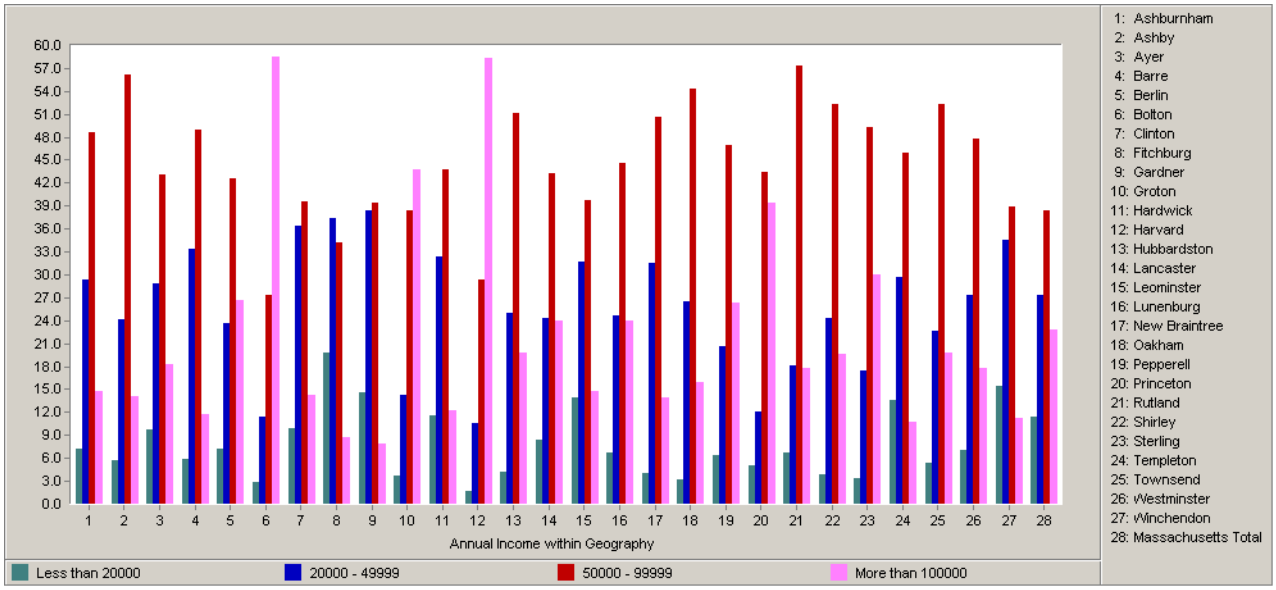
Percent of Annual Family Income by Range (2000)



When the individual cities and towns within CHNA 9 are considered, it becomes clear that Fitchburg, Gardner and Leominster are not alone in exceeding the State relative to the percent of families with annual incomes of less than $20,000. Winchendon with 15.4%, Templeton with 13.5% and Hardwick with 11.5% all had higher percentages of families in this income range than the State.

When we look at the wealthier families in the region, identified as those with annual family incomes in 2000 of over $100,000, 8 out of the 10 Rural Eastern Towns had percentages of their families in this income range higher than the State. Leading them was Bolton with 58.5% of its families, followed by Harvard at 58.2%, and Groton at 43.8%.

Percent of Annual Family Income by Range (2000)



The quantitative data described above reflects variations in rates of poverty and economic well-being across the study area. Qualitative data, which is able to reflect existing conditions of a given area or population, was also able to reflect the economic crisis which occurred during the study period. Therefore, in the qualitative data, poverty (and/or declining economic status), was a significant and pervasive issue facing communities, with few exceptions, throughout the study area. The impact of the depressed economic environment permeated the qualitative data. Across geographic and ethnic and racial communities (with isolated exceptions), the broad manifestations of a depressed economy had a significant, far reaching impact on community members' physical and emotional health.

Participants described repeatedly a pattern of poor and worsening economic status, leading to increased stress and an overall feeling of worsened physical and emotional health.

> *"Income impacts how you take care of yourself." (General Population)*

> *"You don't know how you will pay your bills…worrying about it gives me a stomachache, diarrhea, anxiety, rage… I have a difficult economic situation… it makes you want to commit suicide for a small problem that escalates*." (*Latino*)

Across the study area, participants repeatedly identified financial barriers to accessing health care. Despite the expanded coverage available through MA Healthcare Reform Law of 2006, many community members identified that they did not have health insurance.

> *"If I have no insurance I do not go to the doctors…instead, I buy over the counter drugs. Going to the doctors will dig me deeper in debt." (Latino)*

Similarly, several community members identified that the type of insurance that they could afford, offered minimal coverage that did not adequately address their health conditions.

"Better coverage costs more, so I opted for a cheaper plan, then I got sick and had more out-of-pocket costs. Not being able to able to afford good health care results in getting behind in health and 'Stress'!" (African American)

In addition, community members cited the need for more information related to accessing health insurance and related benefits; however, more frequently, individuals stated that they could not afford the high cost of paying for health insurance.

Community members spoke directly about the ways that limited financial resources presented barriers to accessing needed screenings and treatments for medical conditions, specifically related to the lack of insurance and/or the high co-payments of medications, medical visits, medical equipment, and procedures.

"When I had back problems co-pays were up to $60 a week. Acupuncture helped but it was $60-$100 per week. It wasn't covered. Sometimes I had to make a choice between medication and groceries for the week." (General Population)

An additional barrier to accessing health care repeatedly identified by participants in the qualitative data was transportation. Participants related limited accessibility to transportation as directly impacting their health.

"I don't have personal transportation. I can't afford transportation…I got sick walking to the doctor's office!" (Latino)

"Transportation [that's available]…they have limited operating hours. People don't go if they don't have transportation. If people don't have income or insurance things just get worse, they don't get treatment and they die." (Youth)

Community members, who identified limited access to public transportation, described having to take multiple buses to get to healthcare facilities.

''I have to take two buses to go to Burbank. If I miss my bus I will miss my appointment." (Latino)

"Transportation is unreliable, so you could miss your appointment. I have to take two buses to get there." (Latino)

Participants did discuss utilizing programs that offer transportation services as being of assistance to them; however, "limited" and "inconvenient" schedules and long waits were also associated with transportation resources in the area.

"[the transportation service] is inconvenient [and you] must wait hours. You have to depend on friends and family." (General Population)

As noted throughout this report, community members across groups identified that family members and church are a major source of support. Similarly, in regard to transportation, participants identified family and church as important resources, particularly when they could not afford to own a car.

"You must have a car. If it breaks down [you] must depend on family and church family."

Although transportation was identified as a significant barrier to accessing health care in the area across groups, access to transportation was noted most often and as a more significant barrier in rural communities, Latino communities, and for unemployed persons and persons with limited income.

As was stated in a focus group conducted in one of the rural communities:

> *"Dialysis is in Fitchburg. There is no public transportation. [the available transportation] is inconvenient you must wait hours. You have to depend on friends and family." (General Population)*

As was expressed in a youth focus group:

> *"If people don't have jobs, they get their cars towed. Repo!"*

A political stakeholder interviewed in this study talked about the assets within the current transportation system and the potential for its enhancement, building upon the current infrastructure.

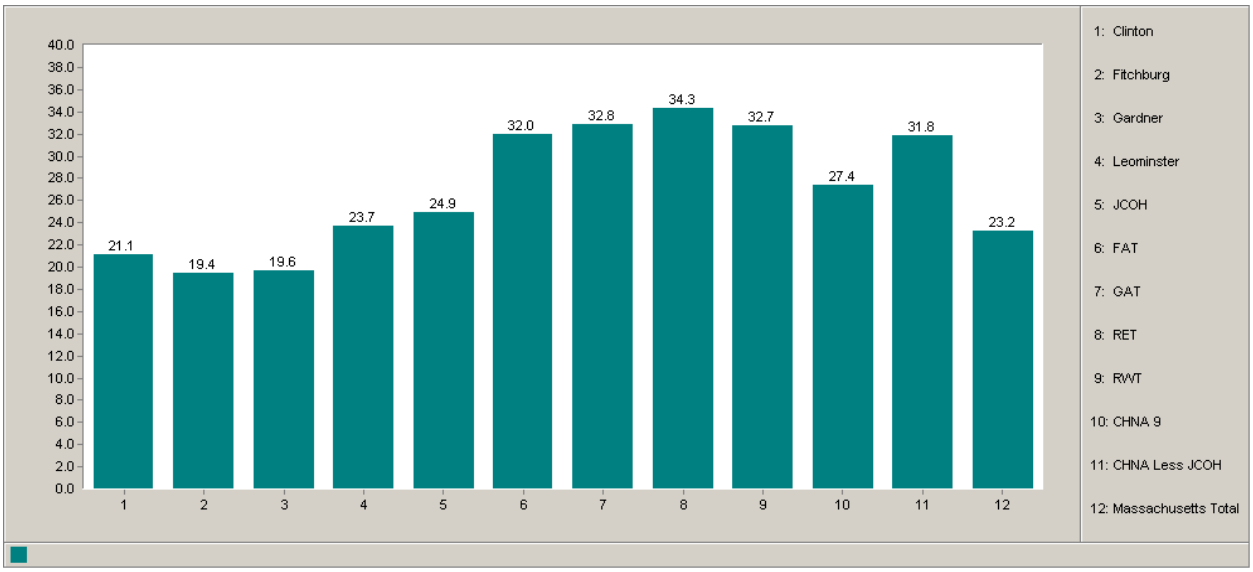
> *"Our commuter rail [is an asset]…and the bus system as well. We have a great transportation system to build upon."*

Household Composition

Married Couples with Children

Within Massachusetts in 2000, 23.2% of the households were comprised of married couples with children under the age of 18. Two of the cities within CHNA 9 reported percentages of these traditional households of less than the State average: Gardner with 19.6% of its households and Fitchburg with 19.4% and of its households falling into this category.

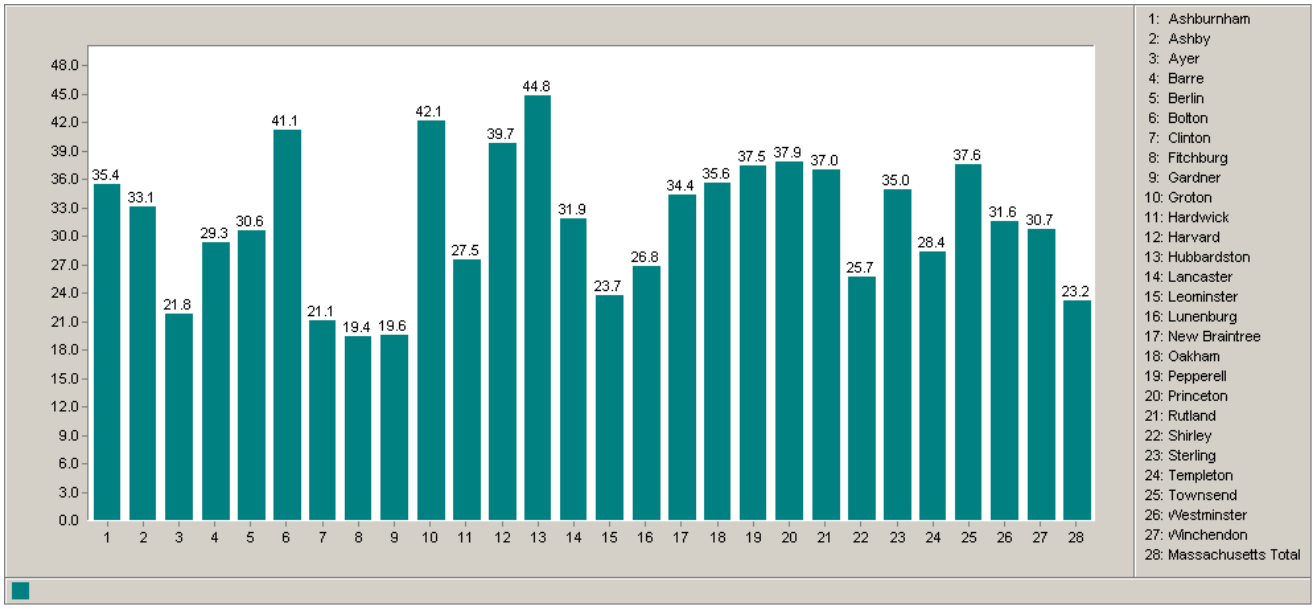
Percent of Households Composed of Married Couples with Reporting Region (2000)



On the opposite end of the spectrum, the highest percentages of households of married couples with children under the age of 18 were found in the Rural Eastern Towns at 34.3%, the Gardner Area Towns at 32.8% and the Rural Western towns at 32.7%.

When the individual cities and towns are considered, several of the towns in CHNA 9 reported percentages of households made up of married couples with children of more than 40%. The highest percentages were found in Hubbardston, with 44.8% of its households composed of married couples with children, followed by Groton with 42.1% and Bolton with 41.1%. These 3 towns had more than twice as many of their households comprised of married couples with children than did the cities of Fitchburg and Gardner.

Percent of Households Composed of Married Couples with Children under Age 18 (2000)

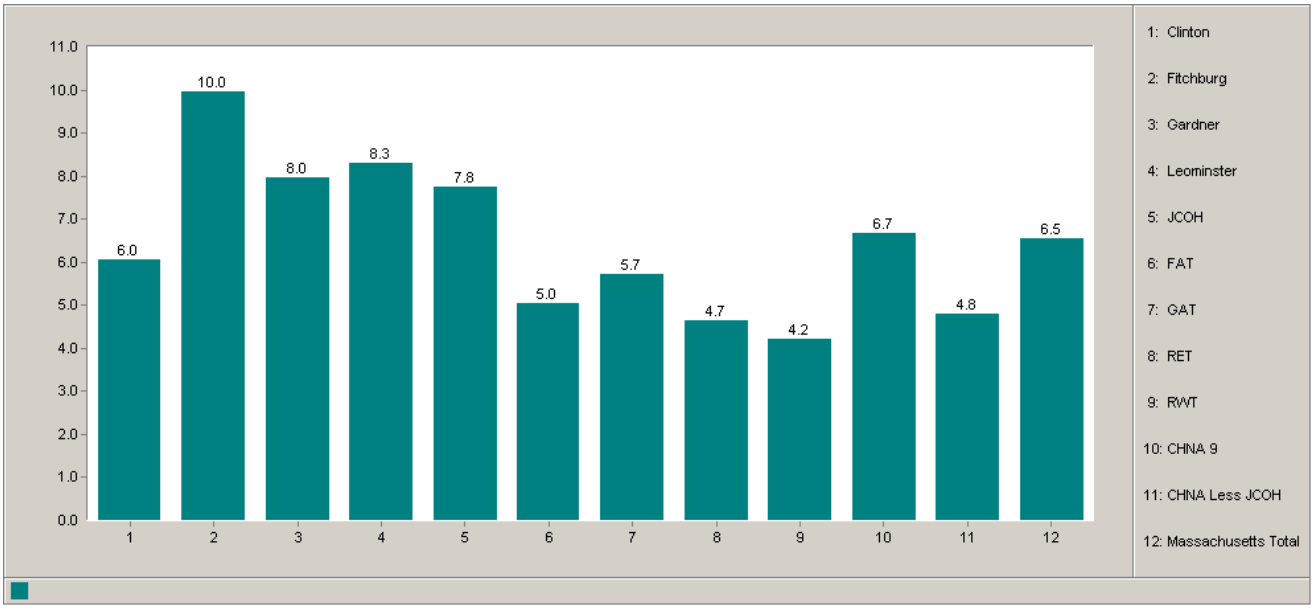


Single Females with Children

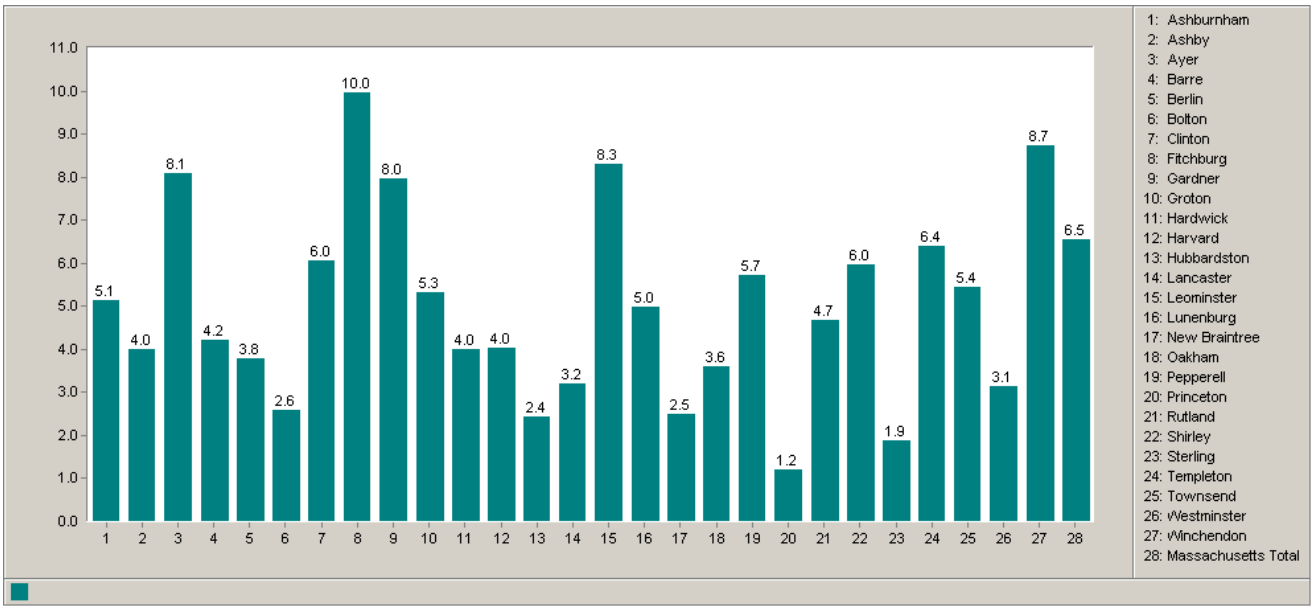
In 2000, the percentage of households made up of a single woman with children under the age of 18 was 6.5% within the State. The 3 JCOH cities (Fitchburg, Leominster and Gardner) all reported percentages higher than the State, with 10% of Fitchburg households, 8.3% of Leominster households and 8% of Gardner households composed of single females with children.

The lowest percentages of households made up of single women with children were found in the Rural Western Towns at 4.2% and the Rural Eastern Towns at 4.7% of households. Both the JCOH at 7.8% and CHNA 9 at 6.7% reported percentages of households composed of single females with children that were higher than the State average. However, when the JCOH cities and towns are removed from CHNA 9, the CHNA Less JCOH percentage falls to just 4.8% of households composed of single women with children.

Percent of Households Composed of a Single Female with Children under Age 18 (2000)



Percent of Households Composed of a Single Female with Children under Age 18 (2000)



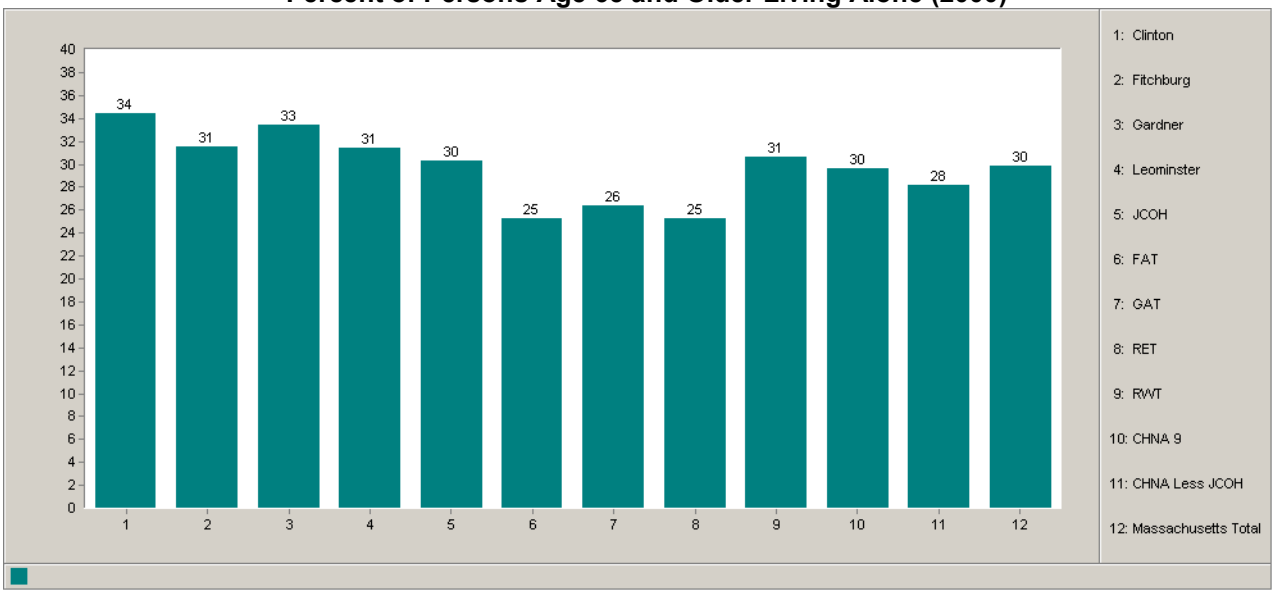
A look at the individual cities and towns within CHNA 9 reveals that 22 of the 27 had lower percentages of households composed of single females with children than the State. Two of the towns had percentages of less than 2%, with Princeton at 1.2% and Sterling at 1.9% of households.

Of the 5 CHNA 9 cities and towns with higher percentages of households composed of single women with children under the age of 18 than the State, 3 were the JCOH cities of Fitchburg, Leominster and Gardner, while the remaining two were Hubbardston at 8.7% and Ayer at 8.1%.

Elderly Household Composition and Housing Issues

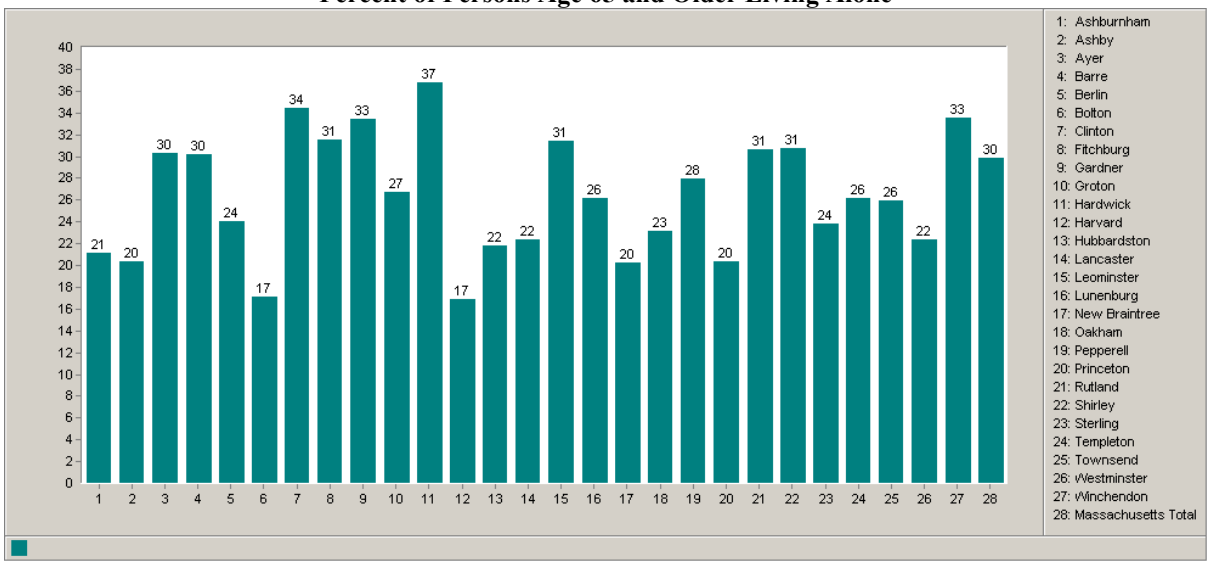
Another household measure is the percentage of persons 65 years and older who are living alone. Within the State, 30% of persons age 65+ lived alone in the year 2000. Within CHNA 9, the highest percentages of persons 65+ living alone were reported in Clinton at 34% and Gardner at 33%. The lowest percentages were found in the Fitchburg Area Towns and the Rural Eastern Towns, with both reporting that 25% of the persons age 65 and older in their towns lived alone.

Percent of Persons Age 65 and Older Living Alone (2000)



Within the cities/towns, the highest percentage of persons age 65 and older living alone was found in Hardwick at 37%. Winchendon also reported a high percentage of elderly living alone, with 33% of its residents age 65 and older living alone. Two towns reported percentages of persons age 65 and older living alone as less than 20%, with both Bolton and Harvard having 17% of persons age 65 and older living alone.

Percent of Persons Age 65 and Older Living Alone



Within the Qualitative data, older adults noted many health related concerns, as well as identifying community resources that have assisted them to maintain their health and wellbeing. While these issues are discussed at several points in this report, a few of these concerns and assets will also be noted in this section.

Older adults expressed economic challenges related to accessing health care. In addition, they expressed concerns related to balancing basic health needs with economic wellbeing. For example, one older adult, describing the need for more income, noted the adverse consequences employment may have upon her housing:

> *"If I take a job my rent will increase… can't have that happen… and I could lose my housing." (General Population)*

Older adults (and their caregivers in the study) reported having multiple health conditions and reported struggling to pay for their medications and medical supplies.

> *"There's the 'donut hole' when you reach the yearly limit, the costs for medications for the rest of the year must come out of pocket. My inhaler is $150, so I try to stretch its use." (General Population)*

A service provider reported a similar struggle she has heard to conserve limited resources among the elderly and their family members.

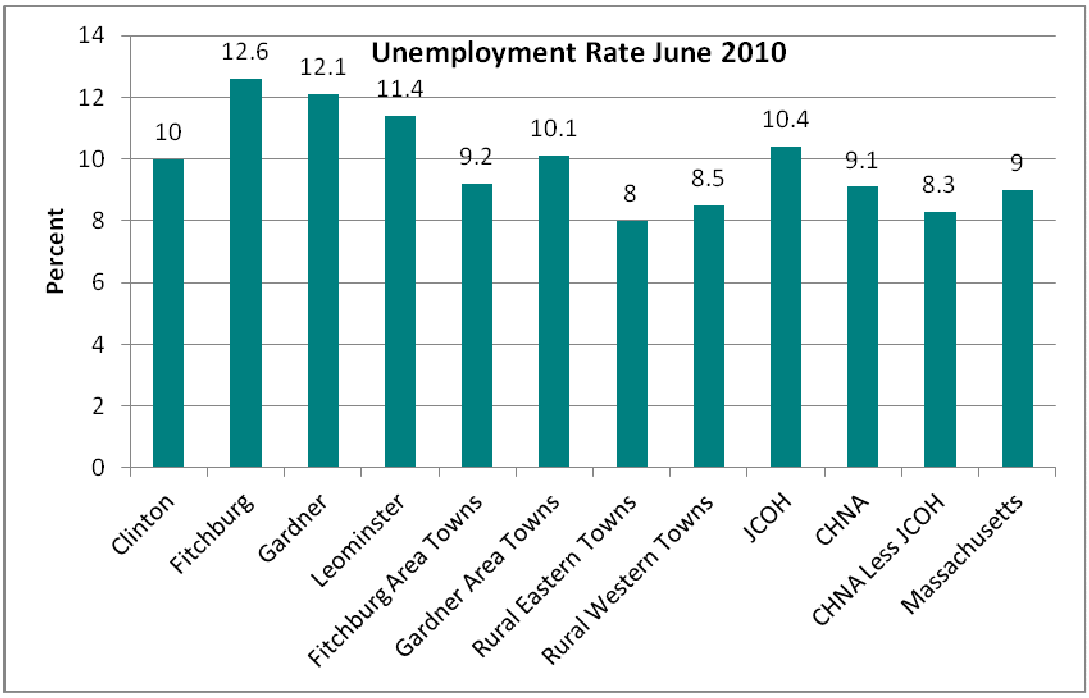
> *"I see families who talk about splitting medications so that they go further and families trying to figure out which medications are the most important to take, so that they can spread out their resources."*

Participants also discussed the impact of recent budget cuts on services for older adults.

> *"They are pulling back on senior services when they need more. Seniors are hard to reach, isolated and proud. We need to reach them with education and outreach that really reaches them!" (General Population)*

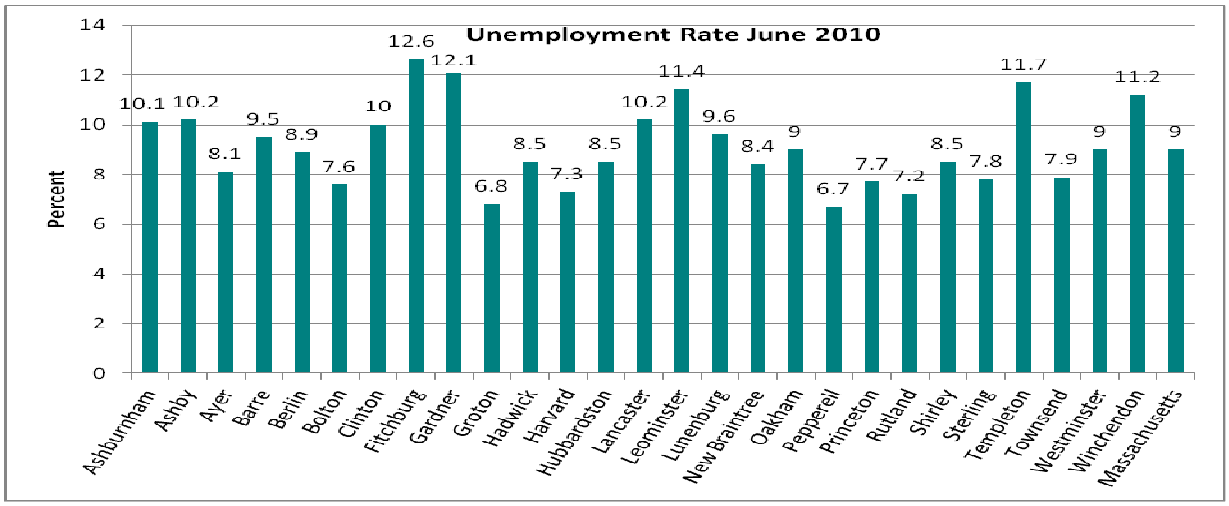
Unemployment Rate

The financial crisis of 2008 – 2010 has certainly taken a toll on the financial health of the region, as it has on that of the State and the Nation. As of June 2010, the unemployment rate in Massachusetts was 9.0%. Most of the reporting regions in CHNA 9 experienced unemployment rates which were higher than that of the State. Fitchburg reported the highest unemployment rate in the region at 12.6%, a rate 1.4 times that of the State. Gardner (12.1%) and Leominster (11.4%) also experienced very high unemployment rates. The lowest unemployment rate in CHNA 9 was reported in the Rural Eastern Towns at 8.0%.



The JCOH cities and towns experienced an unemployment rate of 10.4% in June 2010, while CHNA 9 overall fared somewhat better (9.1%), but was still above the State rate. However, when the JCOH cities and towns are removed from CHNA 9, the CHNA Less JCOH unemployment rate fell to 8.3%, below that of the State. Again, the JCOH cities and towns appear to have more severe economic problems than CHNA 9 overall.

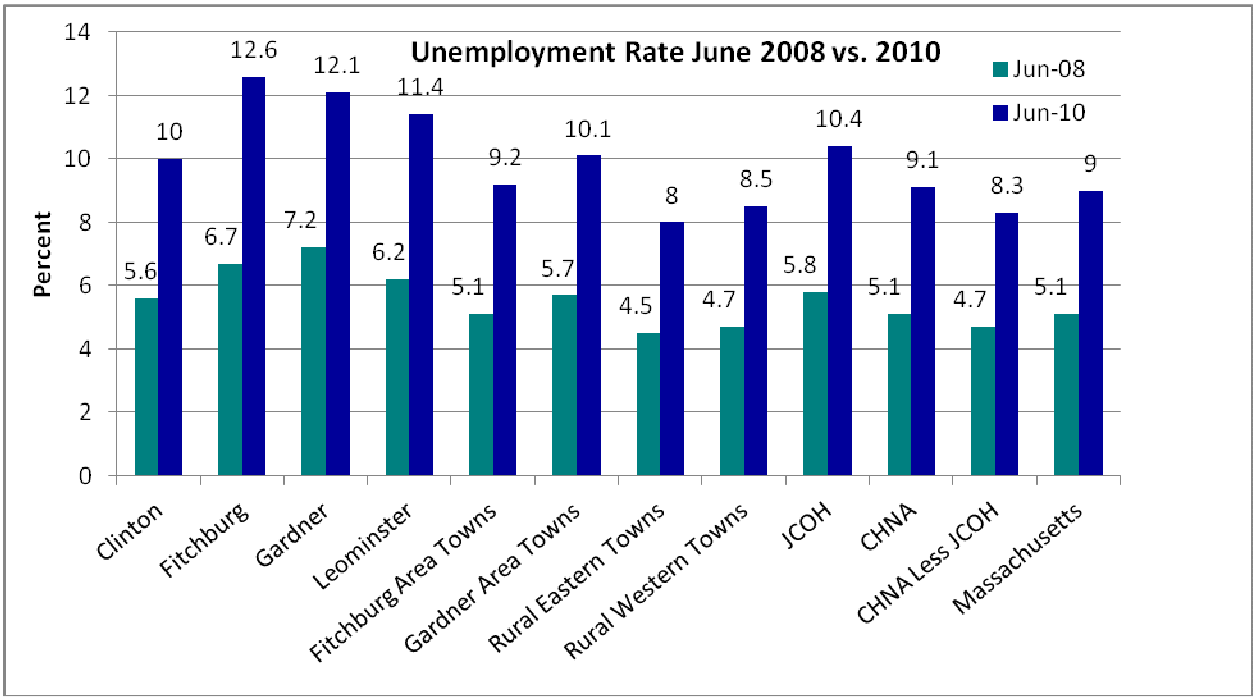
A look at unemployment rates by the individual cities and towns within CHNA 9 shows that 11 of the 27 had unemployment rates in June 2010 which were greater than that of the State. Fitchburg (12.6%) and Gardner (12.1%) had the highest rates. They were followed by Templeton at 11.7%, Leominster at 11.4% and Winchendon at 11.2%. The lowest unemployment rate in CHNA 9 was reported by Pepperell at 6.7%. Pepperell was followed by Groton at 6.8%, Rutland at 7.2% and Harvard at 7.3%. Nine of the ten towns in the Rural Eastern Towns reporting region reported unemployment rates lower than the State.



It should be noted that just as the Rural Eastern Towns dominated the list of towns with low unemployment rates, the JCOH cities and towns dominated the list of those with the highest unemployment rates, with only Townsend at 7.9% and Hubbardston at 8.5% experiencing rates lower than the State. Westminster's rate was equal to the State at 9.0%.

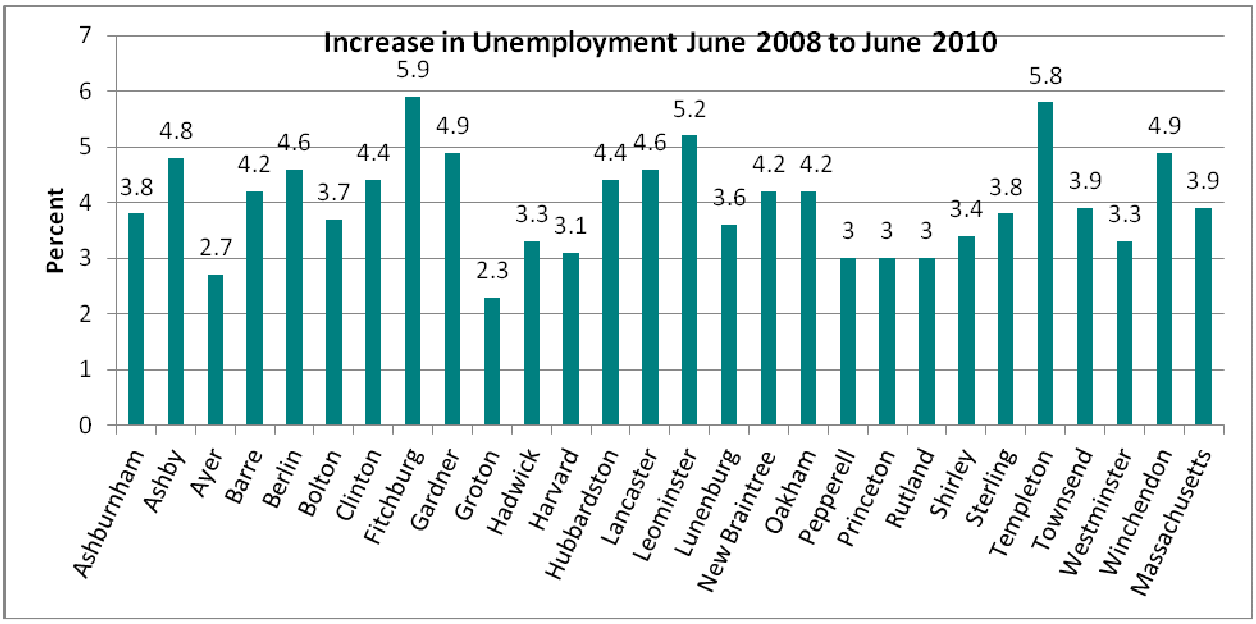
A review of the increase in unemployment over the period from June 2008 to June 2010 indicates that the Commonwealth experienced an increase in unemployment of 3.9 percentage points in that two year period. Within CHNA 9, Fitchburg experienced a 5.9 percentage point increase in unemployment, from a rate of 6.7% to a rate of 12.6%, the largest increase in percentage points in the region. Templeton (5.8 percentage points) and Leominster (5.2 percentage points) also experienced increases of over 5 percentage points. The JCOH as a whole experienced an increase of 4.6 percentage points, CHNA 9 experienced an increase of 4.0 percentage points and the CHNA Less the JCOH experienced an increase of 3.6 percentage points.

From June 2008 to June 2010, the Rural Eastern Towns (3.4% increase), the CHNA less the JCOH (3.6% increase) and the Rural Western Towns (3.8% increase) were the only Reporting Regions which experienced increases in unemployment which were lower than that of the State.



A look at the percentage point increase in unemployment from June 2008 to June 2010 by individual cities and towns within CHNA 9 shows that Fitchburg had the highest percentage increase in unemployment at 5.9% followed by Templeton at 5.8%, Leominster at 5.2% and Gardner and Winchendon both at 4.9%. Seven of the 13 cities/towns with increases in unemployment rates which were 4.0 percentage points or greater are within the JCOH service area.

The lowest increase in unemployment in this two year period was experienced by Groton at 2.3 percentage points, followed by Ayer at 2.7 and Princeton, Rutland and Pepperell at 3.0 percentage points. Four of the 5 towns with increases in unemployment rates which were 3.0 percentage points or less were Rural Eastern Towns.



As discussed in the earlier sections entitled "**Income"** and "**Unemployment,**" poverty and economic status, as reported by community members and stakeholders, had a negative impact upon the health and well being of families. Similarly, the issue of unemployment and job instability arose repeatedly in the focus groups and interviews, as a stressor in people's lives, negatively impacting their health and sense of well being, but also as a direct impediment to accessing health care. Unemployment, holding unstable or low paying jobs, and the corresponding impact upon health, was a frequent theme throughout the qualitative information.

> *"Lack of jobs makes it difficult for people in (a specific community) to get good health care. Job opportunities… (It's difficult) to get proper nutrition when you don't have enough money."*
>
> *"[Unemployment]…It increases the stress and the substance abuse." (General Population)*

When asked about the factors affecting health, a political stakeholder identified jobs:

> *"I think it's the jobs. The problem is supporting your family…It's stressful trying to keep your job and keep your family together. A customer [just] came in talking about people losing their jobs. The children coming up are not happy with the low level jobs they have. Even high level jobs like engineering, they have had to take salary cuts. They had to readjust to live within the lower salary. I wish there was the ability for the government to provide an environment w where people can have a good living, provide food for their families and their activities."*

As noted earlier, community members identified the link between economic stressors and their own level of personal stress. This arose in direct connection with unemployment and job security.

> *"…it's difficult finding a job…and job loss…if you lose your job you are screwed…you cannot meet expenses, it causes depression…and you become dependent on agencies and government with all the worry about qualifications."*

"Some people don't even have checking accounts…poverty…they live from paycheck to pay check. They just can't seem to break it." (Political Stakeholder)

Both stakeholders and community members added that unemployment and job security was even more challenging for persons with Limited English Proficiency (LEP):

"*There are few jobs in our community…Language makes it more complicated*." (Latino)

"They don't let them (Latinos) get the jobs. When they do hire them [Latinos], they let them go." (Latino Stakeholder)

Several community members who were employed also added that they feared for their jobs and the loss of pay associated with missing work. They stated that they felt they could not miss work in order to attend healthcare appointments.

"I can't go to day time appointments due to my pay will be docked." (General Population)

"It's more crucial not to miss work than missing appointment." (Latino)

As a political stakeholder noted describing the economic struggles people are facing,

"[They tell you] to…pull yourself up by your own boot straps…what happens when you don't have boots?"

"If people don't have income or insurance things just get worse, they don't get treatment and they die." (Youth)

"Half of [specific town] don't have jobs. They depend on other people, they go crazy, get evicted. Families start breaking apart. They owe people money. It causes violence." (Youth)

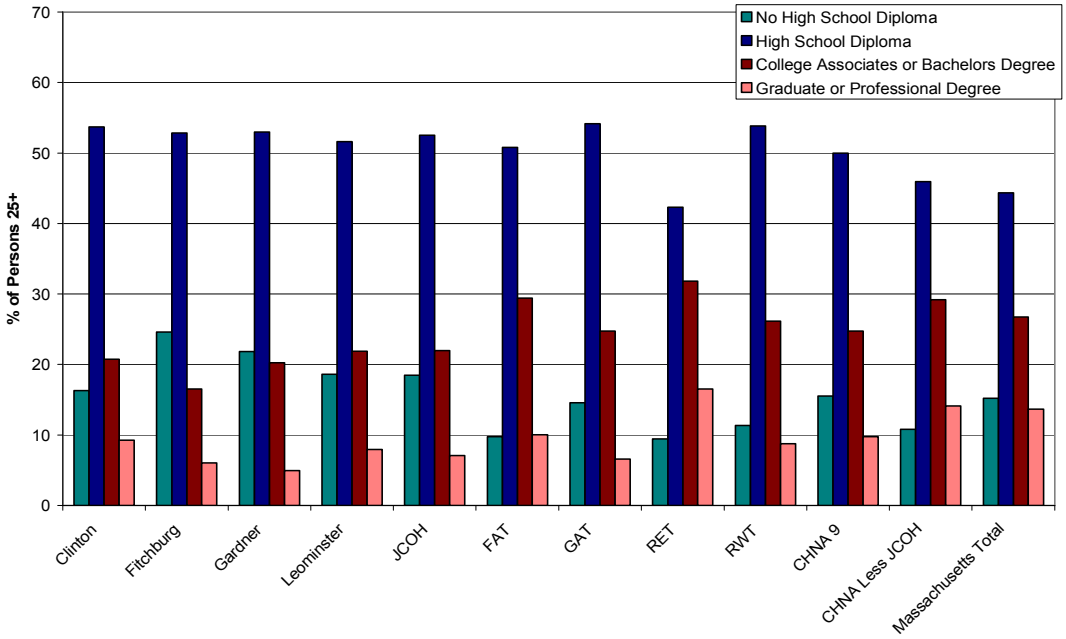
Education

Educational Attainment

An important factor in looking at the health of a region is the educational attainment of the residents within a region. For the 2000 census, this information was collected for residents age 25 and over. Within Massachusetts, 15.2% of the residents aged 25 and over had no high school diploma. Within CHNA 9, the highest percentages of residents age 25 and over with no high school diploma were found in the two cities of Fitchburg and Gardner, with 24.6% of Fitchburg residents and 21.8% of Gardner residents age 25 and over lacking a high school diploma. The lowest percentages of residents age 25 and over who were lacking a high school diploma were found in the Rural Eastern Towns at 9.5% and the Fitchburg Area Towns at 9.8%. Within the JCOH service area, 18.5% of the residents age 25 and over lacked a high school diploma. Within CHNA 9, the percentage was lower at 15.5%. When the JCOH cities and towns are removed from CHNA 9, the CHNA Less JCOH percentage falls to just 10.8%, indicating that the JCOH service area has a much higher percentage of residents lacking a high school diploma than the remainder of CHNA 9.

On the opposite end of the spectrum, 13.7% of Massachusetts residents age 25 and over had a graduate or professional degree in 2000. Within CHNA 9 reporting regions, the Rural Eastern Towns had the highest percent of residents with a graduate or professional degree at 16.5%, while

Gardner at 5% and Fitchburg at 6.1% had the lowest percentages. Overall 9.8% of CHNA 9 residents age 25 and over had a graduate or professional degree. Within the JCOH cities and towns, this rate fell to 7.1%. When the JCOH cities and towns are removed from CHNA 9, the CHNA Less JCOH rate rises above the State average to 14.1%.



When focusing on just two categories of educational attainment, a high school diploma or less versus an associate's degree or more, the State overall had a 60/40 ratio, with roughly 60% of its residents having a high school diploma or less and 40% having an associate's degree or more. Within the reporting regions, this ratio ranged from 77/23 in Fitchburg and 75/25 in Gardner to 52/48 in the Rural Eastern Towns and 57/43 in the CHNA Less JCOH.

In the qualitative data, through the use of interviews and focus groups, community members expressed concern about the quality of education, school to school inconsistency, and the lack of representation of diverse faculty within the educational systems. Community members questioned the quality of the education that students were receiving, particularly in the cities and adjacent rural areas and noted overall inconsistency among schools and the quality of the education at the schools.

> *"Adult and teen education schools are inconsistent. One son is on top. The other son goes to a different school they complain about his behavior and they know I can't get the pills he needs." (African American)*

Some stakeholders interviewed expressed hope that the educational system was improving; however, they also identified systemic issues, such as poverty, the current economic crisis, and the demands of standardized testing, as limiting the creativity of the delivery of education. As one community stakeholder stated:

> *"Education is getting better but there is a problem with finding fundraising. We have 6 or 8 retirements not filled… In the last two budgets, they cut programs and teachers. Education is being led by MCAS...that leaves little room for innovation.*" (Latino)

While community members and stakeholders expressed concerns relating to the school systems, they also identified schools as serving as important community assets and resources. In the youth group, for example, guidance counselors and principals were identified as a source of support.

> *"I was taught that education is the key. Martin Luther King and Malcolm X encouraged me. Some people say we can't do it. Look at our current president – we have come a long way. This gives me motivation to try much harder and much harder to help others." (African American)*

In several instances, parents noted examples in which the schools extended themselves to support the health, and the specific needs of their children. One parent talked about the efforts the school system made to address an issue of bullying of her child.

> *"There is little to no access for our grandson to socialize with other children. He doesn't go to a local school so he can't make strong bonds. One 10 year old child called him the 'N' word at the elementary school. He came home and told us. The principal called in the 'Bullying task force' from Boston. We met with the school, the parents and the principal. There have been no other incidences. He is the only Black child in his grade." (African American)*

At the same time, participants identified the essential role that community based organizations have traditionally played in providing supportive educational services to youth. They identified both services that no longer exist as well as the need to expand existing services.

> *"Whenever anything happened you could always go to [specific agency] for help. Folks from the [agency] would go to the school with me. We need that kind of support now. Black kids need someone to support them. We need to go back to the old ways. We need to support the children." (African American)*

> *"Support... The kids need support. They need somebody to look over them to want them to succeed. When they fall it's because no one is looking out for them. They will do crazy things. They don't have the kind of family support they need. They need patience and communication." (African American)*

As noted in several sections of this report, participants identified the need for community members to have access to more information to assist them to access and navigate complex systems. In relation to opportunities in the school systems, it was expressed,

> *"[The school system] has problems with education system. The parents are unaware of opportunities. This has come up with people I know who have kids in the system. For example they don't have dietary alternatives for kids with ADHD."*

Educational Districts

An analysis of the educational systems within the region is complicated by the fact that many of the towns within CHNA 9 belong to regional school systems. Eight of the cities/towns in CHNA 9 do have their own local school systems, while 17 towns are involved in 7 different regional school districts and 2 towns have a hybrid school system with both local and regional pieces. All school districts here will be referred to by the names used on the Department of Education website.

Because of the intricacies of charter schools, public school choice and private school options, this analysis will focus on the students enrolled in the default local or regional schools associated with their cities and towns. There will also be some discussion of the 2 major regional vocational technical schools with high enrollments from CHNA 9 cities and towns.

The three cities of Fitchburg, Gardner and Leominster all have local school systems as do the towns of Clinton, Ayer, Harvard, Lunenburg and Winchendon. In addition, Ayer and Lunenburg also accommodate Shirley's children in grades 9 - 12 via a grade tuition agreement. Shirley's local school system covers PK – 8. Berlin is the other school with a hybrid system, covering its PK – 6 students locally, while grades 7 – 12 are accommodated via the Berlin-Boylston Regional District.

Cities/Towns with Local School Districts	
City/Town	**District**
Ayer *	Local
Clinton	Local
Fitchburg	Local
Gardner	Local
Harvard	Local
Leominster	Local
Lunenburg *	Local
Winchendon	Local
Towns with Regional School Districts	
Town	**Regional District**
Ashburnham	Ashburnham-Westminster
Ashby	North Middlesex
Barre	Quabbin
Bolton	Nashoba
Groton	Groton-Dunstable
Hardwick	Quabbin
Hubbardston	Quabbin
Lancaster	Nashoba
New Braintree	Quabbin
Oakham	Quabbin
Pepperell	North Middlesex
Princeton	Wachusett
Rutland	Wachusett
Sterling	Wachusett
Templeton	Narragansett
Townsend	North Middlesex
Westminster	Ashburnham-Westminster
Towns with Hybrid School Districts	
Town	**District**
Berlin PK - 6	Local
Berlin 7 - 12	Berlin-Boylston Regional
Shirley PK - 8	Local
Shirley 9 - 12 (60%)	Ayer
Shirley 9 - 12 (40%)	Lunenburg
* Shirley has grade tuition agreements for grades 9 -12 with Ayer and Lunenburg.	

The 7 regional school districts covering the 17 additional towns are complete PK – 12 systems. Students from towns in CHNA 9 make up 100% of the student body in 3 of these 7 regional school districts. The Ashburnham - Westminster Regional School District is comprised of students from the Gardner Area Towns of Ashburnham and Westminster. The North Middlesex Regional School District enrolls students from Ashby, Pepperell and Townsend, while the Quabbin Regional School District has students from Barre, Hardwick, Hubbardston, New Braintree and Oakham.
Eighty percent of the students in the Groton-Dunstable Regional School District are from Groton and 80% of the students in the Narragansett Regional School District reside in Templeton. Bolton and Lancaster students account for 63% of the students in the Nashoba Regional School District, while 47% of the students in the Wachusett Regional School District reside in Princeton, Rutland or Sterling. Among the students in grades 7 – 12 in the Berlin-Boylston Regional District, 30% are from Berlin.

There are 6 regional vocational technical schools that enroll students from cities/towns in CHNA 9. Only 2 of these, Montachusett Regional Vocational Technical School and Nashoba Valley Regional Vocational Technical School have more than 15% of students from this area. Eighty-one percent of students at Montachusett are from Ashburnham, Ashby, Barre, Fitchburg, Gardner, Harvard, Hubbardston, Lunenburg, Princeton, Sterling, Templeton, Westminster, and Winchendon, while 46% of students at Nashoba Valley are from the towns of Ayer, Groton, Pepperell, Shirley and Townsend.

The school districts covered in this report and the cities and towns associated with them are listed in the table below.

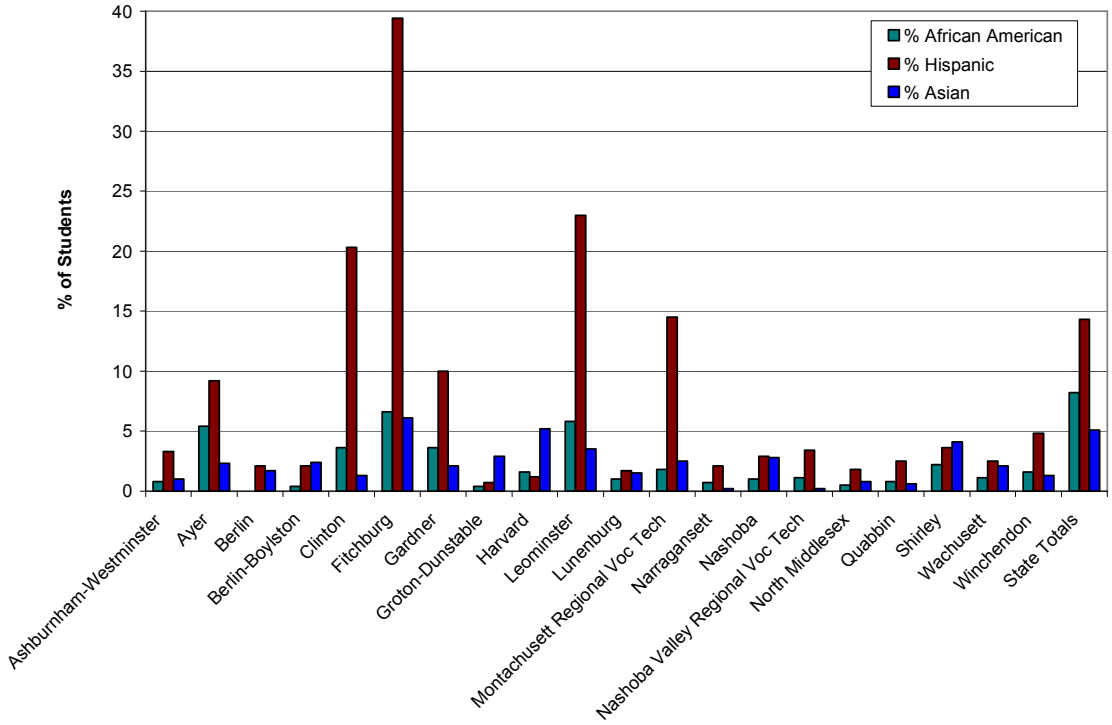
School District	Type	CHNA 9 Cities/Towns Served
Ashburnham-Westminster	Regional PK - 12	Ashburnham & Westminster
Ayer	Local PK - 12	Ayer & 60% of Shirley 9 - 12
Berlin	Local PK - 6	Berlin
Berlin-Boylston	Regional 7 - 12	Berlin
Clinton	Local PK - 12	Clinton
Fitchburg	Local PK - 12	Fitchburg
Gardner	Local PK - 12	Gardner
Groton-Dunstable	Regional PK - 12	Groton
Harvard	Local PK - 12	Harvard
Leominster	Local PK - 12	Leominster
Lunenburg	Local PK - 12	Lunenburg & 40% of Shirley 9 - 12
Montachusett Regional Vocational Technical	Regional Vocational Technical 9 - 12	Ashburnham, Ashby, Barre, Fitchburg, Gardner, Harvard, Hubbardston, Lunenburg, Princeton, Sterling, Templeton, Westminster & Winchendon
Narragansett	Regional PK - 12	Templeton
Nashoba	Regional PK - 12	Bolton & Lancaster
Nashoba Valley Regional Vocational Technical	Regional Vocational Technical 9 - 12	Ayer, Groton, Pepperell, Shirley & Townsend
North Middlesex	Regional PK - 12	Ashby, Pepperell & Townsend
Quabbin	Regional PK - 12	Barre, Hardwick, Hubbardston, New Braintree & Oakham
Shirley	Local PK - 8	Shirley
Wachusett	Regional PK - 12	Princeton, Rutland & Sterling
Winchendon	Local PK - 12	Winchendon

School District Enrollment by Racial/Ethnic Group

A review of school enrollment by race/ethnicity shows that within Massachusetts, African Americans made up 8.2% of the students enrolled in public schools for the 2008 – 2009 school year. Within CHNA 9 school districts, Fitchburg reported the highest percentage of African American students at 6.6% followed by Leominster at 5.8% and Ayer at 5.4%.

The school enrollment percentages for African Americans were higher than the percentages reported for the overall Black, non-Hispanic population in 2005 for the State as a whole (8.2% of students versus 6.0% of population), as well as for Fitchburg (6.6% of students versus 4.2% of population), Leominster (5.8% of students versus 4.2% of population), Gardner (3.6% of students versus 2.9% of population) and Clinton (3.6% of students versus 2.3% of population). The opposite was true for Shirley, where 2.2% of students were African American while 7.0% of the population was identified as Black, non-Hispanic, as well as for Ayer (5.4% of students versus 7.3% of population) and Harvard (1.6% of students versus 5.0% of population).

School District Enrollment by Race/Ethnicity 2008 - 2009



It is unclear as to whether the differences between the student African American percentages and the overall Black, non-Hispanic percentages are due to differences in the definitions of African American versus Black, non-Hispanic; different time periods; the age distribution of Blacks resulting in more/fewer school-age children; differences in school enrollment trends leading to disproportionately more/fewer blacks in certain public school systems.

Within the Commonwealth, Hispanics made up 14.3% of the students enrolled in public schools for the 2008 – 2009 school year. Within CHNA 9, several school districts reported percentages of Hispanic students that were higher than that of the State. Fitchburg reported the highest percentage of Hispanic students at 39.4% or 2.8 times the State percentage. Fitchburg was followed by Leominster at 23% (1.6 times the State percentage) and Clinton at 20.3% (1.4 times

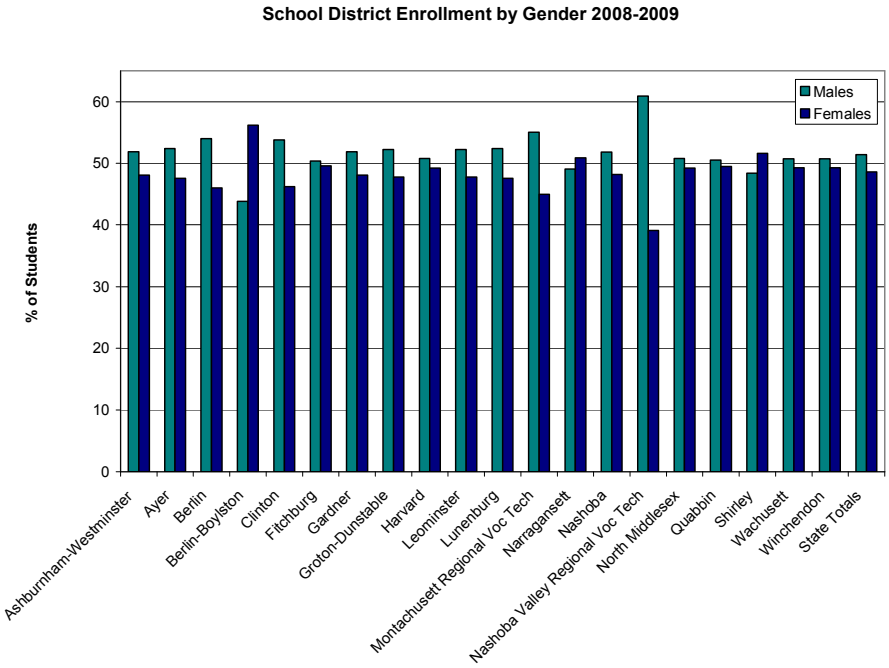
the State percentage). Montachusett Regional Vocation Technical School had a percentage of Hispanic students of 14.5%.

A comparison of the school enrollment percentage for Hispanics versus the percentage reported for the overall Hispanic population in 2005 for the Commonwealth as a whole indicates that the school percentage is 1.8 times the overall population percentage (14.3% of students versus 7.9% of population). Higher percentages of Hispanic students versus the overall Hispanic population were also found in Fitchburg (39.4% of students versus 17.2% of population), Leominster (23% of students versus 12.9% of population), Clinton (20.3% of students versus 13.5% of population), Gardner (10% of students versus 4.9% of population) and Ayer (9.2% of students versus 5.2% of population). The opposite was true for Shirley, where 3.6% of students were Hispanic while 7.0% of the population was identified as Hispanic, as well as for Harvard (1.2% of students versus 7.7% of population).

Asians comprised 5.1% of the public school population within the State in 2008-2009. Fitchburg and Harvard had higher percentages of Asian students than the State at 6.1% and 5.2%, respectively. The State percentage of Asian students at 5.1 % is relatively close to the State percentage of Asian residents at 4.8%. The same is true of Fitchburg, with 6.1% Asian students and 6.0% Asian residents. However, Harvard reported a higher percentage of Asian students at 5.2% versus Asian residents at 3% as did Shirley, with 4.1% Asian students and 2.5% Asian residents. On the other hand, 2.3% of the students in Ayer are Asians, while 4% of the overall population in Ayer is Asian.

As discussed in a subsequent section entitled **Teacher Race/Ethnicity by School District***,* qualitative information contained frequent input about the diversity of the student body within the schools in the study area, identifying the need for greater diversity to be reflected in the teachers and administrators in the school districts. Community members also specifically identified that attending the school systems can be particularly challenging for bi-racial students.

School District Enrollment by Gender



In the 2008 – 2009 school year, within the Commonwealth 51.4% of the students were male and 48.6% were female. Most of the school districts in CHNA 9 had similar distributions, with percentages of males between 50.5% and 52.5% and percentages of females between 47.5% and 49.5%. Both of the regional vocational technical schools enrolled more males than females, with Montachusett at 55% male and 45% female and Nashoba Valley at 70% male and 30% female. Clinton, with 53.8% males and 46.2% females and Berlin (PK - 6), with 54% males and 46% females, also reported a proportionally higher percentage of male students. However, there were three school districts which reported a higher percentage of female students, Berlin-Boylston (7 – 12) with 43.8% males and 56.2% females, Shirley (PK – 8) with 48.4% males and 51.6% females and Narragansett with 49.1% males and 50.9% females.

School District Enrollment by English Language Proficiency (LEP)

There are three school districts within CHNA 9 with a large percentage of students for whom English is not their first language. Within the Commonwealth, 15.4% of the students enrolled during the 2008 – 2009 school year reported that English was not their first language. Fitchburg reported that English was not the first language for 29.4% of its students, while 19.5% of Clinton's students and 18.2% of Leominster's students reported that English was not their first language.

When reporting on the percentage of students with limited English proficiency in 2008 - 2009, not surprisingly these three school districts also reported percentages higher than the State. Within the Commonwealth, 5.9% of the students had limited English proficiency. Fitchburg reported that 11% of its students had limited English proficiency, while Leominster and Clinton reported that 9.6% and 7.8% of their students, respectively, had limited English proficiency.

In the qualitative data, community members expressed concern that language barriers may exist for both students and their parents. Language barriers were expressed most prominently in the Asian (Hmong and Lao) and Latino communities. Community members again identified the lack of corresponding ethnic/racial/ language representation among the student and faculty and recommended increased efforts to address this issue.

Community members expressed concern that LEP students were at greater risk to "drop out" of school or to attain reduced academic achievement. They directly correlated limited education to reduced economic and physical well being. In addition, concern was expressed in both the Latino and Asian communities that students miss school to serve as interpreters for their family members.

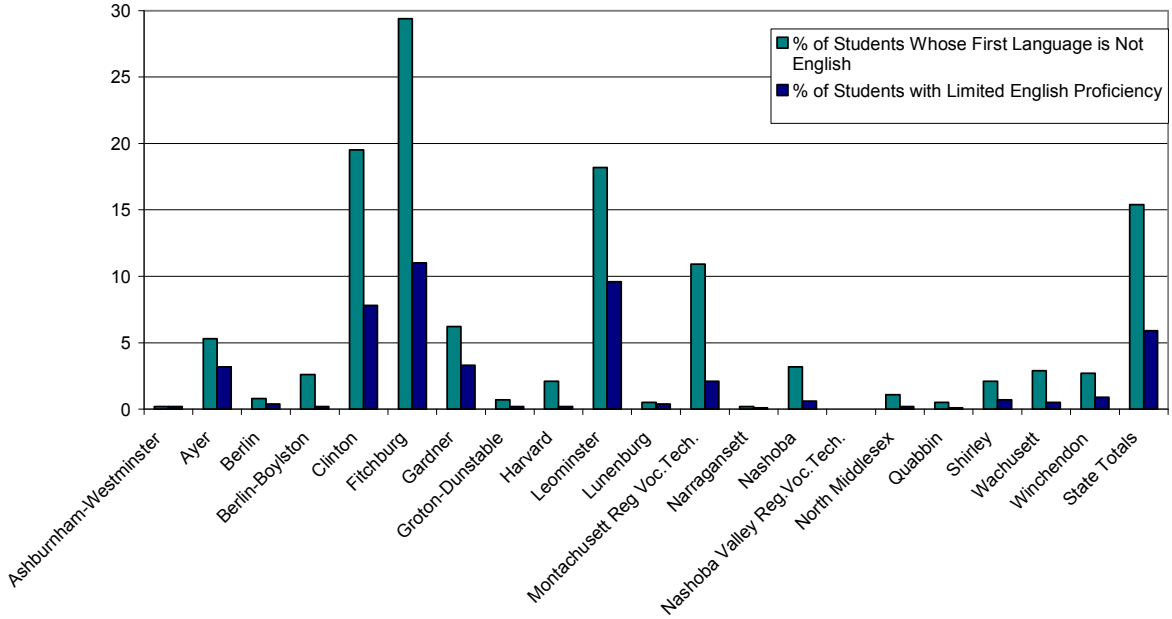
> *"We are having children missing school to translate." (Lao)*
>
> *"I have to translate for my mom. I can't leave school early enough to go with her to her appointments."*

Throughout the qualitative data, community members and stakeholders identified concerns that LEP students were dropping out of school and/or not attending at a higher rate than the general population. In addition to language barriers, participants identified the issue of possessing documentation of citizenship/residency.

> *"I am worried about the youth dropping out of school because they don't have papers." (Latino)*

Participants identified the local colleges as resources in supporting the educational status of the area. In particular, individuals identified the ESL resources at the colleges; however, it was noted that, at times, the GED prerequisite, and/or waiting lists can be a barrier for entrance.

School District Enrollment by English Language Proficiency 2008 -2009

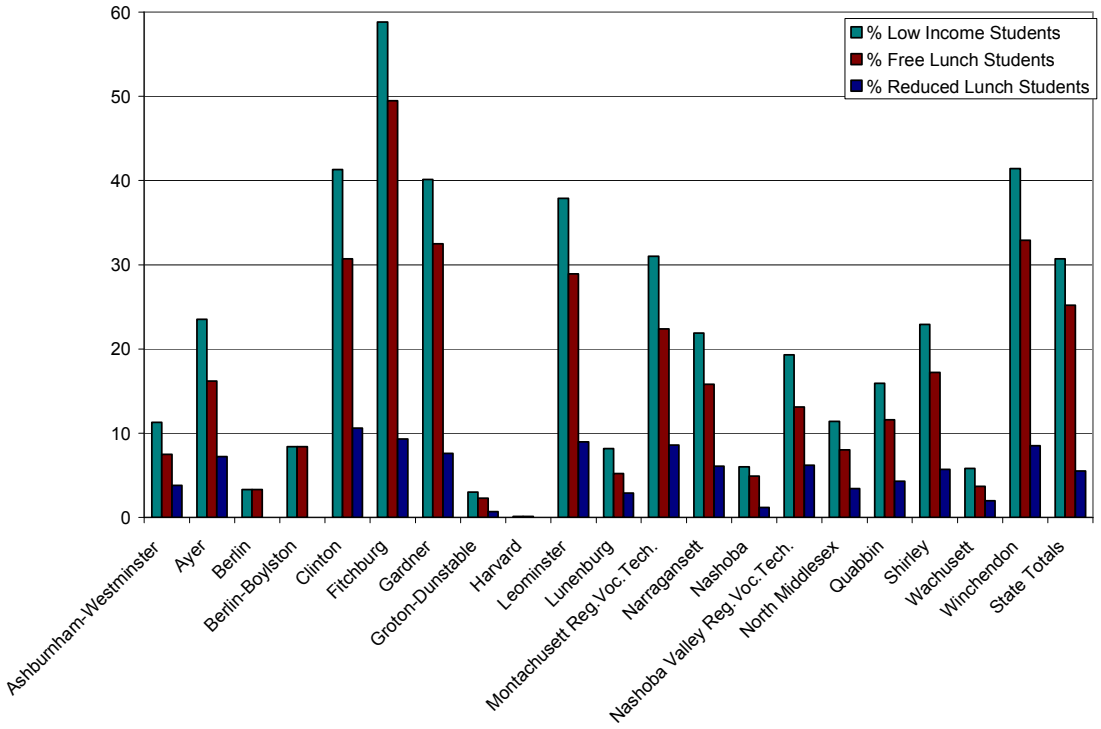


School District Enrollment by income Status

Five of the school districts within CHNA 9 had much higher percentages of low income students in 2008 – 2009 than the State average of 30.7%. The highest percent of low income students was found in Fitchburg at 58.8%, followed by Winchendon at 41.4%, Clinton at 41.3%, Gardner at 40.1%, and Leominster at 37.9%. The school districts with the fewest low income students were Harvard, with 0.1% of students described as low income, Groton-Dunstable with 3% and Berlin with 3.3% low income students.

Another indicator of the income status of students in a school district is the percent of students who receive a free lunch. In 2008 – 2009, 25.2% of the students within the Commonwealth qualified to receive a free lunch. Again, the same five school districts reported higher percentages of students receiving free lunches than the State. Fitchburg had the highest percent of students receiving free lunches at 49.5%, followed by Winchendon at 32.9%, Gardner at 32.5%, Clinton at 30.7% and Leominster at 28.9%. Again, the school districts with the fewest students eligible for free lunches were Harvard, with 0.1% of students eligible for free lunches, Groton-Dunstable with 2.3% and Berlin with 3.3% of students receiving free lunches.

School District Enrollment by Income Status 2008 - 2009

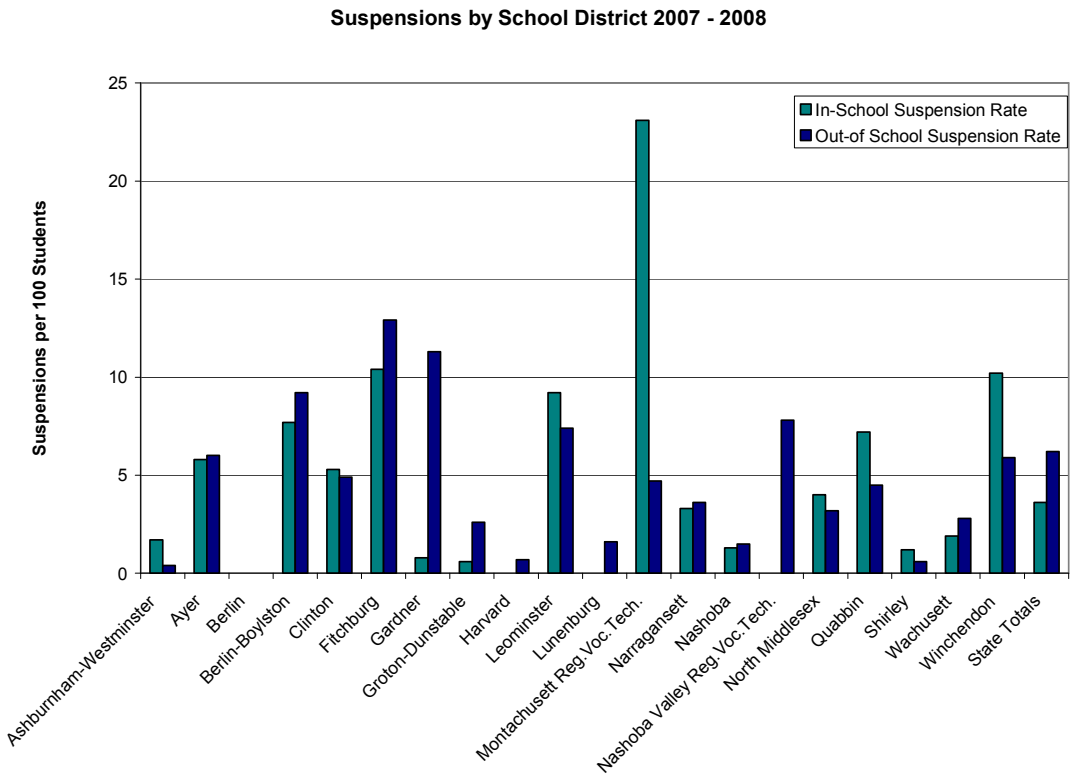


Suspensions by School District

During the 2007 – 2008 school year, there were more out-of-school suspensions than in-school suspensions within the State, with overall rates of 6.2 out-of-school suspensions per 100 students and 3.6 in-school suspensions per 100 students. Half of the school districts in CHNA 9 also had higher out-of-school suspension rates than in-school ones, while other school districts reported a higher in-school suspension rate.

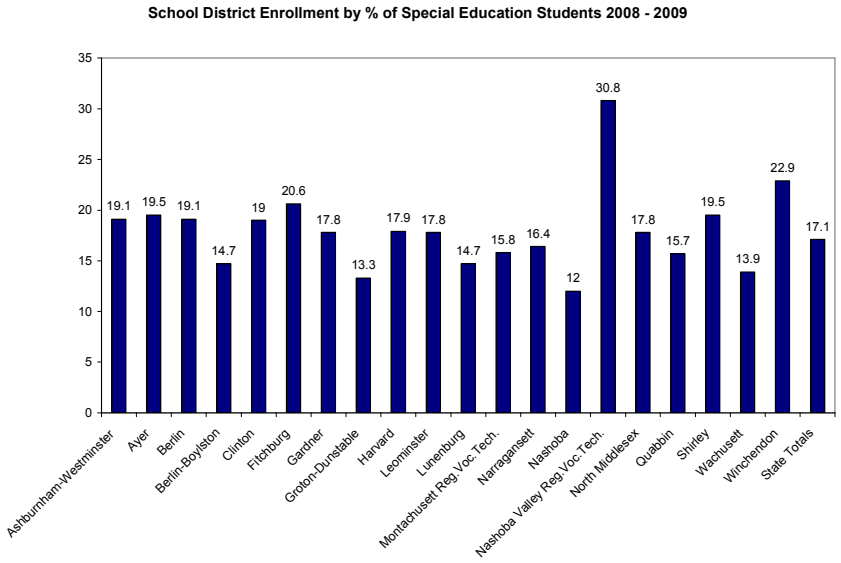
When out-of-school and in-school suspensions are combined, the State had an overall suspension rate of 9.8 per 100 students in 2007 - 2008. Nine of the school districts in CHNA 9 had a combined suspension rate greater than that of the Commonwealth. The highest suspension rate was reported at Montachusett Regional Vocational School with a rate of 27.8. Fitchburg reported 23.3 suspensions per 100, while Berlin-Boylston had 16.9, Leominster had 16.6 and Winchendon had 16.1 suspensions per 100 students. Berlin, a pre-kindergarten through grade 6 school district, reported zero suspensions. Harvard at 0.7 and Lunenburg at 1.6 reported low suspension rates per 100 students.

The highest in-school suspension rates were reported by Montachusett Regional Vocational School at 23.1, followed by Fitchburg at 10.4, and Winchendon at 10.2 per 100 students. The highest out-of-school suspension rates were reported by Fitchburg at 12.9, Gardner at 11.3, and Berlin-Boylston at 9.2 per 100 students.



School District Enrollment by Percent of Special Needs Students

Of the 20 school districts in CHNA 9, 12 reported special needs student enrollment percentages higher than the State average of 17.1% during the 2008 – 2009 school year. The highest percentages of special needs students were reported at Nashoba Valley Regional Vocational Technical School at 30.8%, followed by Winchendon at 22.9% and Fitchburg at 20.6%. The lowest percentages of special needs students were reported in Nashoba at 12%, Groton-Dunstable at 13.3% and Wachusett at 13.9%.



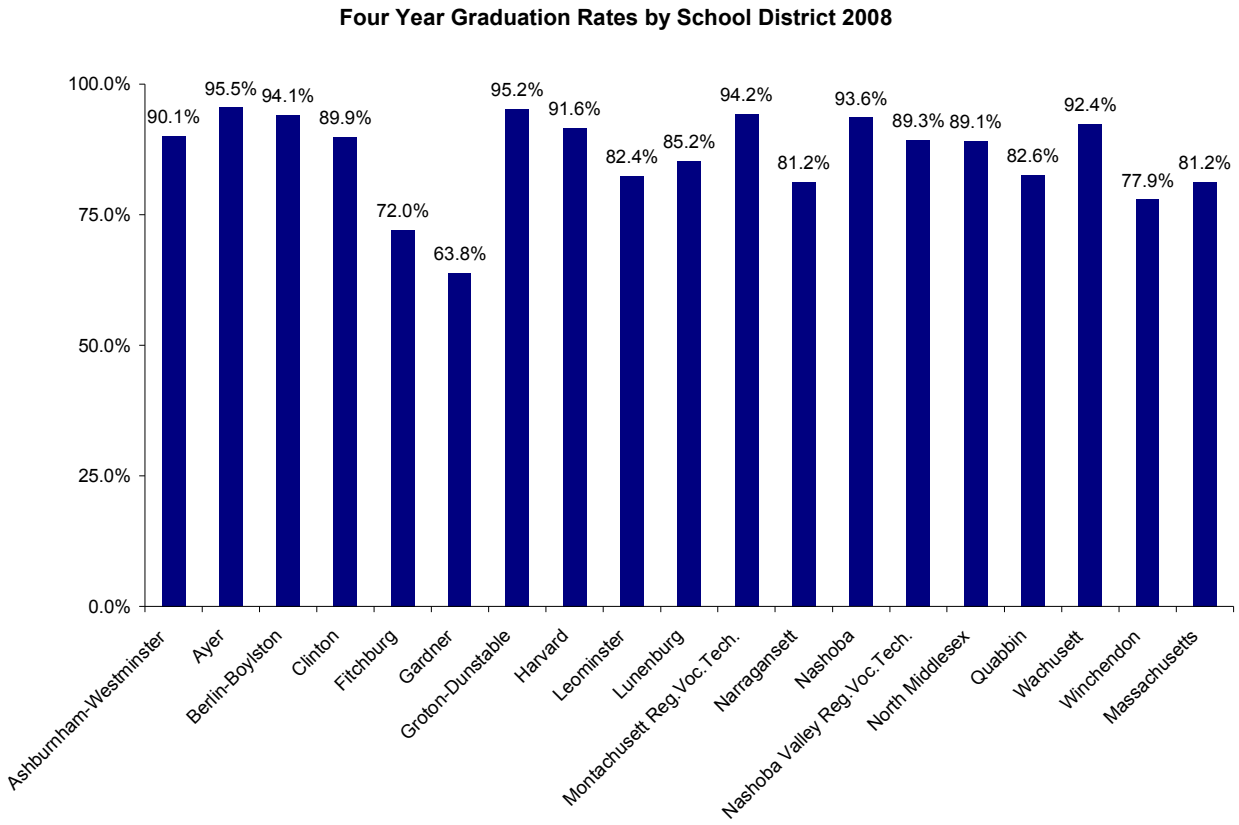
Graduation and Dropout Rates by School District

Within the Commonwealth the four year graduation rate for 2008 was 81.2, indicating that 81.2% of the students who entered high school (defined as entering 9th grade for the first time) in 2004 – 2005 graduated on schedule four years later in 2008. The formula used here also considers transfers out and in during the four year period.

Fifteen of the 18 school districts within CHNA 9 had graduation rates equal to or higher than the State, with 8 of CHNA 9 school districts reporting graduation rates of more than 90%. The highest graduation rates were seen in Ayer at 95.5%, Groton-Dunstable at 95.2%, Montachusett Regional Vocational Technical at 94.2%, and Berlin-Boylston at 94.1%.

On the opposite end of the spectrum, 3 of CHNA 9 school districts, all part of the JCOH service area, reported graduation rates lower than the State. The lowest graduation rate was seen in Gardner at 63.8%, a full 30 percentage points less than the figures reported in CHNA 9 school districts with the highest graduation rates and over 17 percentage points less than the State average. As a matter of fact, Gardner reported the 16th lowest graduation rate of all of the school districts in the Commonwealth.

Two other JCOH communities experienced graduation rates lower than the State, with Fitchburg reporting a graduation rate of 72% and Winchendon reporting a graduation rate of 77.9%.



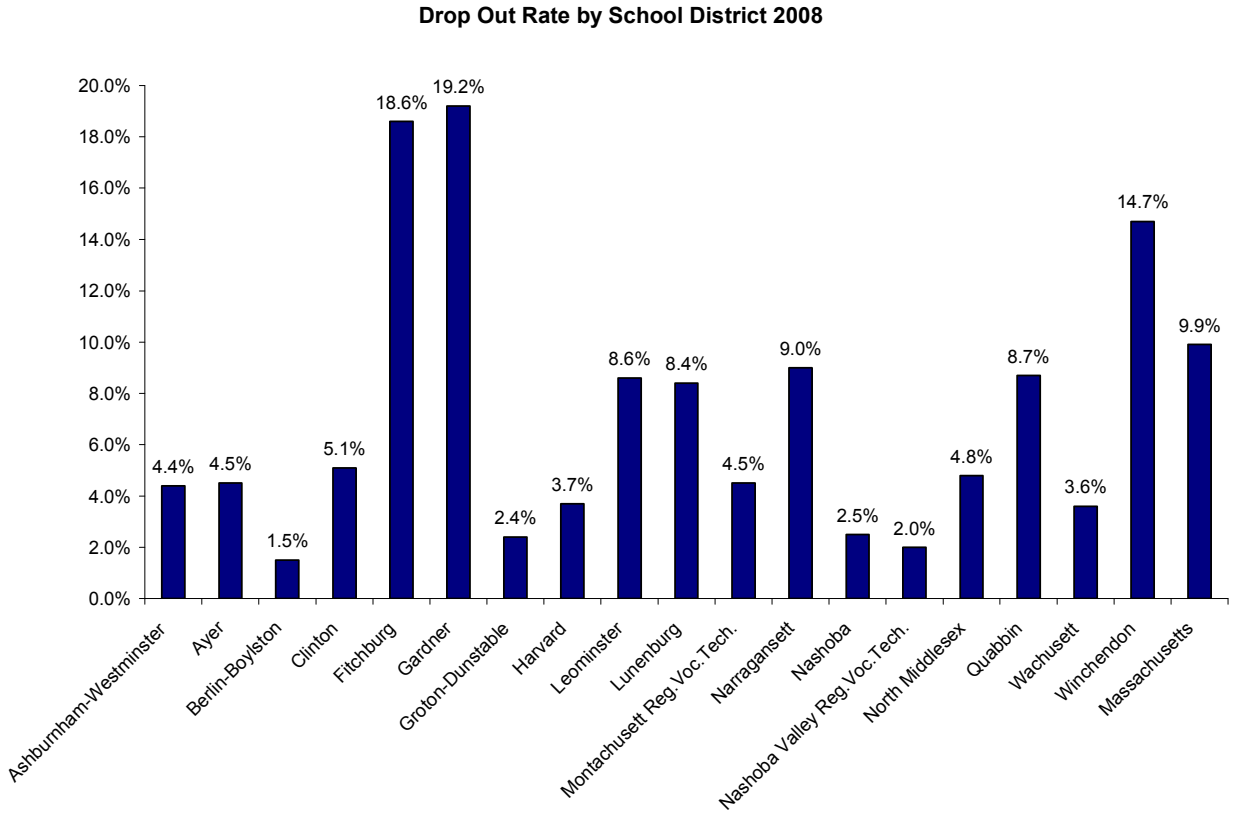
Within the Commonwealth, the dropout rate for 2008 was 9.9, indicating that 9.9% of the students who entered high school (defined as entering 9th grade for the first time) in 2004 – 2005 dropped

out before their scheduled graduation four years later in 2008. This number does not include GED students, students still enrolled and working toward graduation or students expelled from schools, which are all reported on separately. The formula used here also considers transfers out and in during the four year period.

Fifteen of the 18 school districts within CHNA 9 had dropout rates lower than the State, with 10 of CHNA 9 school districts reporting dropout rates of less than 5%. The lowest drops out rates were seen in Berlin-Boylston at 1.5%, Nashoba Valley Regional Vocational Technical at 2%, Groton-Dunstable at 2.4% and Nashoba at 2.5%.

On the opposite end of the spectrum, 3 of CHNA 9 school districts, all part of the JCOH service area, reported dropout rates higher than the State. The highest dropout rate was seen in Gardner at 19.2%, eight times the figures reported in CHNA 9 school districts with the lowest dropout rates and almost twice the State dropout rate. As a matter of fact, Gardner reported the 19th highest dropout rate of all of the school districts in the Commonwealth.

Two other JCOH communities experienced dropout rates higher than the State, with Fitchburg reporting a dropout rate of 18.6% and Winchendon reporting a dropout rate of 14.7%.



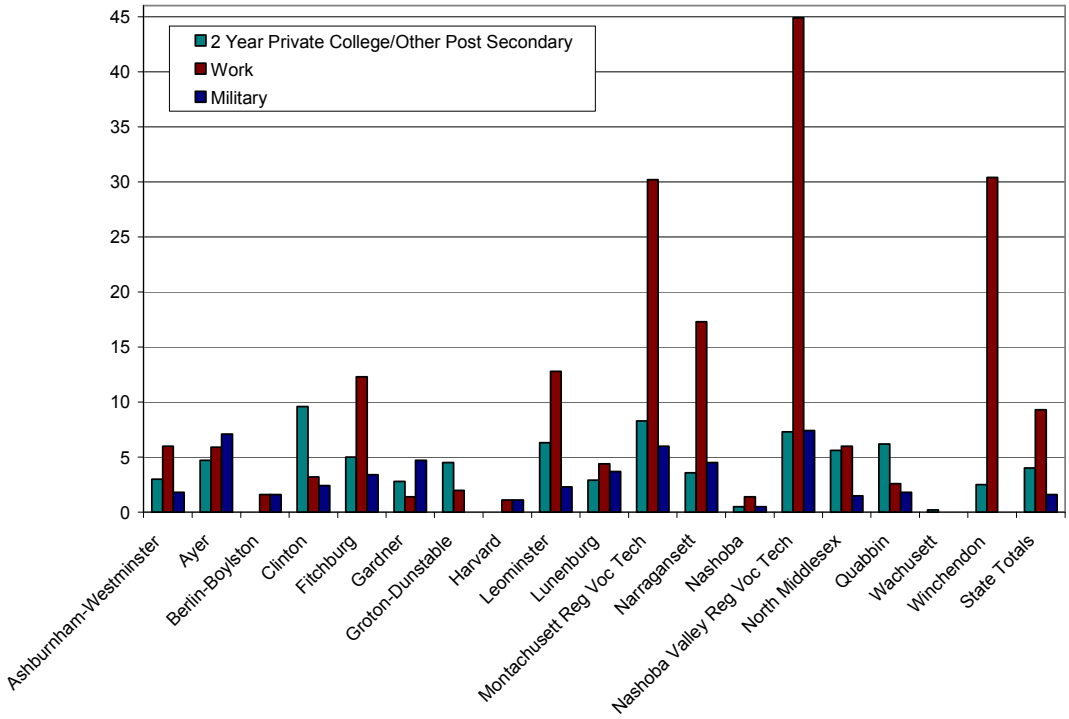
Plans of High School Graduates by School District

Among the 2008 high school graduates within the Commonwealth, 30% planned to attend four year private colleges, 27% planned to attend four year public colleges, 21% planned to attend two year public colleges, 9% planned to go to work, 4% planned to attend either a two year public or other post-secondary institution and 2% planned to join the military. Within the school districts within CHNA 9, the plans of high school graduates in 2008 varied widely. The school districts with the highest percentage of students planning to attend four year private colleges were Harvard at 70.2% (more than 2.3 times the State average) followed by Nashoba at 51.8% and Berlin-Boylston at 43.8%. The CHNA 9 school districts with the lowest percentage of students planning to attend four year private colleges were Wachusett at zero (it should be noted that 98.7% of Wachusett students plan to attend four year public colleges), followed by Nashoba Valley and Montachusett Regional Vocational Technical Schools at 1.5% and 5%, respectively.

The school districts with the highest percentage of students planning to attend four year public colleges were Wachusett at 98.7%, followed by Ashburnham-Westminster at 41.9% and North Middlesex at 41%. The CHNA 9 school districts with the lowest percentage of students planning to attend four year public colleges were Nashoba Valley and Montachusett Regional Vocational Technical Schools at 14% and 16.9%, respectively.

The school districts with the highest percentage of students planning to attend two year public colleges were Narragansett at 39.1%, followed by Gardner at 35.8% and Winchendon at 35.4%. The CHNA 9 school districts with the lowest percentage of students planning to attend two year public colleges were Wachusett at zero, followed by Groton-Dunstable at 11.1% and Nashoba at 11.3%.

Plans of High School Graduates 2008

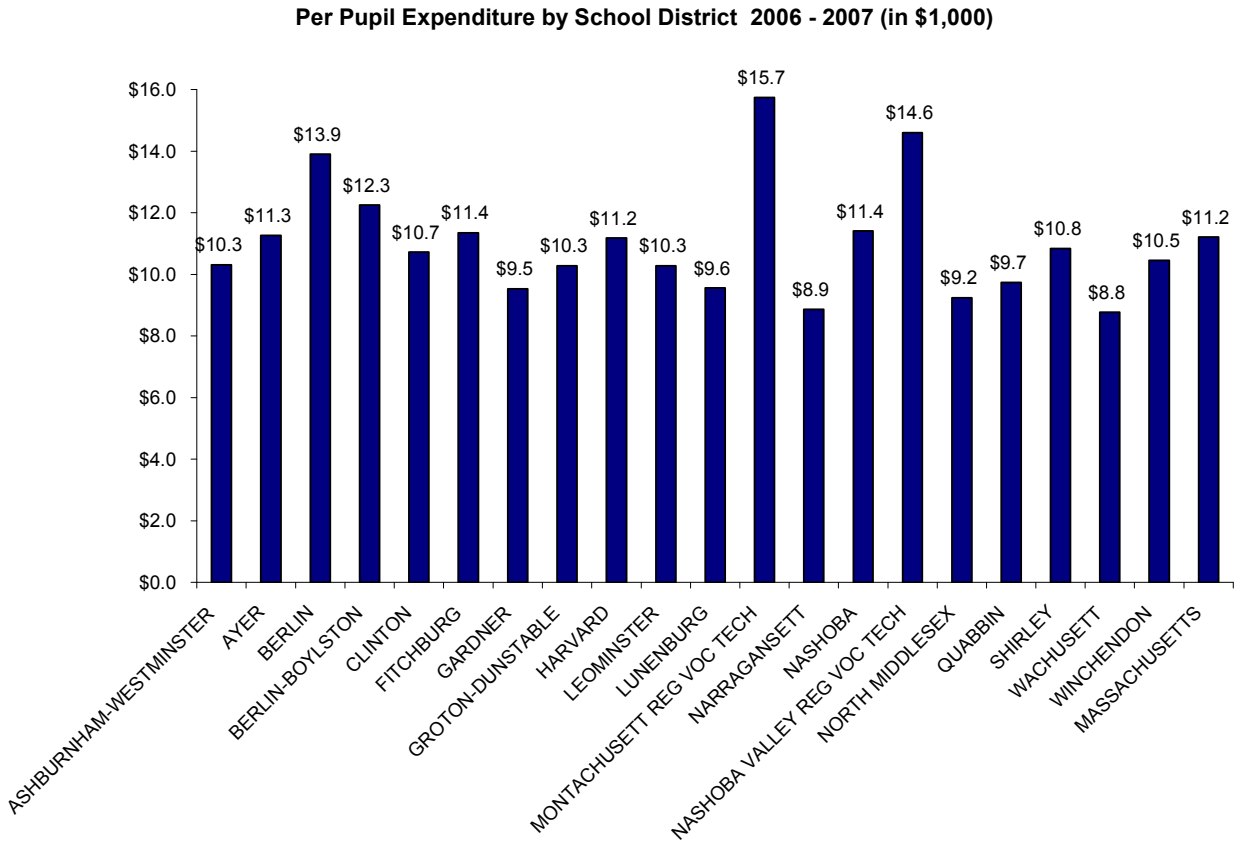


When two year private colleges and other post-secondary institutions are combined, Clinton has the highest percent of students planning to continue their education at this level at 9.6%, followed by Montachusett and Nashoba Valley Regional Vocational Technical Schools at 8.3% and 7.3%, respectively.

The highest percentage of students planning to enter the military was reported at Nashoba Valley Regional Vocational Technical Schools at 7.4%, followed by Ayer at 7.1%, Gardner at 4.7% and Narragansett at 4.5%.

Not surprisingly, the Regional Vocational Technical Schools were among the school districts with the highest percentage of graduates reporting plans to enter the workforce. Almost 45% of the Nashoba Valley students and 30.2% of the Montachusett students planned to go to work, as did 30.4% of the Winchendon students.

Per Pupil Expenditure by School District



Within Massachusetts, the average per pupil expenditure for 2006 – 2007 was $11,210. Within the school districts in CHNA 9, 6 had per pupil expenditures higher than the State, led by the Regional Vocational Technical Schools, with Montachusett at $15,747 and Nashoba Valley at $14,593. These schools were followed by Berlin at $13,903, Berlin-Boylston at $12,253, Nashoba at $11,410 and Fitchburg at $11,351. Eight additional school districts had per pupil spending equal with or less than the State, while 6 school districts reported expenditures of less than $10,000 per pupil. The lowest per pupil spending was seen in Wachusett at $8,769, followed by Narragansett

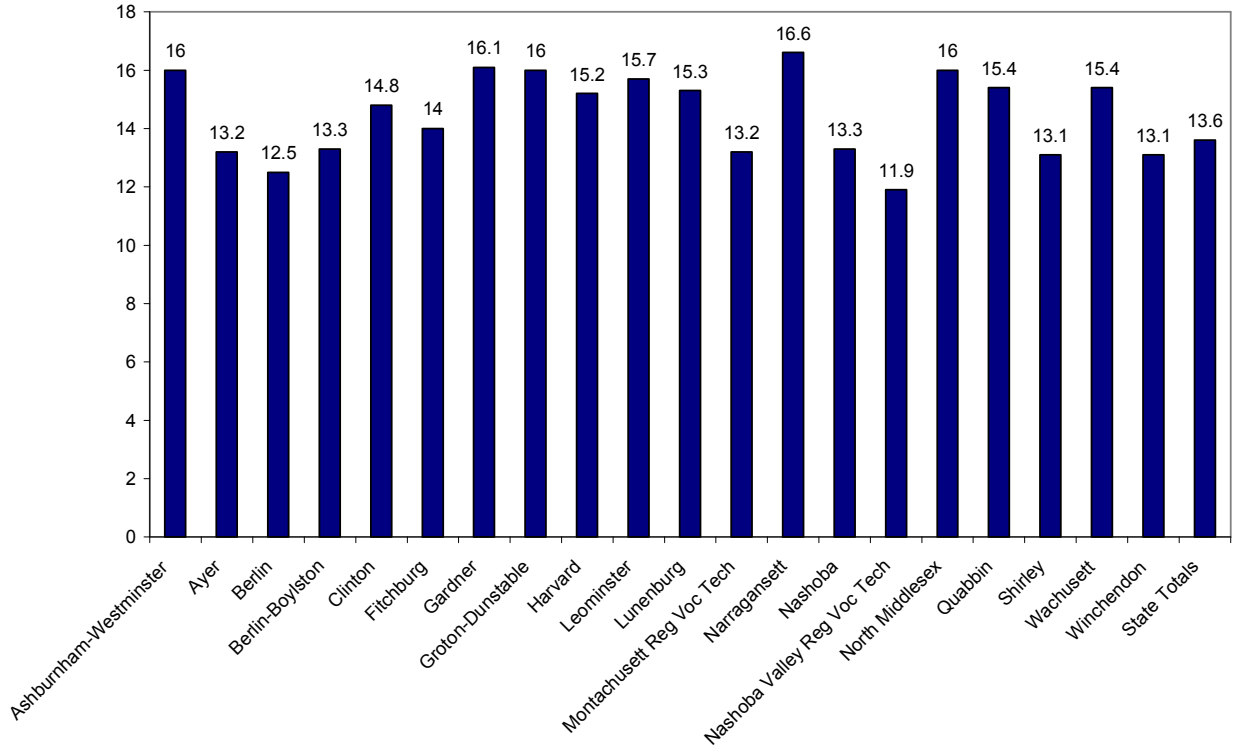
at $8,861, North Middlesex at $9,241, Gardner at $9,532, Lunenburg at $9,557 and Quabbin at $9,734.

Student/Teacher Ratio by School District

During the 2007 – 2008 school year, there was an average of 13.6 students for every one teacher within the school districts in the Commonwealth. A lower student/teacher ratio may be indicative of smaller class sizes and more individualized attention for the students. For CHNA 9 school districts, this student/teacher ratio ranged from a low of 11.9 to 1 in the Nashoba Valley Regional Vocational Technical School to a high of 16.6 students for every one teacher at Narragansett. Overall, 8 school districts had student/teacher ratios lower than the State, with the 11.9 to 1 ratio reported at Nashoba Valley followed by 12.5 to 1 in Berlin, and 13.1 to 1 reported in both Winchendon and Shirley.

The remaining 12 school districts had student to teacher ratios higher than the State. Narragansett, with a ratio of 16.6 to 1 was followed by Gardner with a student/teacher ratio of 16.1 to 1, and Ashburnham-Westminster, Groton-Dunstable, and North Middlesex all with student teacher ratios of 16 to 1.

Number of Students per Teacher (Student /Teacher Ratio) 2007 - 2008



Teacher Race/Ethnicity by School District

Within the Commonwealth, 91.9% of teachers during the 2007 – 2008 school year described themselves as White. The only school district in CHNA 9 with a lower percentage of White teachers was Fitchburg with 90.7% of its teachers described as White. Every other school district

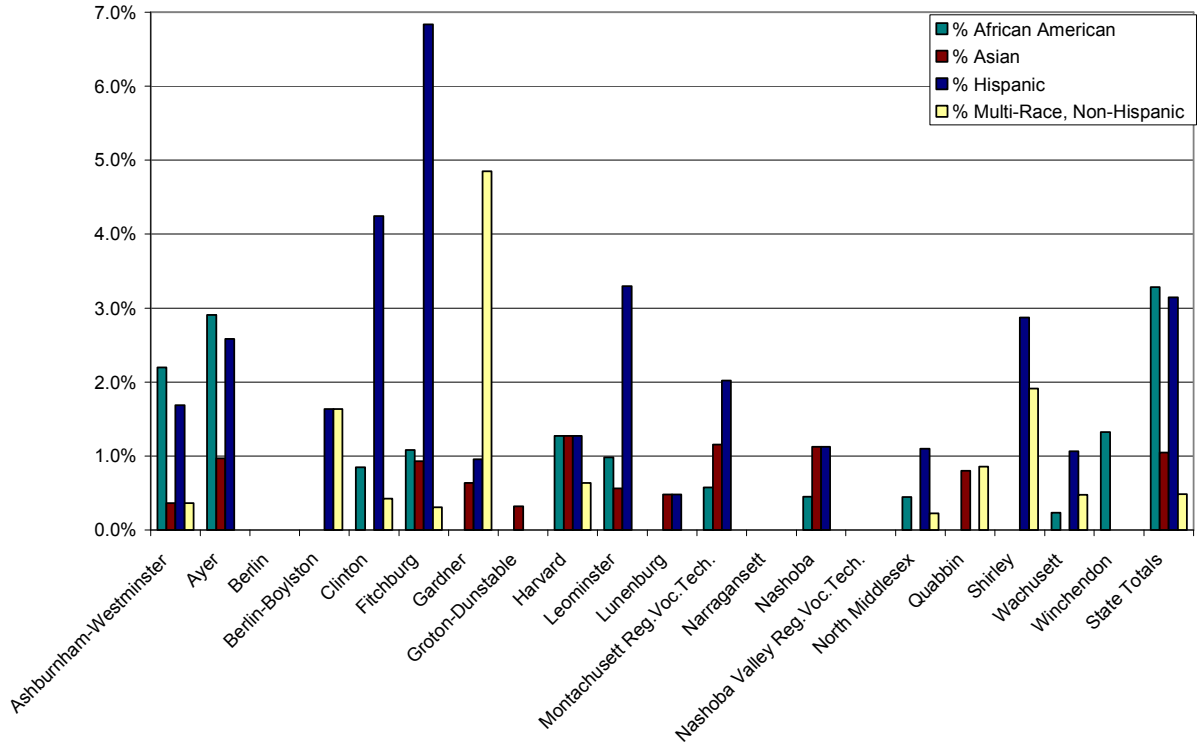
within CHNA 9 reported higher percentages of white teachers than the State, with two school districts, Berlin, and Narragansett, reporting that 100% of their teachers were White.

The percentage of teachers who describe themselves as African American was 3.3% for the State overall. All CHNA 9 school districts reported a lower percentage of African American teachers than the State. The highest percentages of African American teachers were reported in Ayer at 2.9% and Ashburnham-Westminster at 2.2%.

Within the Commonwealth, 3.1% of the teachers described themselves as Hispanic. Three CHNA 9 school districts reported a higher percentage of Hispanic teachers, with Fitchburg with 6.8%, Clinton with 4.2%, and Leominster with 3.3% of their teachers described as Hispanic.

The percentage of teachers who describe themselves as Asian was 1% for the State overall. Three of the CHNA 9 school districts reported a higher percentage of Asian teachers than the State. The highest percentages of Asian teachers were reported in Harvard at 1.3%, Montachusett Regional Vocational Technical School at 1.2% and Nashoba at 1.1%.

Percent of Teachers by Race/Ethnicity 2007 - 2008



Within the Commonwealth, 0.5% of the teachers described themselves as being Multi-Race, non-Hispanic. Several of the school districts within CHNA 9 reported higher percentages of teachers in this racial/ethnic group, with Gardner at 4.8%, Shirley at 1.9% and Berlin-Boylston at 1.6%.

As the quantitative data outlined the current section of this report and in previous section entitled ***School District Enrollment by Racial/Ethnic Group*****,** the demographic profile of the school systems' teachers differs significantly from the demographics of the diverse student body in the

study area. This variance arose frequently in the qualitative data as well, with specific concerns related to students receiving differential treatment,

> *"My son was not tracked to go to college…I feel that it was discrimination. People of color have to be careful for their children. They try to tag them. I have more degrees than they [the teachers] do… [despite what they said] both my children are going to college." (African American)*

Community members also noted that by having more diversity among teachers and school administrators, school faculty could play instrumental roles as advocates and role models for students and would assist in the overall well being and academic achievement of the student population.

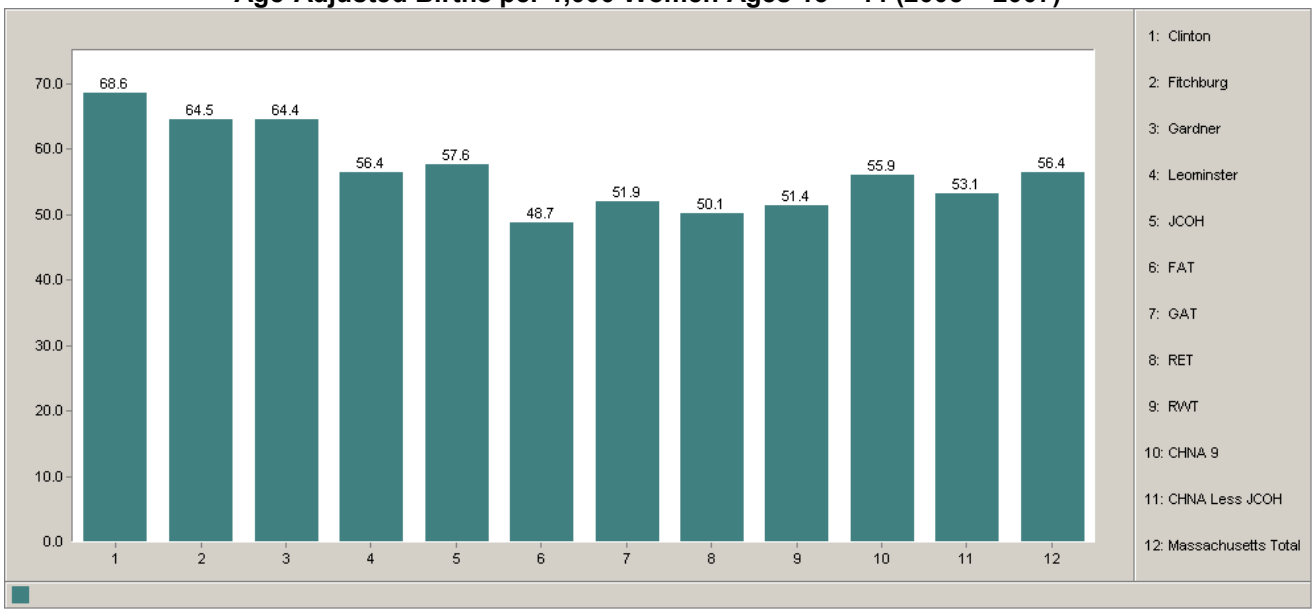
> *"Other kids don't know how to relate to minorities…this causes stress on the children…kids don't have enough advocates in school. There needs to be more minority representation in the schools!" (African American)*

Maternal and Child Health

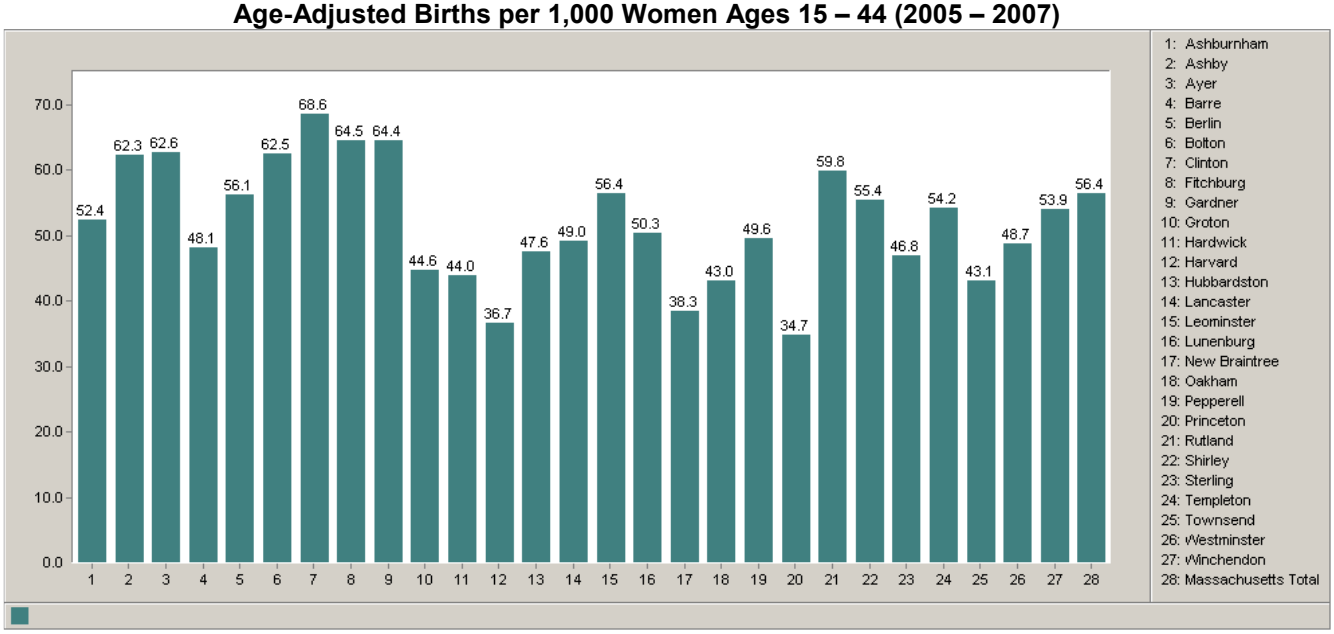
General Fertility Rate or Age-Adjusted Births per 1000 Women Ages 15 - 44

Overall, Massachusetts had a fertility rate, defined as age-adjusted births per 1000 women ages 15 – 44, of 56.4 for the period of 2005 - 2007. Within CHNA 9, the highest fertility rate was reported in Clinton with 68.6 births per 1000 women in this 3 year period. Fitchburg with a fertility rate of 64.5 and Gardner with a fertility rate of 64.4 also had rates higher than the State. The lowest fertility rates were reported in the Fitchburg Area Towns (48.7), the Rural Eastern Towns (50.1) and the Rural Western Towns (51.4).

Age-Adjusted Births per 1,000 Women Ages 15 – 44 (2005 – 2007)



Age-Adjusted Births per 1,000 Women Ages 15 – 44 (2005 – 2007)



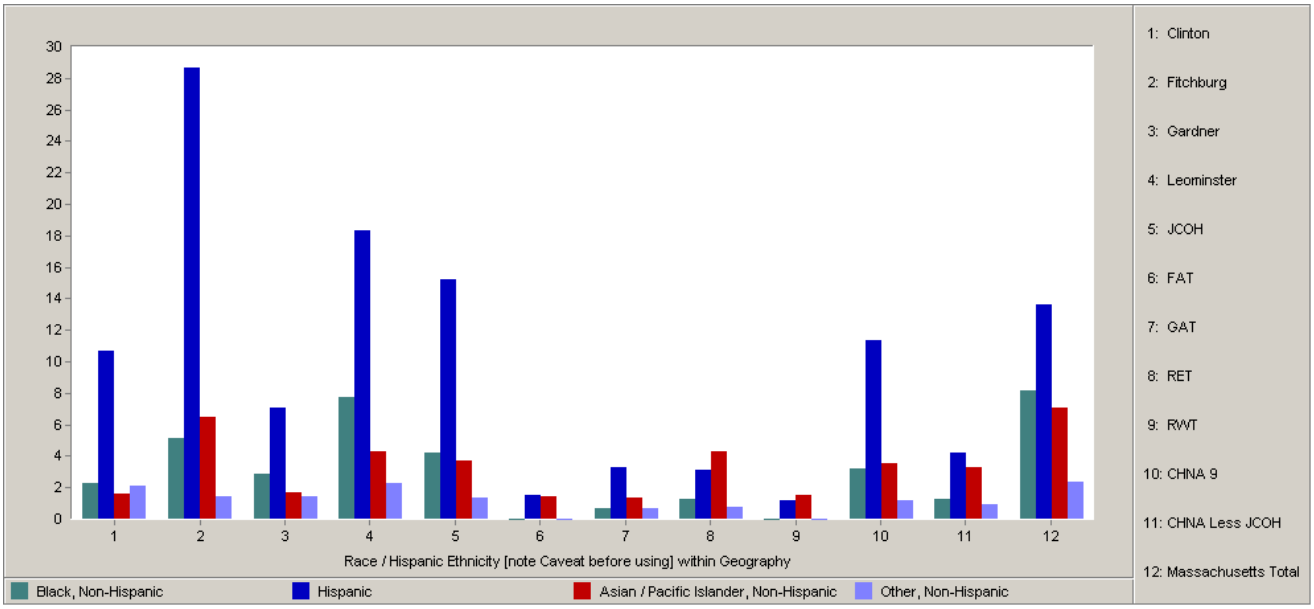
Within the individual cities and towns in CHNA 9, the highest fertility rates were still found in Clinton, Fitchburg and Gardner. On the other hand, three towns reported fertility rates of less than 40, with the lowest fertility rates found in Princeton with 34.7 births per 1000 women, followed by Harvard with a fertility rate of 36.7 and New Braintree with a fertility rate of 38.3.

Births by Race/Ethnicity

In Massachusetts in the 2005 -2007 time period, 68.4% of the births were to White, non-Hispanic mothers, while 13.6% of births were to Hispanic mothers, 8.2% were to Black, non-Hispanic mothers and 7.1% were to Asian mothers. The remaining 2.7% of births were to other, non-Hispanic mothers, American Indian, non-Hispanic mothers and to mothers of unknown race/ethnicity.

When we compare the percent of births to mothers of the major racial/ethnic groups to the breakdown of the Massachusetts population by racial/ethnic group in 2005 (7.9% Hispanics, 6% Blacks and 4.8% Asians), it is clear that the birth rates for these racial/ethnic groups are higher than that of the White, non-Hispanic population. The Hispanic birth rate during this time period was 1.7 times what would be expected based on the Hispanic population within the State, while the Asian birth rate was 1.5 times and the Black birth rate was 1.4 times the expected rate. The White, non-Hispanic birth rate, by contrast, was only 84% of the expected rate based on population.

Percent of Births by Racial/Ethnic Group (2005 – 2007)



Within CHNA 9 overall, 11.4% of all births in the 2005 – 2007 time period were to Hispanic mothers while 3.2% were to Black, non-Hispanic mothers and 3.6% were to Asian mothers. When these numbers are compared to CHNA 9's population, the birth rates are similar to the State's birth rates for Hispanics and Asians at 1.6 times and 1.5 times what was expected, respectively, but lower for the Black population at 1.1 times the expected rate. A similar analysis for the JCOH service area

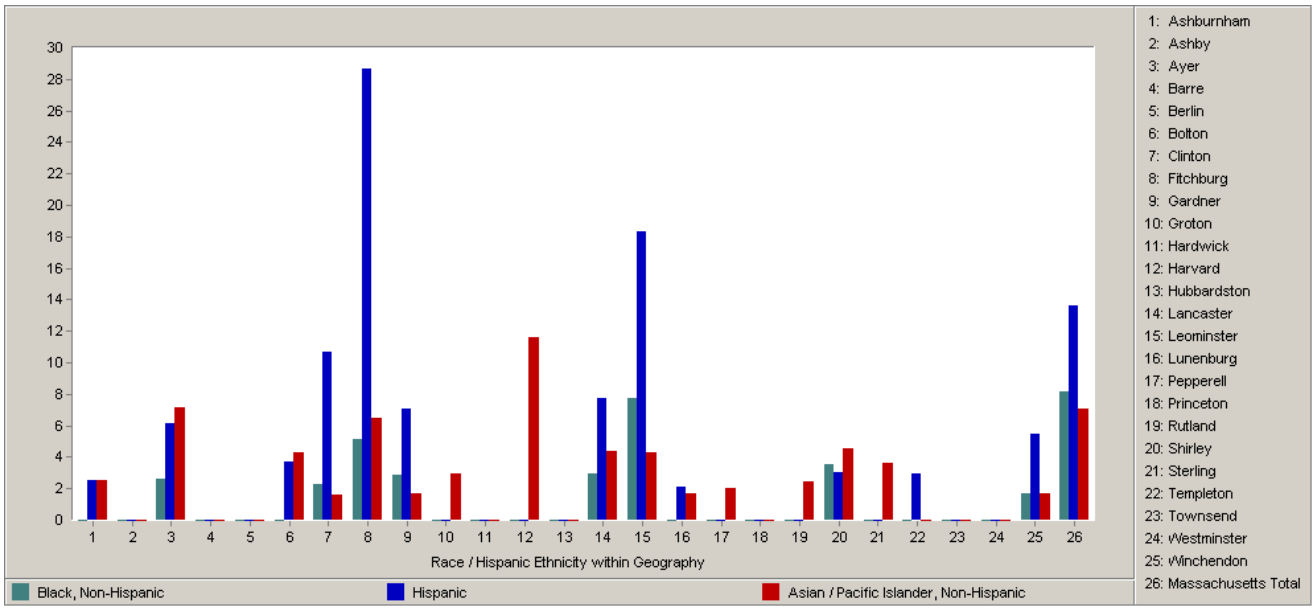
indicates 15.2% of births to Hispanic mothers (1.7 times expected), 3.7% to Asian mothers (1.2 times expected) and 4.2% to Black mothers (1.5 times expected). The CHNA Less JCOH service area figures tell quite a different story, with both the Hispanic and Black non-Hispanic birth rates lower than expected at 91% and 41% of the expected amount, respectively. However, the Asian percent of births at 3.3% was 2.2 times the expected amount based on population.

Within the reporting regions, the highest percent of overall births in the 2005 – 2007 time period to Hispanic mothers was in Fitchburg, at 28.6% of all births or 1.7 times the expected amount. This was followed by Leominster with 18.3% of births to Hispanic mothers and Gardner with 7.1% of births to Hispanic mothers, both equal to 1.4 times the expected rate. In Clinton 10.7% of births were to Hispanic mothers, only 80% of the expected amount.

The highest percent of overall births in the 2005 – 2007 time period to Black mothers was in Leominster at 7.7% of all births or 1.8 times the expected amount. In Fitchburg, 5.1% of births were to Black mothers or 1.2 times the expected rate.

The highest percent of overall births in the 2005 – 2007 time period to Asian mothers was in Fitchburg at 6.4% of all births or 1.1 times the expected rate. In the Rural Eastern Towns and in Leominster 4.3% of births were to Asian mothers, which was 2.4 times the expected rate in the Rural Eastern Towns and 1.2 times the expected rate in Leominster.

Percent of Births by Racial/Ethnic Group (2005 – 2007)



Within the cities and towns in CHNA 9, there were high percentages of births to Hispanic mothers in Lancaster (7.8% of births), Ayer (6.2% of births) and Winchendon (5.5% of births) in 2005–2007. While Lancaster's Hispanic birth rate was only 82% of expected based on its Hispanic population, Ayer's Hispanic birth rate was 1.2 times the expected amount, while Winchendon's was 2.4 times the expected rate.

A similar analysis for the Black population indicates that there were several areas with Black birth rates over 2%. What is interesting, however, is that although the Black birth rates were very close

to the expected amount for Clinton and Gardner, the percentage of Black births was much lower than expected in Lancaster, Shirley, and Ayer. In Shirley, the percentage of Black births was 50%

of the expected, in Ayer it was 36% of expected and in Lancaster it was only 21% of expected. At the opposite end of the spectrum, Winchendon reported 1.7 times the percent of Black births expected based on its overall Black population.

The Asian birth figures indicate that Harvard had the highest percentage of Asian births in CHNA 9 at 11.6% of births in 2005 – 2007. This was 3.9 times the rate expected based on Harvard's Asian population. Ayer had the second highest percentage of Asian births at 7.2% or 1.8 times the expected rate. Several other towns had percentages of Asian births in the 2.4% to 4.3% range, but because they also had very small Asian populations, these rates were significantly higher than expected. Sterling's 3.6% Asian birth rate was 7 times that expected based on its Asian population. Rutland had a percentage of Asian births that was 4 times the expected, while Ashburnham and Bolton had birth rates which were 3.3 times and 3 times the expected percentages, respectively.

Births to Young Mothers

There were 164 births to young women aged 10 – 14 in Massachusetts during the 2005 – 2007 time period. Within CHNA 9, there were 7 births to young women aged 10 – 14 during this time period. All 7 of these births were to young women residing in the JCOH service area. Because the Commonwealth suppresses numbers of less than 5 on its reports and replaces them with "NA", it cannot be determined how many of these young women were from which of the cities within the JCOH. However, it can be determined that all 7 were from Fitchburg, Gardner, or Leominster and that at least 1 young woman was from each of these cities.

In Massachusetts in the 2005 – 2007 time period, 6.1% of all births were to young women in the 15 – 19 age group. This represented an age specific birth rate of 21.7 per 1000. Within the reporting regions in CHNA 9, Fitchburg had the highest percent of all births to young women in the 15 – 19 age group at 12.7%, followed by Gardner at 10%, Clinton at 7.4 %, the Gardner Area Towns at 7%, and Leominster at 6.8%, all percentages higher than the State. The age specific birth rates per 1000 women for the 15 – 19 age group in Fitchburg at 47.7 and Gardner at 43.7 were more than twice that of the State, while Clinton and Leominster, with age specific rates of 37.6 and 28.1 were also higher than the State.

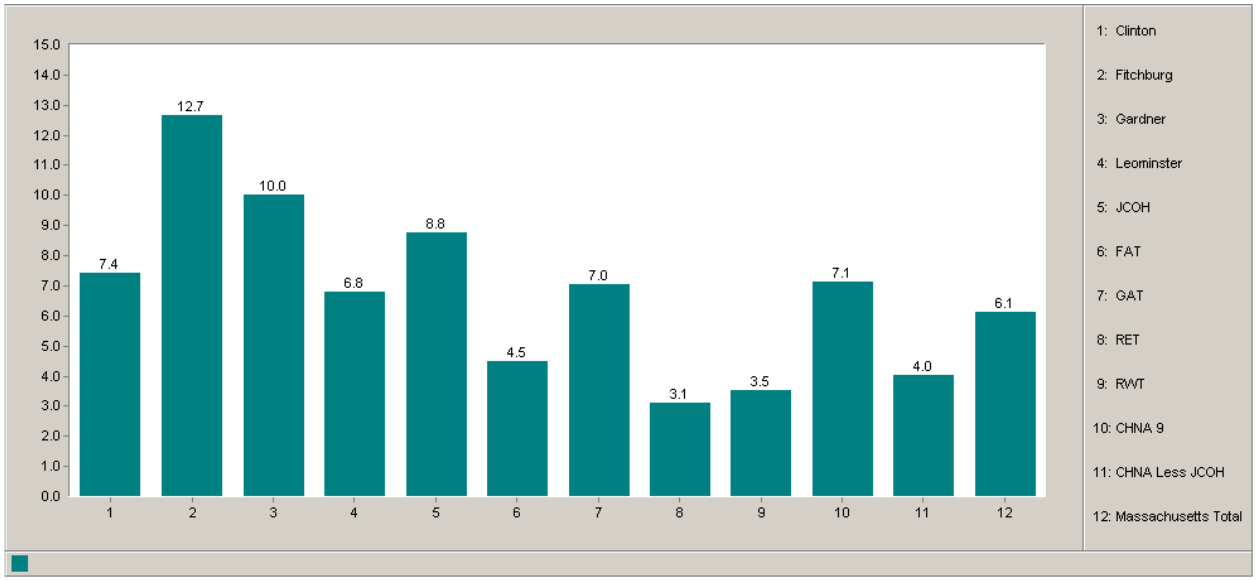
In the focus groups and individual interviews, community members identified a concern about births to young parents. This issue was discussed most extensively in a youth focus group.

> *"The children are having babies at 14. Some girls' baby's dads leave them. The girls leave the babies with their mothers…then DSS gets involved." (Youth)*

Others cited an "acceptance" of young parenting by the youths' parent.

> *"Some people are proud to be grandparents at 34. Boyfriends spend the night in the homes of their girlfriend's with the parent's approval." (General Population)*

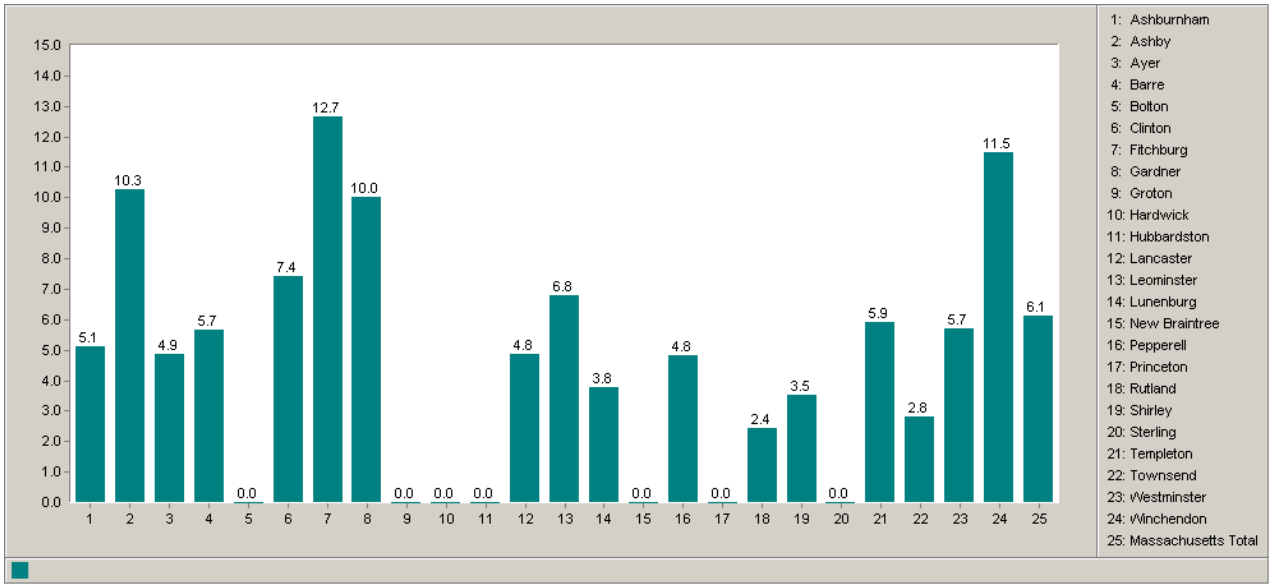
Percent of Births to Young Women Aged 15 – 19 by Reporting Region (2005 – 2007)



The lowest percent of all births to mothers in the 15 – 19 age group was in the Rural Eastern Towns at 3.1% and the Rural Western Towns at 3.5%. The age specific birth rates per 1000 women in these reporting regions for this age group were also lower than the State's, with the Rural Eastern Towns at 9.4 and the Rural Western Towns at 10.1.

CHNA 9 and the JCOH both reported figures higher than the State with 7.1% of CHNA 9 births (age specific rate of 24.5) and 8.8% of all JCOH births (age specific rate of 31.4) to mothers in the 15 – 19 age group. However, the CHNA Less JCOH had lower figures than the State with 4% of all births to mothers in the 15 – 19 age group for an age specific rate per 1000 women of 13. Of the 644 total births in CHNA 9 to young women in the 15 – 19 age group in 2005 – 2007, 80% were to young women residing in the JCOH service area.

Percent of Births to Young Women Aged 15 – 19 by City/Town (2005 – 2007)



Within the individual cities and towns in CHNA 9, Winchendon had a high percent of births to young women in the 15 – 19 age group at 11.5%, for an age specific birth rate of 34.3, while Ashby reported 10.3% of births to young women in this age group for an age specific rate of 32.6.

Births to Young Mothers by Race/Ethnicity

In Massachusetts in the 2005 – 2007 time period, there were 14,205 births to young women in the 15 – 19 age group. Of these births, 45.4% were to White, non-Hispanic mothers, 34.5% were to Hispanic mothers, 12.8% were to Black mothers, and 3.4% were to Asian mothers. These births represented age and race/ethnicity specific birth rates per 1000 women of 12.9 for White, non-Hispanic young women, 71.6 for the Hispanic young women, 35.1 for Black young women, and 14.9 for Asian young women.

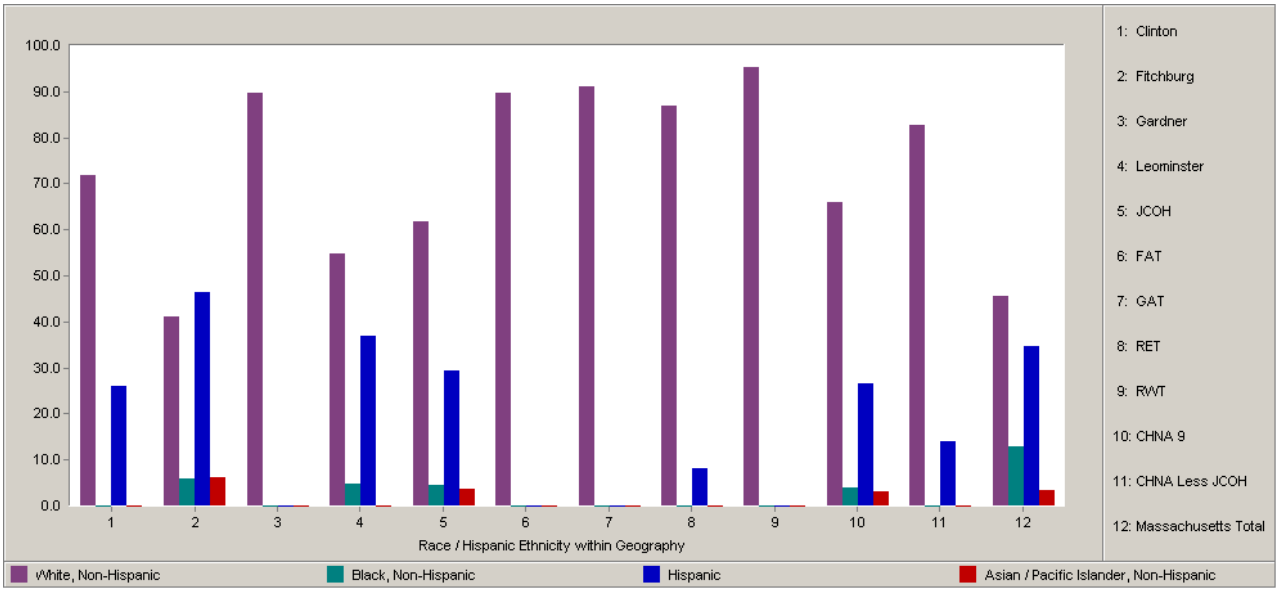
Within CHNA 9, several of the reporting regions reported high percentages of births in the 15 – 19 age group to White, non-Hispanic women, including Gardner, the Fitchburg Area Towns, the Gardner Area Towns, the Rural Eastern Towns, and the Rural Western Towns.

Fitchburg reported that 46.4% of its births in the 15 – 19 age group during the period of 2005 – 2007 were to Hispanic women, while in Leominster it was 36.8% and in Clinton it was 26.1%.

Fitchburg and Leominster were the only reporting regions in CHNA 9 to report births to Black women in the 15 – 19 age group during the period of 2005 – 2007, with 5.8% of the births in Fitchburg and 4.7% of the births in Leominster to young Black women. Fitchburg also reported that 6.3% of births to young women in that city were to Asian women.

A review of the age and race/ethnicity specific birth rates per 1000 women is warranted here. CHNA 9's highest birth rate was experienced by young Hispanic women in Fitchburg at 109.1, more than 1.5 times the rate seen among young Hispanic women statewide. This was followed by a rate of 58.2 for young Hispanic women in Clinton and a rate of 52.6 for young Hispanic women in Leominster, both below the State average of 71.6 for young Hispanic women.

Percent of Births to Women Aged 15 – 19 by Racial/Ethnic Group (2005 – 2007)



The next highest age and race/ethnicity specific birth rate per 1000 women was found among young Black women in Fitchburg, with a rate of 50.9 or more than 1.4 times the State rate of 35.1. This was followed by young Asian women in Fitchburg, with a rate of 46.9, or 3.1 times the State rate for young Asian women of 14.9.

Gardner reported an age specific birth rate of 43.7 per 1000 for White, non-Hispanic women, 3.4 times the rate seen among young statewide. Four other reporting regions had rates above that of the State for White, non-Hispanic women with Clinton at 33.4, Fitchburg at 29.1, Leominster at 21.8, and the Gardner Area Towns at 19.8.

Across the board, the JCOH service area reported higher age and race/ethnicity specific birth rates for all racial and ethnic groups than CHNA 9 and the CHNA Less JCOH.

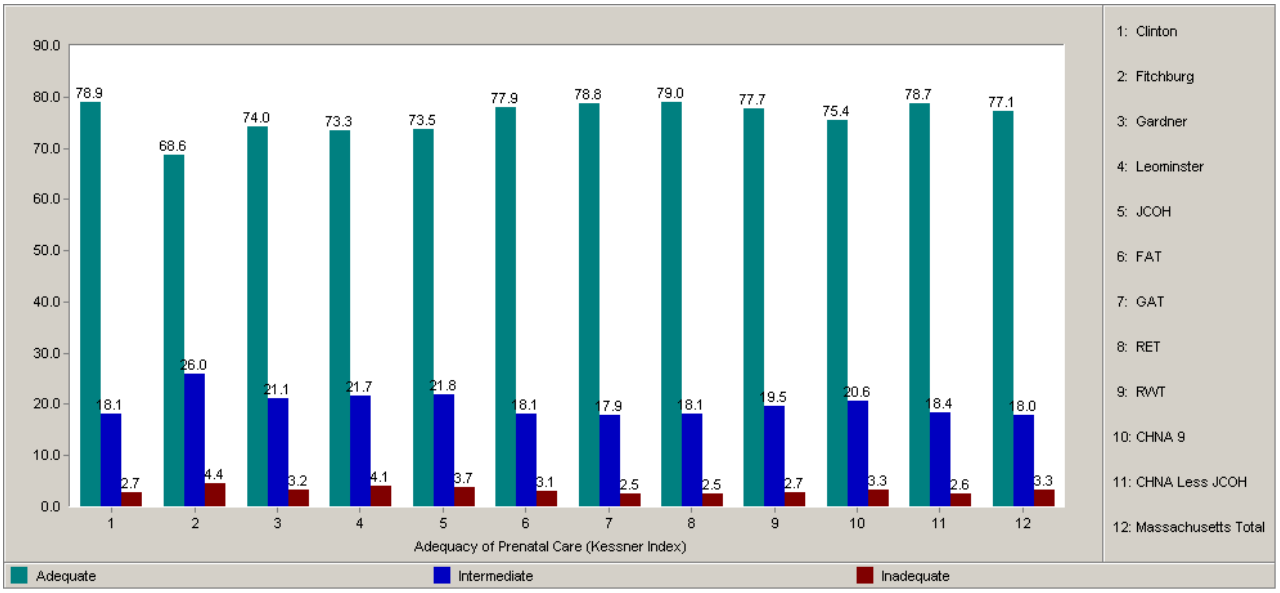
Due to the small number of births in the individual towns within the reporting regions, this analysis cannot be done at that level despite the aggregation of 3 years of data.

Adequate Prenatal Care

One measure of the adequacy of prenatal care used within Massachusetts is the Kessner Index. This measure is based on the trimester in which prenatal care began and the number of prenatal visits. According to the Kessner Index, within the Commonwealth there was adequate prenatal care for 77.1% of total births. Within the reporting regions, several reported percentages of adequate prenatal care higher than the State, with the highest numbers reported in the Rural Eastern Towns at 79%, Clinton at 78.9% and the Gardner Area Towns at 78.8% of births.

The lowest percentages of adequate prenatal care were reported in the 3 cities, with Fitchburg at 68.6%, Leominster at 73.3% and Gardner at 74%. While the JCOH service area as a whole reported a percentage of adequate prenatal care lower than the State at 73.7%, the CHNA Less JCOH performed better than the State on this measure with adequate prenatal care for 78.7% of total births.

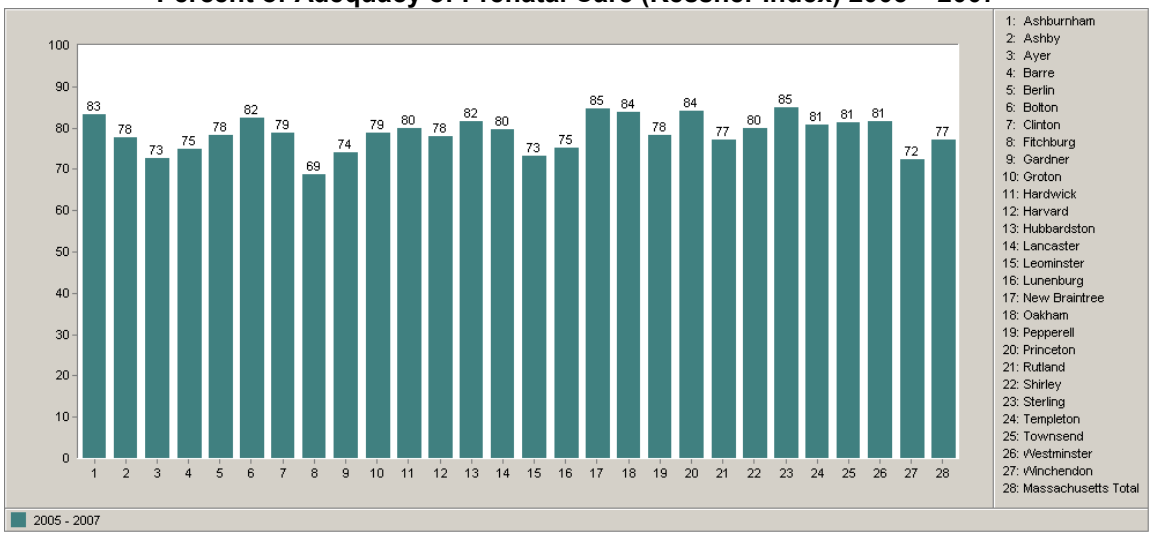
Percent of Adequacy of Prenatal Care (Kessner Index) 2005 – 2007



A review of the adequacy of prenatal care within the individual cites and towns in CHNA 9 indicates that there were 13 towns in which the prenatal care was adequate for 80% of births or higher in the 2005 – 2007 time period. The highest percentages of adequate prenatal care were found in New Braintree and Sterling at 85% and Oakham and Princeton at 84% of total births.

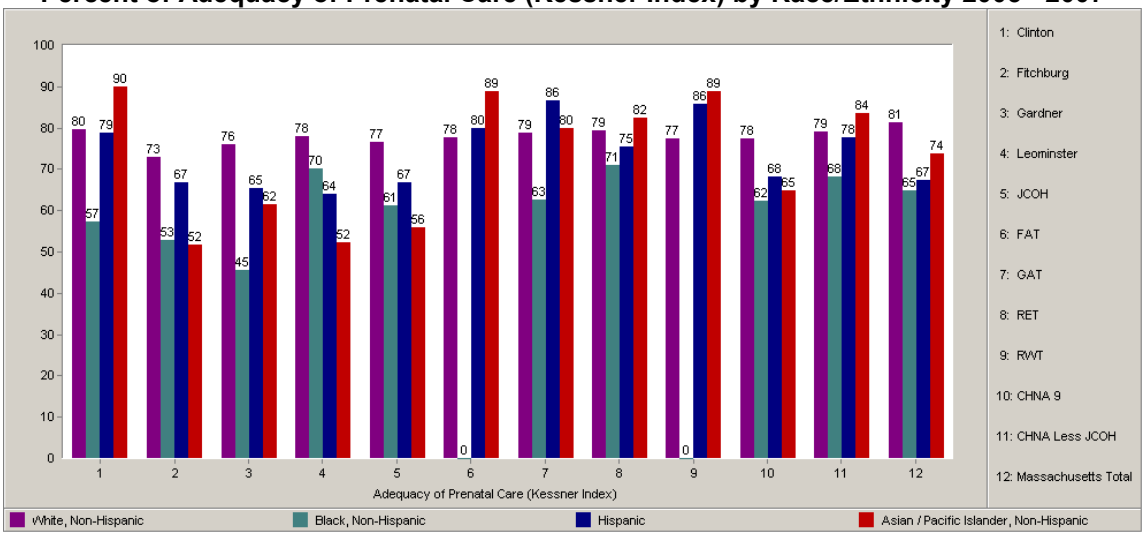
On the other hand, there were 5 cities and towns in which prenatal care was adequate for fewer than 75% of births, with Winchendon at 72% and Ayer at 73% joining Fitchburg, Leominster, and Gardner in this category.

Percent of Adequacy of Prenatal Care (Kessner Index) 2005 – 2007



There is wide variability in the adequacy of prenatal care by race/ethnicity within the Commonwealth. Overall, adequate prenatal care was reported for 81% of the White, non-Hispanic births: 65% of the Black, non-Hispanic births; 67% of the Hispanic births; and 74% of the Asian births in the Commonwealth in 2005 – 2007. Within the reporting regions, the percent of adequate prenatal care for White, non-Hispanic births was consistently lower than the State average, with the lowest rates found in Fitchburg at 73% and Gardner at 76% of births.

Percent of Adequacy of Prenatal Care (Kessner Index) by Race/Ethnicity 2005 - 2007



For Black, non-Hispanic births, there were two areas with higher percentages of adequate prenatal care than the State, with the Rural Eastern towns at 71% and Leominster at 70% of births. However, 3 areas reported that less than 60% of Black, non-Hispanic births had adequate prenatal care, with Gardner at 45% (the lowest percentage within the reporting regions for any racial/ethnic group), Fitchburg at 53% and Clinton at 57% of births.

There were 3 reporting regions in which adequate prenatal care was reported for more than 80% of births to Hispanic women in the 2005 – 2007 time period, well above the State average. The Gardner Area Towns and the Rural Eastern Towns both reported adequate prenatal care for 86% of Hispanic births, while the Fitchburg Area Towns reported adequate prenatal care for 80% of Hispanic births. In these 3 reporting regions, the adequacy of prenatal care for Hispanics was higher than that of White, Non-Hispanics and Black, non-Hispanics. Leominster at 64% and Gardner at 65% had the lowest percentages of adequate prenatal care for Hispanic births.

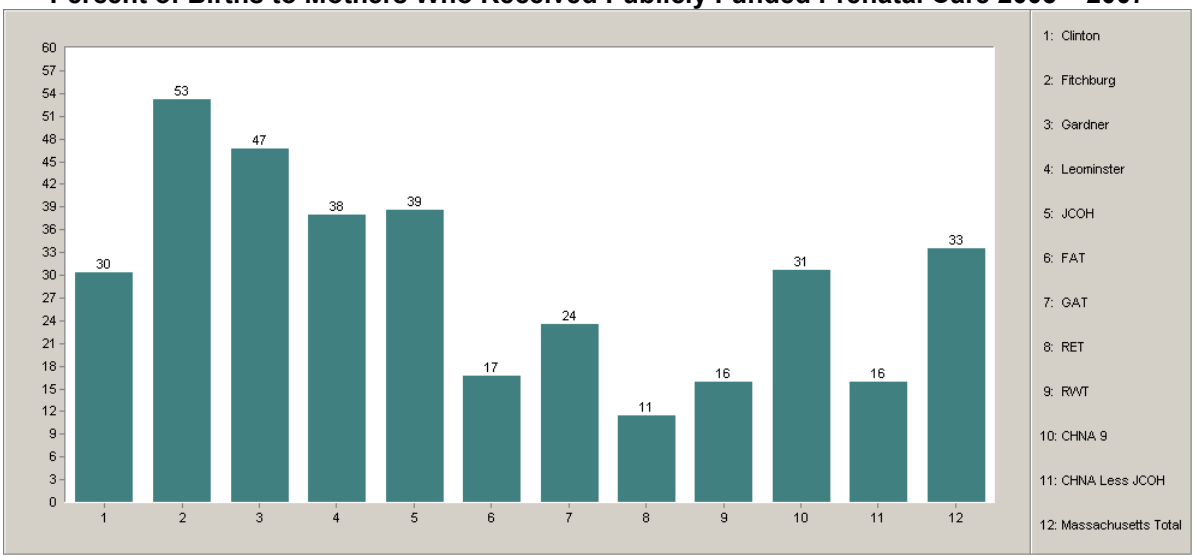
The adequate prenatal care figures for Asian births were the most variable in the region. The highest figures for adequate prenatal care for any racial and ethnic group in the reporting regions were for Asian births, with Clinton at 90% and the Fitchburg Area Towns and the Rural Western Towns at 89% of Asian births associated with adequate prenatal care. However, Fitchburg and Leominster both reported adequate prenatal care for only 52% of births to Asian women.

When the JCOH is compared to the CHNA Less JCOH, it is clear that the JCOH service area has lower percentages for adequate prenatal care for all racial and ethnic groups.

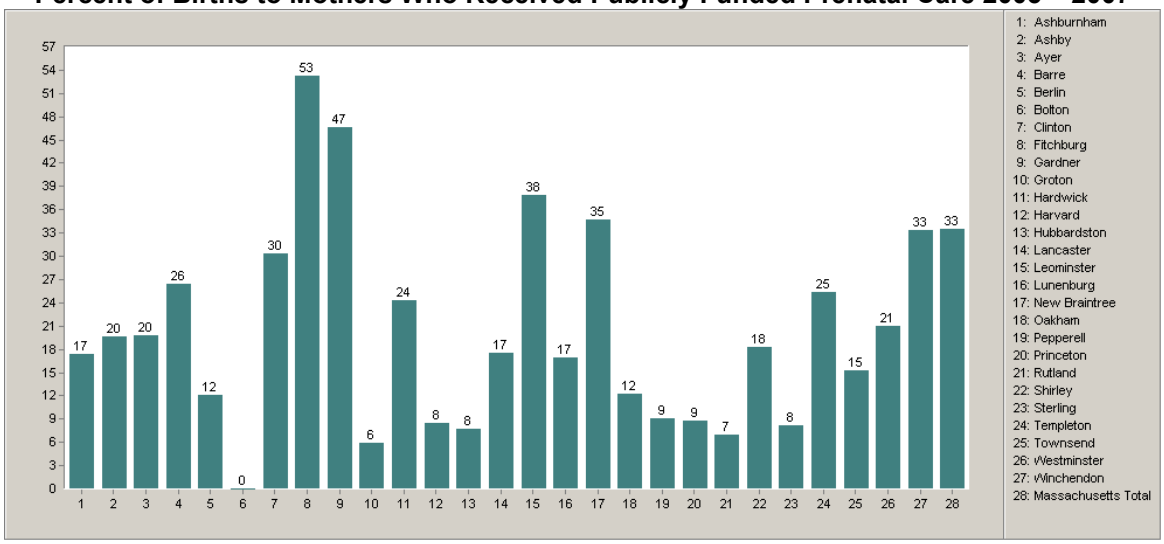
Prenatal Care Funding

Within Massachusetts, 33% of the births in the 2005 – 2007 timeframe were to mothers who received publicly- funded prenatal care. Within the reporting regions, the 3 cities had rates higher than the State, with 53% of Fitchburg births, 47% of Gardner births and 38% of Leominster births to mothers who received publicly-funded prenatal care. The lowest percentages of births to mothers who received publicly-funded prenatal care were found in the Rural Eastern Towns at 11% and the Rural Western Towns at 16%. Births in the JCOH service area were 2.4 times more likely to be to mothers who received publicly-funded prenatal care (39%) as were births in the CHNA Less JCOH region (16%).

Percent of Births to Mothers Who Received Publicly Funded Prenatal Care 2005 – 2007



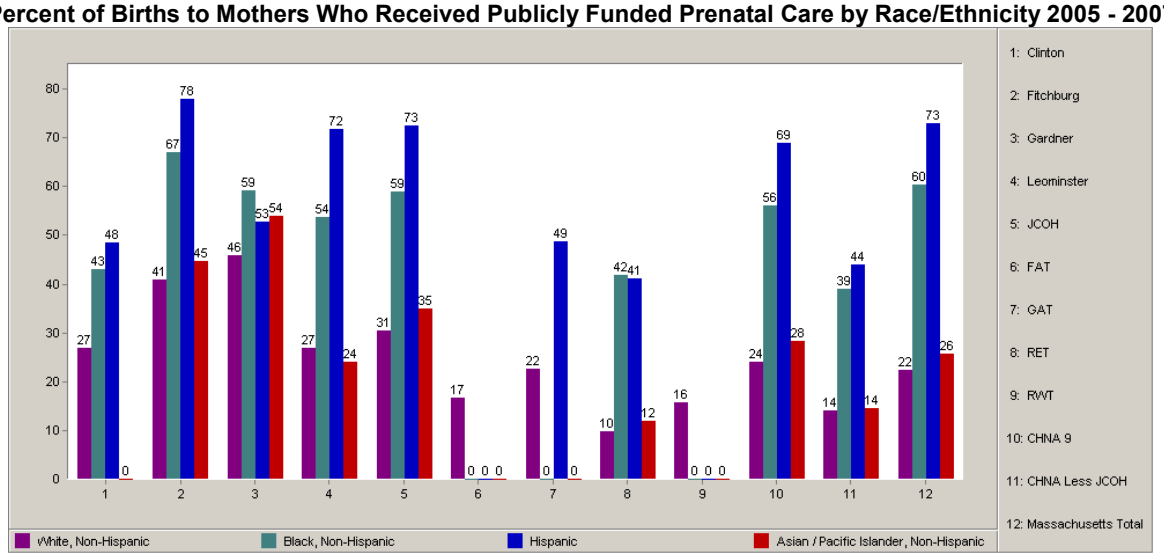
Percent of Births to Mothers Who Received Publicly Funded Prenatal Care 2005 – 2007



There is wide variability among the individual cities and towns relative to the percent of births to mothers who received publicly-funded prenatal care in 2005 –2007. The 3 cities had the highest percentages, followed by New Braintree at 35% and Winchendon at 33%. The remaining 22 towns had rates lower than the State average, with the lowest reported rates found in Groton at 6% and Rutland at 7%.

Within Massachusetts, the percentages of births to mothers who received publicly-funded prenatal care varied by racial/ethnic group. Mothers receiving publicly-funded prenatal care accounted for 22% of births to White, non-Hispanic mothers, 60% of births to Black, non-Hispanic mothers, 73% of births to Hispanic mothers, and 26% of births to Asian mothers. Four of the reporting regions had higher percentages of births to White, non-Hispanic mothers who received publicly-funded prenatal care than the State, including Gardner with 46%, Fitchburg with 41% and Leominster and Clinton with 27% of births to White, non-Hispanic mothers who had received publicly-funded prenatal care. The lowest percentage of births to White, non-Hispanic mothers who received publicly-funded prenatal care was found in the Rural Eastern Towns at 10%, and the Rural Western Towns at 16%.

Percent of Births to Mothers Who Received Publicly Funded Prenatal Care by Race/Ethnicity 2005 - 2007



Fitchburg, with 67% of its Black, non-Hispanic births to mothers who received publicly-funded prenatal care was the only reporting region with a rate higher than the State for this group of mothers. The lowest percentages of Black, non-Hispanic births to mothers who received publicly-funded prenatal care was in the Rural Eastern Towns at 42% and Clinton at 43% of births.

Overall the racial/ethnic group with the highest percent of births to mothers who received publicly-funded prenatal care was Hispanic mothers. Within the Commonwealth, 73% of all births to Hispanic mothers in the 2005 – 2007 time period were to women who had received publicly-funded prenatal care. Within the reporting regions, Fitchburg had 78% of its births to Hispanic mothers and Leominster had 72% of its births to Hispanic mothers to women who received publicly-funded prenatal care. The lowest percentage of Hispanic mothers who received publicly-funded prenatal care was found in the Rural Eastern Towns representing 41% of these births.

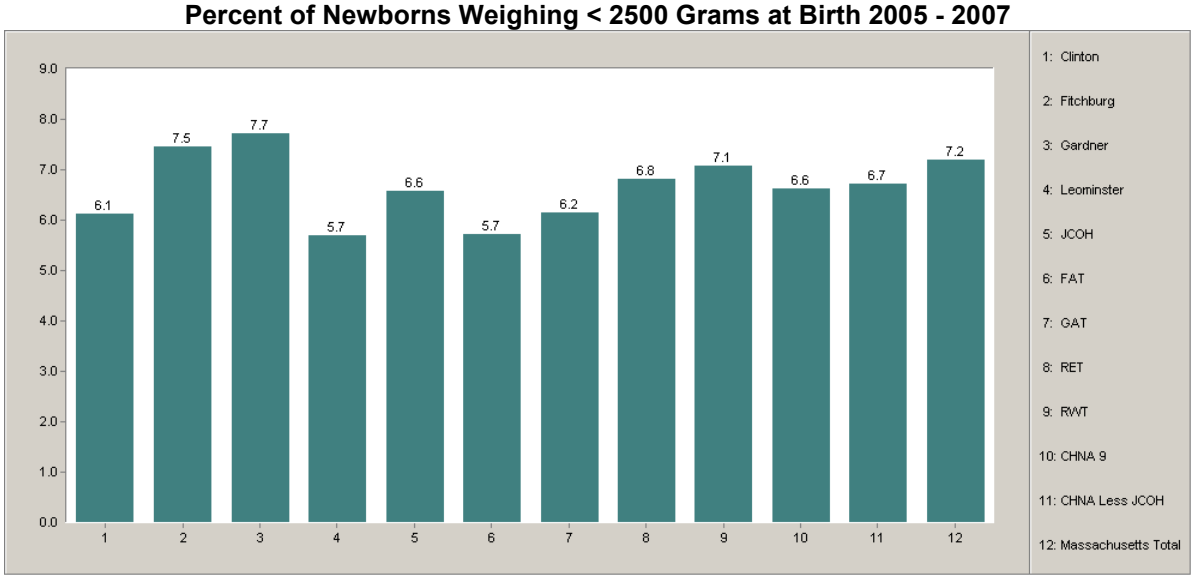
Gardner, Fitchburg and Leominster with 54%, 45%, and 35% of its Asian births, respectively, to mothers who received publicly-funded prenatal care all reported rates higher than the State. The lowest percentage of Asian births to mothers who received publicly-funded prenatal care was in the Rural Eastern Towns at 12%.

Again the JCOH service area had higher rates of births to mothers who received publicly-funded prenatal care for the main racial and ethnic groups than the CHNA Less JCOH.
The JCOH rates and CHNA Less JCOH rates for White, non-Hispanic, Black, non-Hispanic, Hispanic, and Asian mothers for the 2005 – 2007 time period were 31% versus14%, 59% versus 39%, 73% versus 44% and 35 versus 14%, respectively.

Low Birth Weight

Newborns weighing less than 2,500 grams (5 pounds, 8 ounces) at birth are classified as low birth weight and are at an increased risk for health problems. Within Massachusetts, during the 2005 – 2007 time period, 16,732 newborns were categorized as low birth weight, representing 7.2% of births. Within CHNA 9 reporting regions, only Gardner at 7.7% and Fitchburg at 7.5% reported higher percentages of low birth weight infants than the State. Leominster and the Fitchburg Area Towns reported the lowest percentage of low birth weight infants at 5.7% of births.

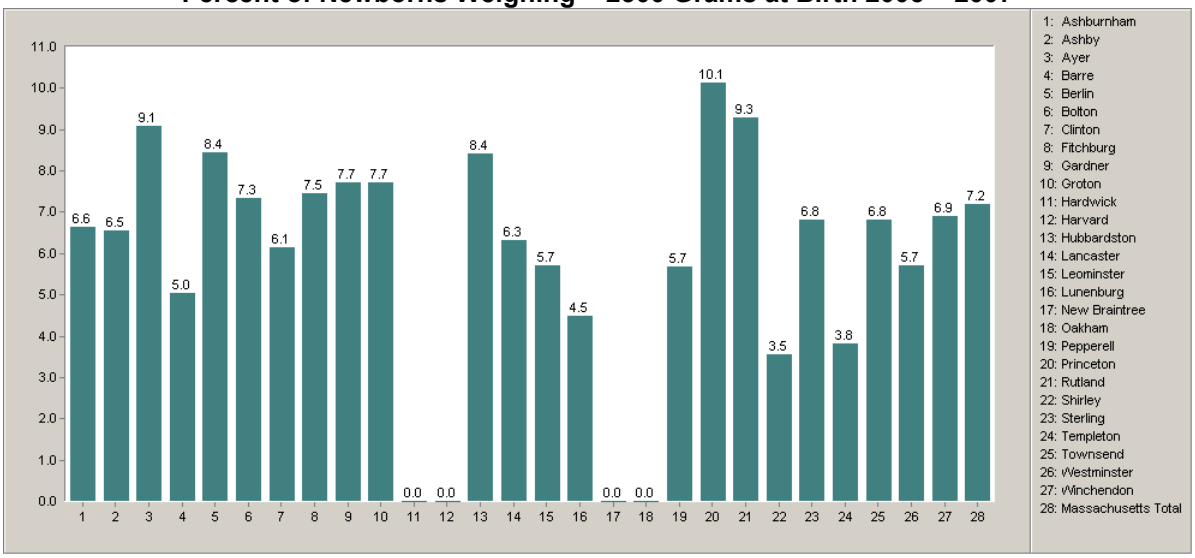
Percent of Newborns Weighing < 2500 Grams at Birth 2005 - 2007



Healthy People 2010 Goal: 5% of Newborns

There were several individual cities/towns with low birth weight rates higher than the State. With 10.1% of its births being of low birth weight, Princeton reported the highest percentage, followed by Rutland with 9.3% and Ayer with 9.1% of births categorized as low birth weight. The towns with the lowest percentage of low birth weight births were Shirley at 3.5% and Templeton at 3.8%.

Percent of Newborns Weighing < 2500 Grams at Birth 2005 – 2007

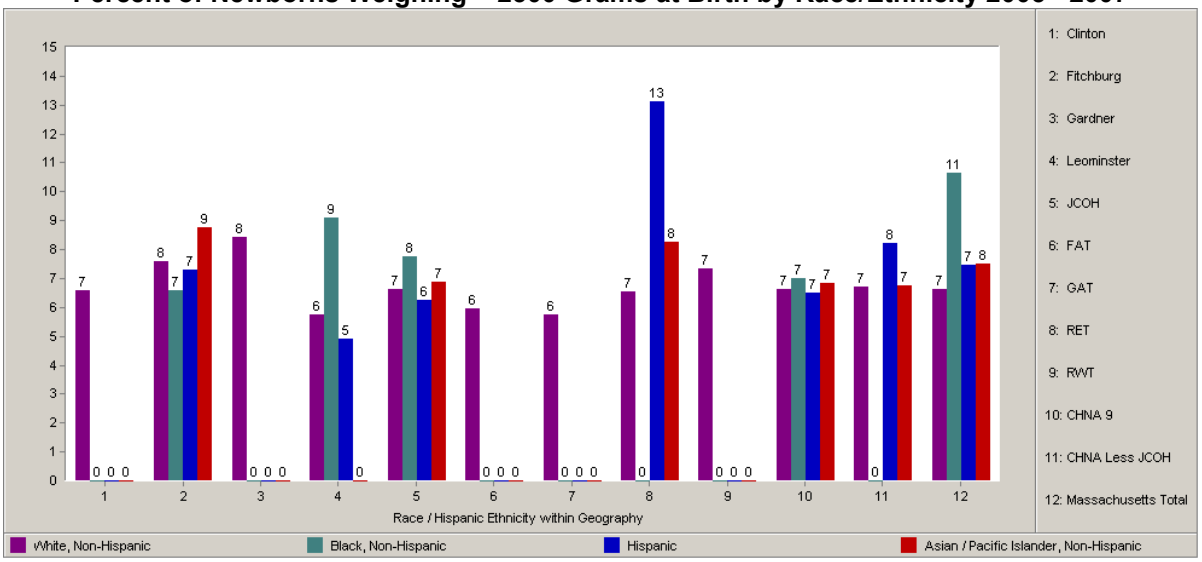


Healthy People 2010 Goal: 5% of Newborns

Within the Commonwealth, the lowest percent of low birth weight births were reported among White, non-Hispanics and Hispanics at 7%, followed by Asians at 8%. Black, non-Hispanics had the highest percent of low birth weight births at 11%.

Within the reporting regions, the highest percent of low birth weight births was reported among Hispanic residents in the Rural Eastern Towns at 13%, followed by Asian residents of Fitchburg and Black residents of Leominster, both with 9%.

Percent of Newborns Weighing < 2500 Grams at Birth by Race/Ethnicity 2005 - 2007



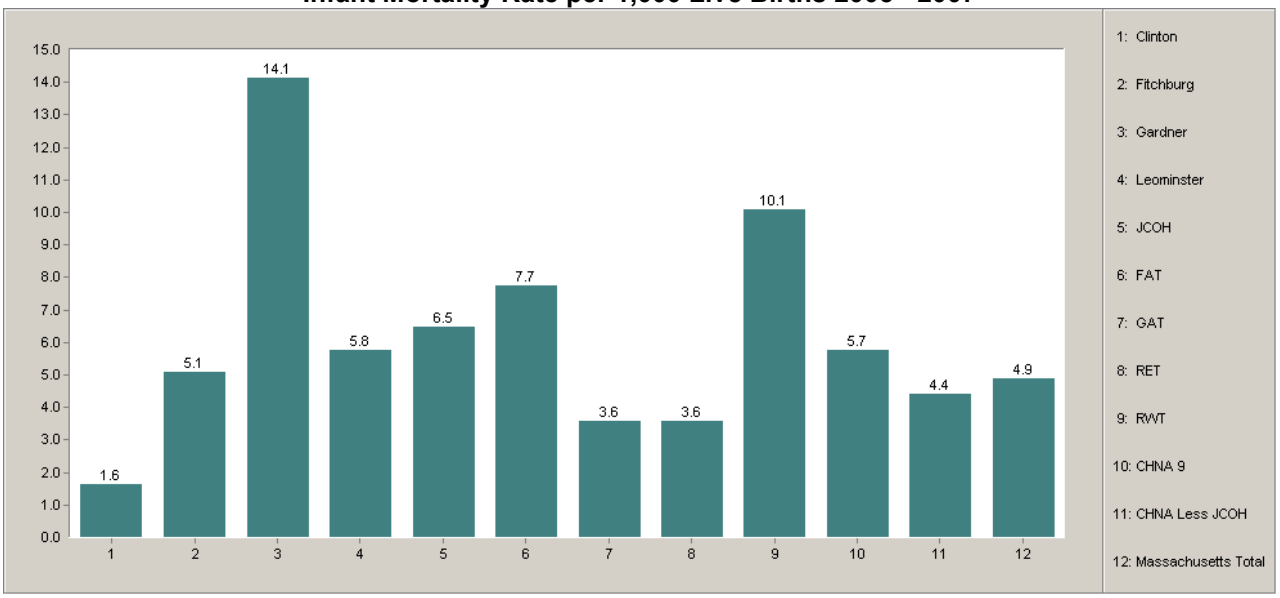
Healthy People 2010 Goal: 5% of Newborns

Infant Mortality Rate

The Infant Mortality Rate (IMR) is defined as the number of deaths of infants (less than one year of age) per 1000 live births. In Massachusetts in the 2005 – 2007 time period, the Infant Mortality Rate was 4.9. Within the reporting regions, Gardner had the highest IMR at 14.1 (2.9 times the State rate), followed by the Rural Western Towns at 10.1, and the Fitchburg Area Towns at 7.7.

The lowest Infant Mortality Rates in the region were found in Clinton, with an IMR of 1.6 or about a third of the Commonwealth's IMR, and the Gardner Area Towns and the Rural Eastern Towns, both with an IMR of 3.6. The JCOH service area had a considerably higher IMR at 6.5 than did the CHNA Less JCOH at 4.4. IMR cannot be reported at the city/town level due to the small number of cases.

Infant Mortality Rate per 1,000 Live Births 2005 - 2007



Healthy People 2010 Goal: 4.5 per 1,000 Infants

Because of the small numbers involved, it is not possible to provide an analysis of the Infant Mortality Rate by race/ethnicity. Overall, within the Commonwealth, Black, non-Hispanics have the highest Infant Mortality Rate at 10.3 followed by Hispanics at 7.0, White, non-Hispanics at 4.1, and Asians at 2.8.

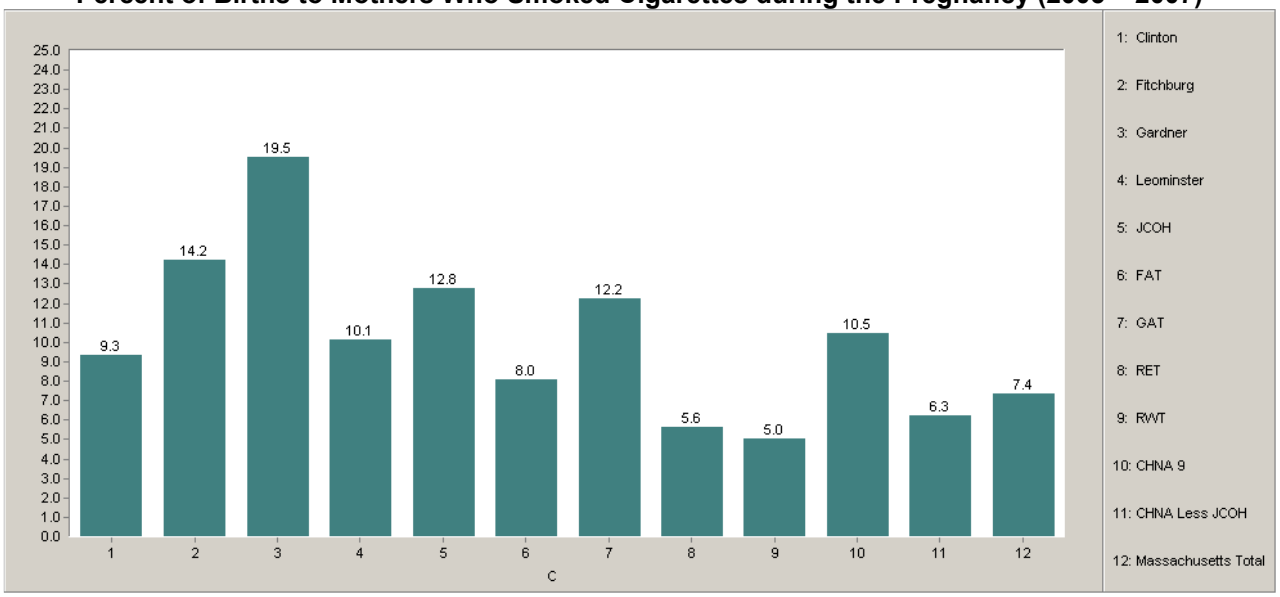
Cigarette Smoking During Pregnancy

Within Massachusetts, 7.4% of births in the 2005 – 2007 period were to women who smoked during pregnancy. Within CHNA 9, all of the reporting regions, except the Rural Eastern and Rural Western Towns, reported higher percentages of births to mothers who smoked cigarettes than the State. In Gardner 19.5% of births were to mothers who smoked during pregnancy, a rate 2.6 times that of the State.

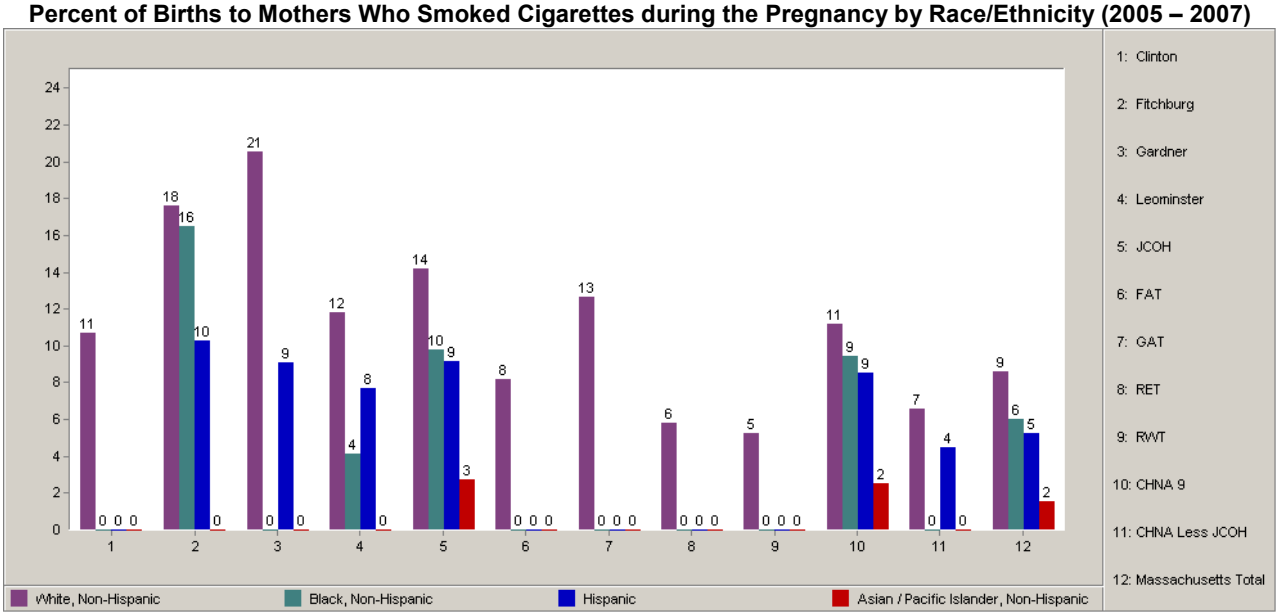
A review of births to women who smoked during pregnancy by racial/ethnic group shows that for the State, the largest percentage was found among White, non-Hispanics at 9%, followed by Black, non-Hispanics at 6%, Hispanics at 5%, and Asians at 2% of births. Throughout the reporting regions, the highest percentages of births to women who smoked during pregnancy were

consistently found among White, Non-Hispanics, with Gardner, Fitchburg, and Leominster reporting cigarette smoking during pregnancy for 21%, 18% and 12% of White, non-Hispanic births, respectively. In addition, the JCOH service area reports a higher percentage of births to mothers who smoked during pregnancy than the CHNA Less JCOH area for all racial/ethnic groups.

Percent of Births to Mothers Who Smoked Cigarettes during the Pregnancy (2005 – 2007)

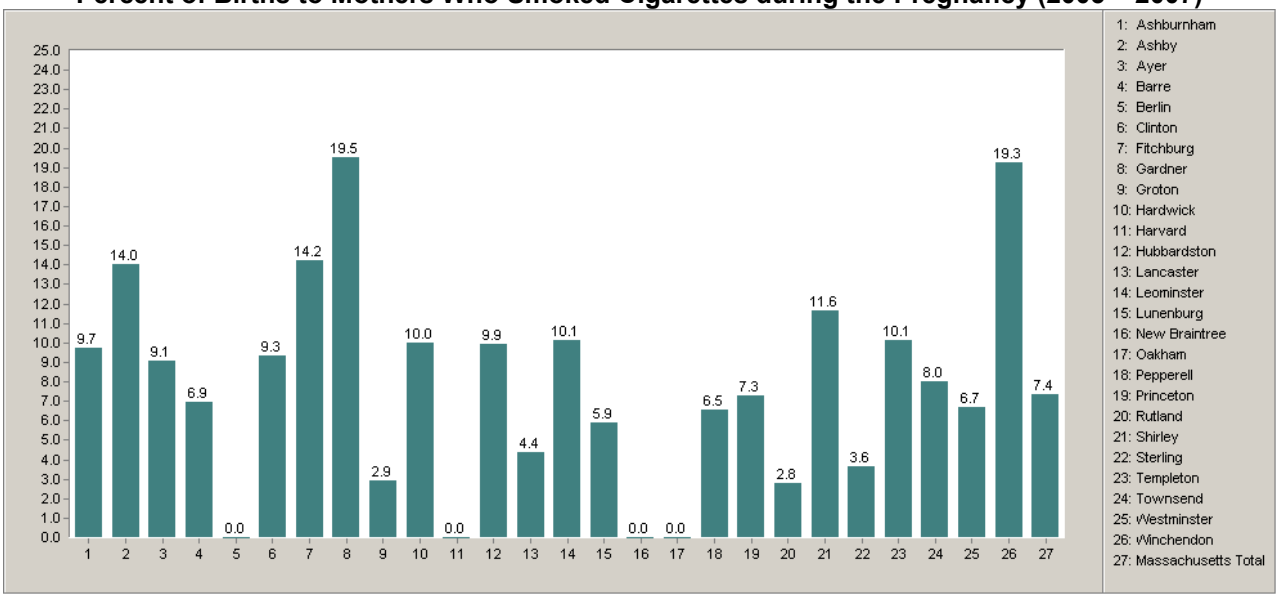


Percent of Births to Mothers Who Smoked Cigarettes during the Pregnancy by Race/Ethnicity (2005 – 2007)



Among the individual cities/towns, Winchendon and Ayer also reported high percentages of births to women who smoked during pregnancy at 19.3% and 14%, respectively.

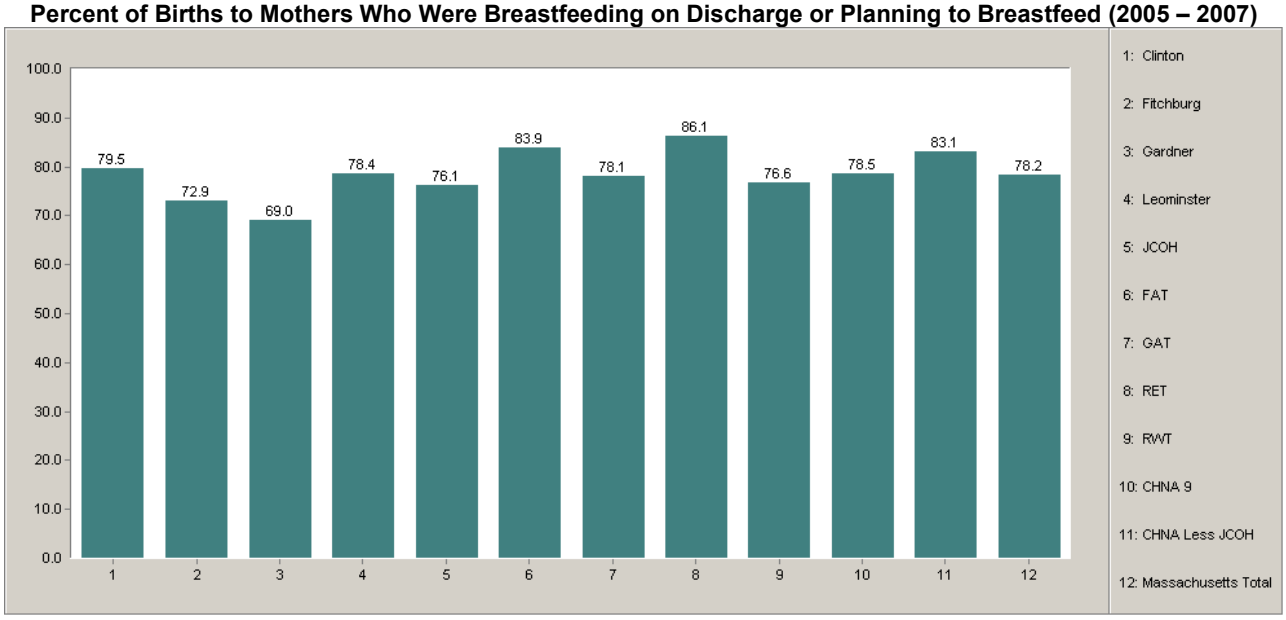
Percent of Births to Mothers Who Smoked Cigarettes during the Pregnancy (2005 – 2007)



Breastfeeding

During the 2005 – 2007 time period, mothers were either breastfeeding at discharge or planning to breastfeed for 78.2% of the births in Massachusetts. Within the reporting regions, the Rural Eastern Towns at 86.1% and the Fitchburg Area towns at 83.9% reported high percentages of births for which mothers were breastfeeding or planning to breastfeed. Gardner reported the lowest percentage, with mothers breastfeeding or planning to breastfeed for only 69% of births.

Percent of Births to Mothers Who Were Breastfeeding on Discharge or Planning to Breastfeed (2005 – 2007)

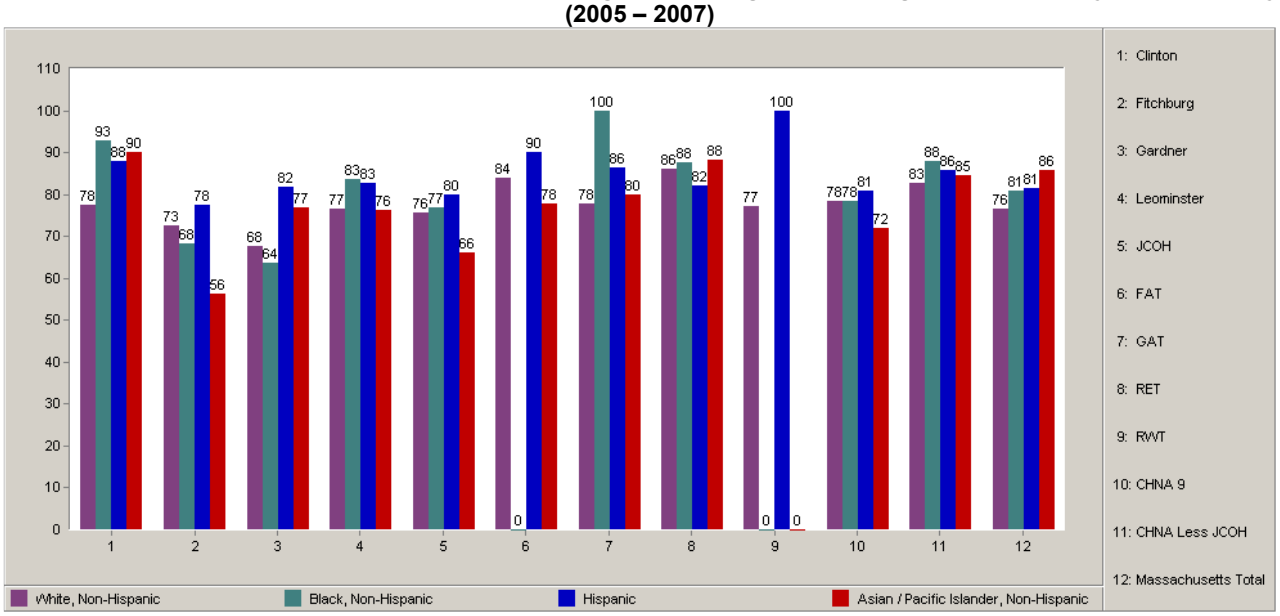


Healthy People 2010 Goal: 75% of mothers prior to discharge

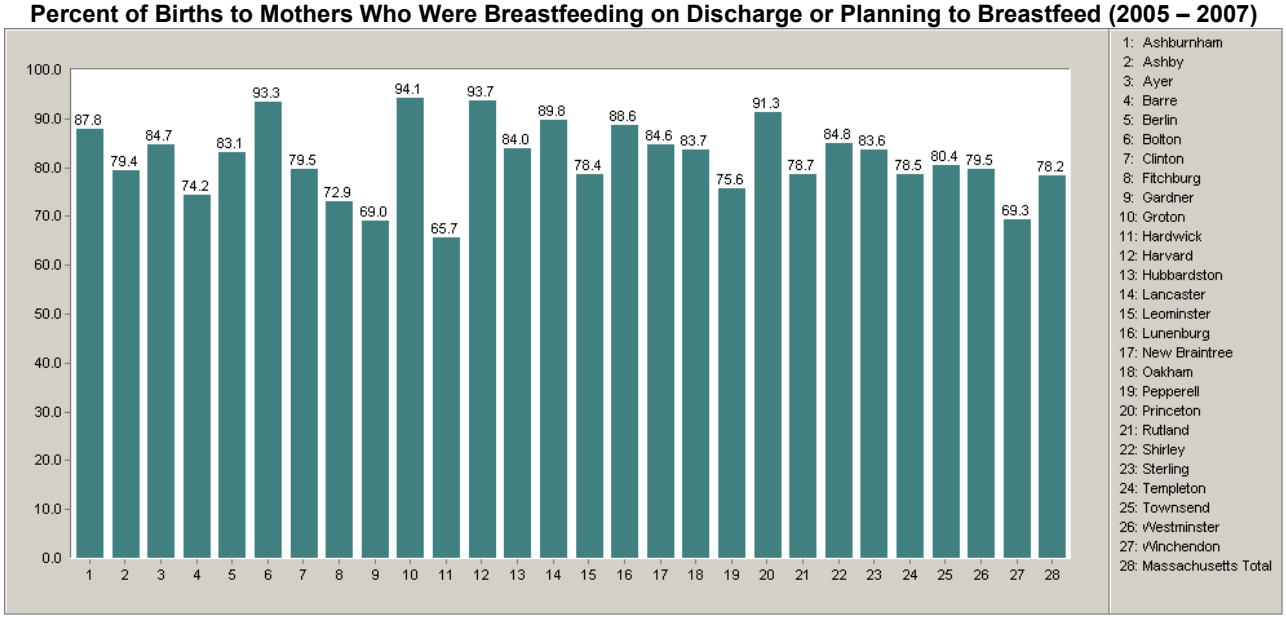
Within the Commonwealth, the highest percentage of births to mothers who were breastfeeding at discharge or planning to breastfeed was found among Asians at 86%, followed by Hispanics and

Black, non-Hispanics at 81% and White, non-Hispanics at 76%. The breastfeeding percentages were quite varied among the racial/ethnic groups in the different regions, with the highest percentage of births to women who were breastfeeding on discharge or planning to breastfeed reported among Black, non-Hispanics in the Gardner Area Towns and Hispanics in the Rural Western Towns, both at 100%, followed by Blacks in Clinton at 93%. The lowest percentage was found among Asians in Fitchburg with mothers breastfeeding on discharge, or planning to breastfeed, for only 56% of births.

Percent of Births to Mothers Who Were Breastfeeding on Discharge or Planning to Breastfeed by Race/Ethnicity (2005 – 2007)



Percent of Births to Mothers Who Were Breastfeeding on Discharge or Planning to Breastfeed (2005 – 2007)

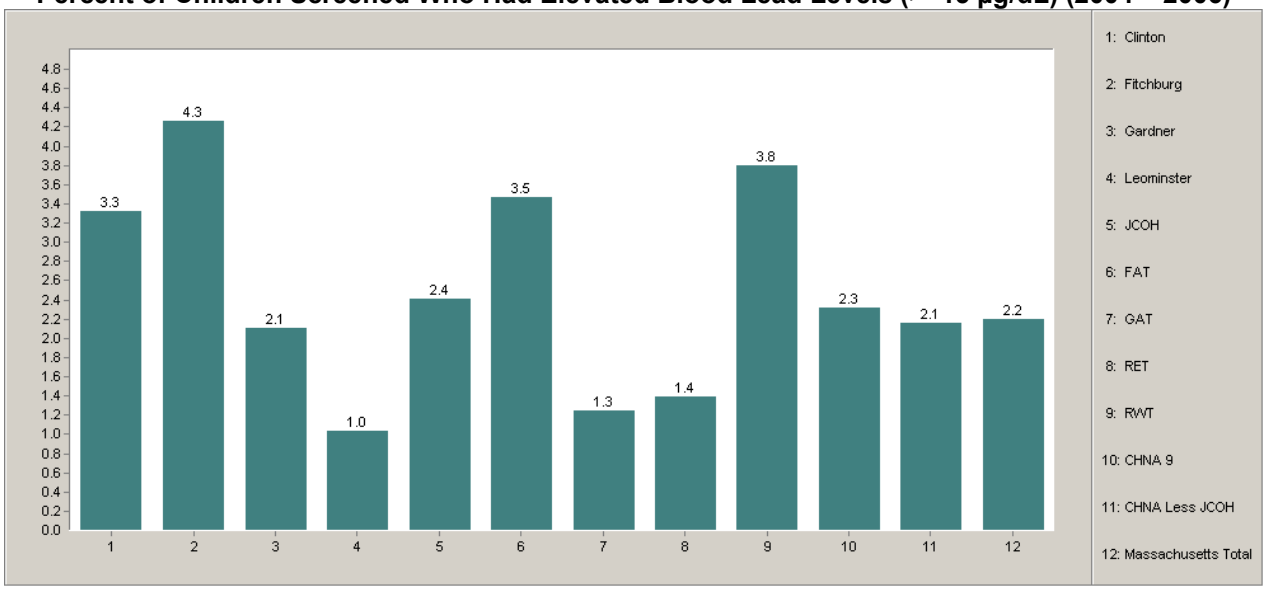


Within the individual cities/towns in CHNA 9, the highest percent of births to women who were breastfeeding on discharge or planning to breastfeed were reported in Groton at 94.1%, Harvard at

93.7% and Bolton at 93.3%. The lowest breastfeeding percentages were found in Hardwick at 65.7%, Gardner 69%, and Winchendon at 69.3% of births.

Lead Poisoning

Percent of Children Screened Who Had Elevated Blood Lead Levels (>=15 µg/dL) (2004 – 2006)



Within Massachusetts in the 2004 – 2006 time period, 2.2% of the children screened for lead paint had elevated blood lead levels (defined as >=15 µg/dL). Within the reporting regions, Fitchburg had the highest percentage of children with elevated blood lead levels at 4.3%, followed by the Rural Western Towns at 3.8% and the Fitchburg Area Towns at 3.5% of children screened. The lowest percentages of children with elevated blood lead levels were found in Leominster at 1%, the Gardner Area Towns at 1.3%, and the Rural Eastern Towns at 1.4% of children who were screened. However, other than Fitchburg, these observations are based on small actual numbers and should be considered with caution.

In the qualitative data, the concern regarding elevated lead levels was expressed, particularly in the Asian communities.

> *"You don't know if you have lead in your house until it is in your child's blood test. …the landlord says he can't afford to do anything." (Hmong)*
>
> *"You don't know if you have lead paint. These houses [with lead paint] are cheaper and may be the only option." (Lao)*
>
> *"We are buying a house, but it has lead paint. We applied for lead paint removal but it is just another loan…The court could order lead paint removal even if we are unable to pay. It [the city] should provide free a program to get the lead out." (Hmong)*

In addition, the concern about workplace toxins arose in the Asian focus groups and interviews. Participants identified both agricultural and urban workplace toxins.

"Jobs and the work place contribute to sickness and disease. A lot of people end up in farm work. They have no skills and they work in the factories here. They don't understand that the chemicals they work with can kill you. In my country they were never exposed to chemicals. They only understand if a chemical affects you immediately. They don't understand that a chemical can affect you over a period of time. They are not afraid of these dangerous chemicals because they don't understand them." (Hmong)

"There are some factories around our areas. Working in a factory is one thing but catching the second hand smoke with all the chemicals is another. Some people don't realize how harmful the air is to us. I have worked in a factory for half of my life; I stopped working once my children got older and were harder to be taken care of. Even working there for those period of years have affected me in many ways." (Lao)

Oral Health

In the last *Community Health Assessment of North Central Massachusetts* (printed in 2003), concern regarding the oral health and availability of dental services was expressed frequently throughout the qualitative data. Conversely, in this current study, concerns about oral health and the availability of dental services was noticeably absent in the data. Of the 160 persons in the pool of qualitative data, only 4 individuals mentioned oral health or the access to services as a major health concern. The authors of this report assert that the reason oral health ranked so much lower in people's consciousness and concerns than it has in past health assessments is because the oral health environment in North Central Massachusetts has improved dramatically since the last health assessment. In 2002, the Joint Coalition on Health received a multi-year grant (The Oral Health Initiative) from The Health Foundation of Central Massachusetts to address access to oral health services for the underserved. Numerous strategies were implemented and sustained through the Oral Health Initiative and include the following:

Community Health Connections Family Health Center (CHC) Dental Services

Perhaps the single most important systemic change is that Community Health Connections (CHC) Family Health Center in Fitchburg opened a nine-chair dental service in 2003. The dental services provided include preventive and restorative care as well as oral surgery. Dental services expanded in 2005 with the opening of the Community Health Connections Greater Gardner Community Health Center's six chair Dental Service, followed by the Community Health Connections' Leominster Community Health Center's two chair dental service (which is now a six chair service). ***In 2010 alone, the dental division of Community Health Connections Family Health Centers provided care for 12,718 patients with 41,001 visits.***

GHAP Dental Program

GHAP dentists provided 1,200 patient visits (from July, 2002-June, 2008) in a case-managed program that evolved into and supported an increase in the number of dentists accepting MassHealth.

School-based Dental Sealant Program

The school-based dental sealant program now called "Caring for Kids" provides dental screenings, cleanings, fluoride varnish treatments and dental sealants to students in grades K-12 who have difficulty accessing dental care in a traditional setting. In 2002, the "Caring for Kids" school-based dental program provided services to 2nd grade students from three communities. Today the program provides access to oral health services in 55 schools located in North Central Massachusetts, to students in grades K–12. ***The program has placed over 10,000 sealants since inception and provided care to more than 1,800 students in 2010 alone.***

Legislative Advocacy

Working collectively with the Central Massachusetts Oral Health Initiative and the statewide Oral Health Task Force, among others, the group successfully advocated for changes to the MassHealth Dental program including the launch of a Third Party Administrator (TPA), the ability for dentists to limit their caseloads, an increase in reimbursement rates and the restoration of adult dental benefits. Unfortunately, adult benefits have since been eliminated once again in response to budget deficits. ***As a result of these changes, a total of 47 area dentists were accepting MassHealth by the end of 2008, compared to none who were publicly accepting it in 2002.***

A large degree of the credit for this also goes to dentists in the Wachusett District Dental Society who partnered with the Oral Health Initiative to improve access through GHAP and MassHealth. In addition, the group submitted a successful application for Health Professional Shortage Area (HPSA) designation for Dentists for the region. This provided access to incentives to help the CHC recruit dentists.

Dental Hygiene Training Program

Additionally, Mount Wachusett Community College established a Dental Hygiene Program which works collaboratively with the Community Health Connections Fitchburg Community Health Center Dental Service. ***The Mount Wachusett Community College Dental Hygiene program has provided exceptional preventive services for over 800 patients.*** The program has also increased the supply of dental hygienists working in North Central Massachusetts.

Oral Health Education

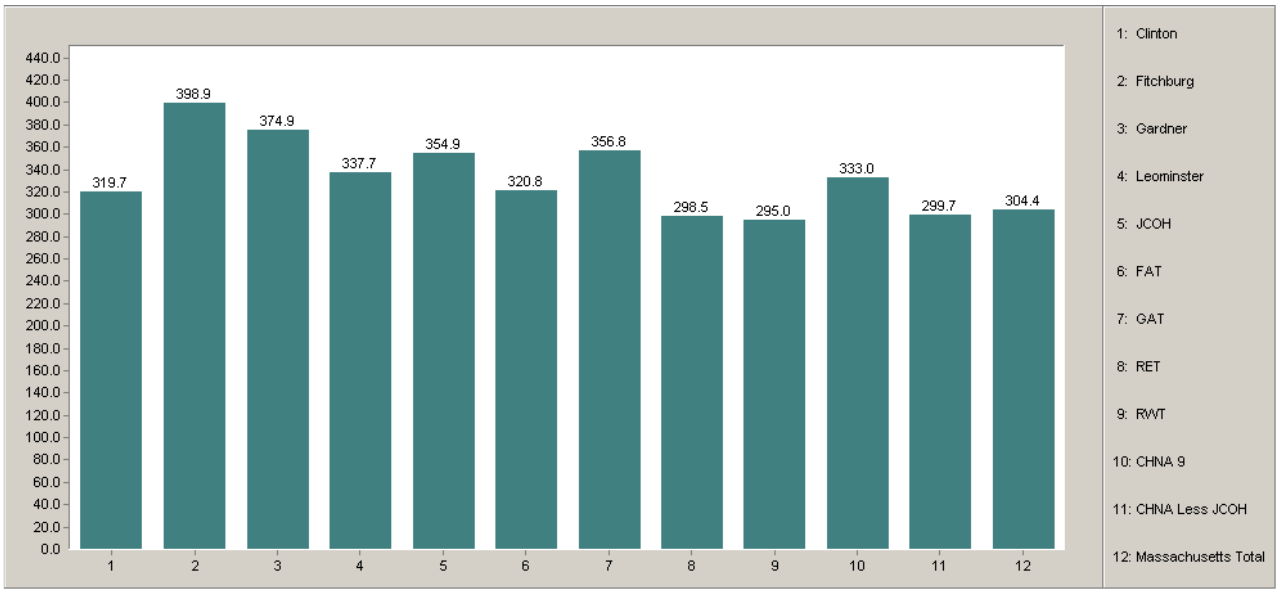
The Oral Health Initiative also trained more than 50 physicians on conducting oral health exams during primary care visits, established an oral health care curriculum in Lamaze classes at two area hospitals, and conducted workshops to help children as young as age 5 understand the need for taking good care of their teeth and gums.

MORTALITY

Premature Mortality

Premature mortality is defined as deaths occurring before the age of 75. The premature mortality rate (PMR) is the number of premature deaths per 100,000 persons. An age-adjusted rate uses a direct age-adjustment approach and is designed to minimize the effects of differences in age distribution when comparing rates for different populations.

Premature Mortality Rate (Premature Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Within Massachusetts, the age-adjusted PMR for the 2005-2007 time frame was 304.4. Several of the reporting regions had age-adjusted Premature Mortality Rates higher than that of the State. The highest PMR was reported in Fitchburg at 398.9, followed by Gardner at 374.9. The only reporting regions with age-adjusted Premature Mortality Rates lower than the State were the Rural Western and Rural Eastern Towns at 295 and 298.5, respectively. The JCOH service area, with an age-adjusted PMR of 354.9, had 1.2 times the age-adjusted premature deaths per 100,000 than the CHNA Less JCOH service area.

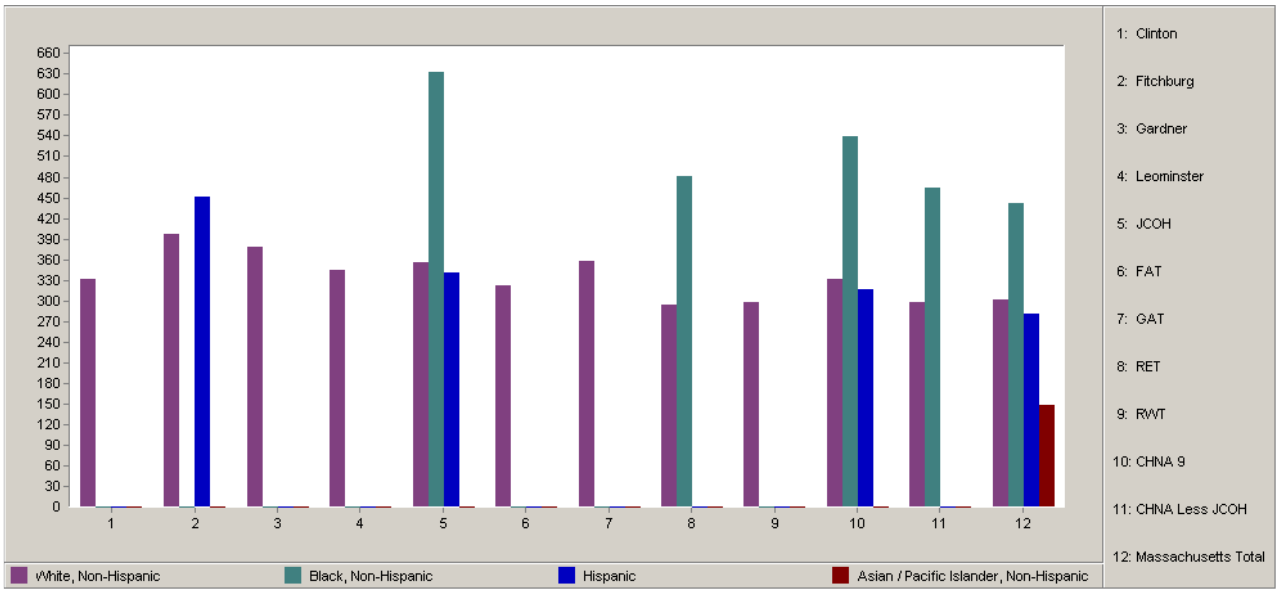
The age-adjusted Premature Mortality Rate in Massachusetts varied by racial/ethnic group over the 2005 – 2007 time period. The highest age-adjusted PMR was reported for Black, non-Hispanics at 441, followed by White, non-Hispanics at 302, Hispanics at 280, and Asians at 48. Within the reporting regions, the highest age-adjusted Premature Mortality Rates were reported for Black, non-Hispanics, with the Rural Eastern Towns reporting a PMR of 481. The JCOH service area, with an age-adjusted PMR of 633 for Black, non-Hispanics had a rate much higher than the CHNA Less JCOH service area's PMR of 464 for Black, non-Hispanics.

High Age-Adjusted Premature Mortality Rates were also reported for Hispanics in Fitchburg at 451, White, non-Hispanics in Fitchburg at 397, and White, non-Hispanics in Gardner at 378. The lowest Age-Adjusted Premature Mortality Rates were reported among White, non-Hispanics in the Rural Eastern and Rural Western Towns at 294 and 297, respectively.

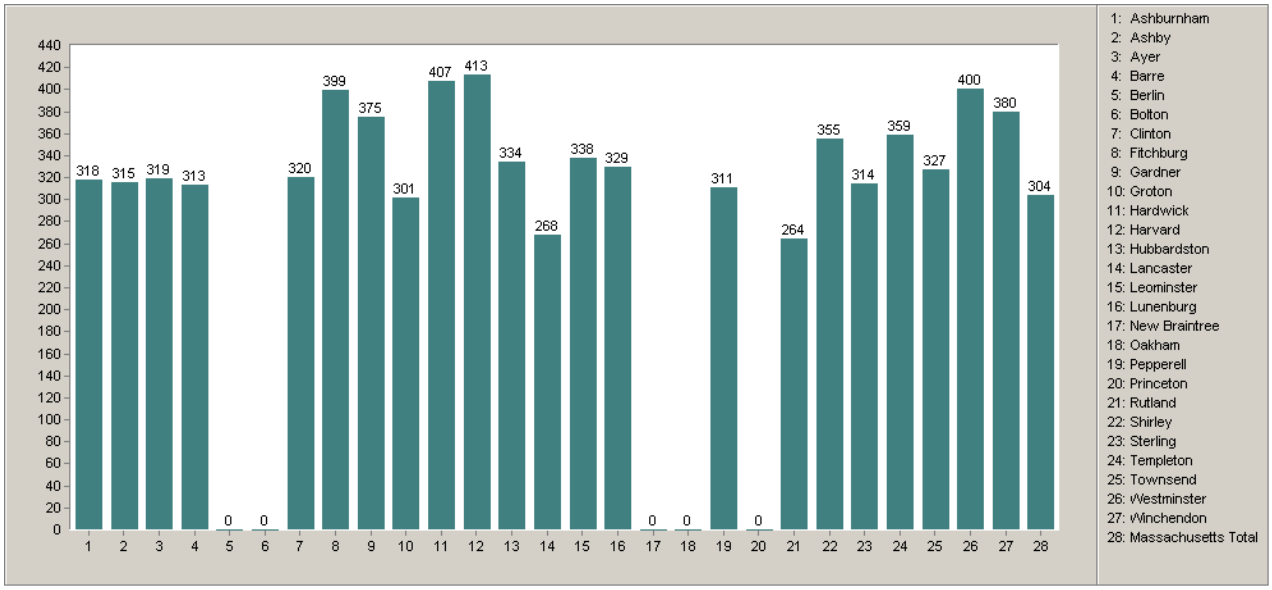
In the qualitative data, the issue of premature mortality arose, including in the youth focus group. Individuals spoke of the severe outcomes that can occur as a result of poor economic conditions, including not being able to access health care due to a lack of insurance, resulting in worsening health status, and, at times, resulting in premature death.

In addition, as discussed in the **Mental Health and Substance Abuse** and **Behavioral Risk Factor Surveillance System (BRFSS)** sections, community members identified premature deaths caused by violence, homicide, and suicide as serious concerns for the health of their communities.

Premature Mortality Rate (Premature Deaths per 100,000 Persons) by Race/Ethnicity 2005 – 2007 (Age-Adjusted)



Premature Mortality Rate (Premature Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



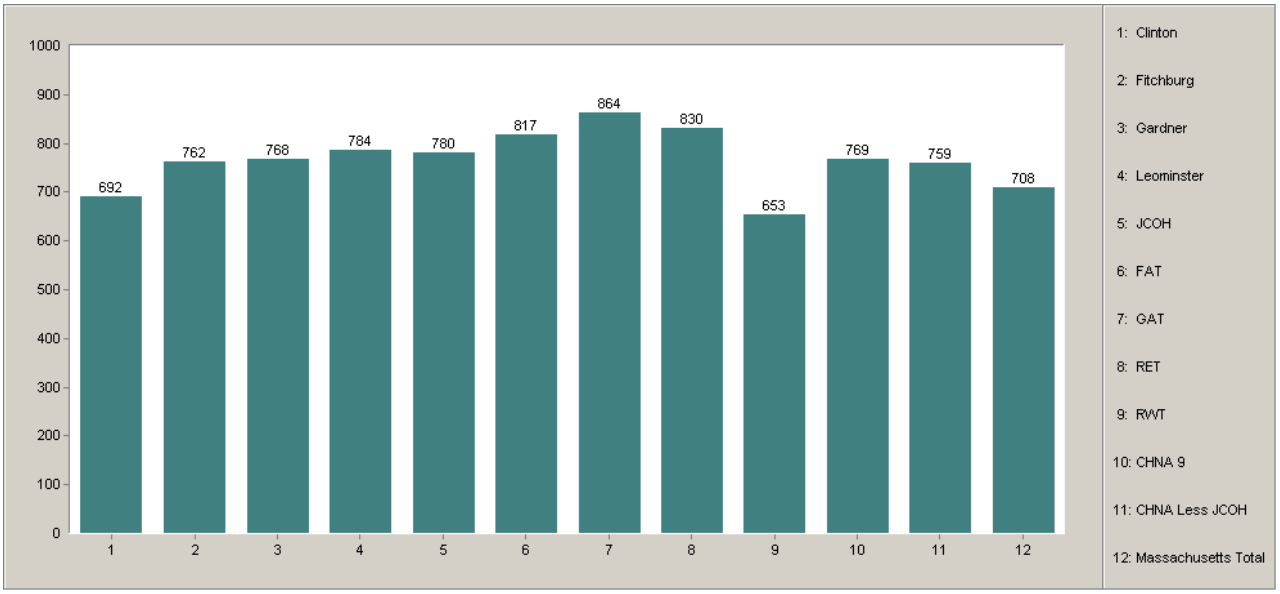
Most of the individual cities/towns in CHNA 9 had age-adjusted Premature Mortality Rates higher than that of the State. The lowest age-adjusted PMRs in CHNA 9 were reported in Rutland (264) and Lancaster (268). The highest age-adjusted PMR in CHNA 9 was reported in Harvard (413), followed by Hardwick (407), Westminster (400) and Fitchburg (399). The numbers are too small to report on PMR by race/ethnicity within the individual cities/towns.

According to the MDPH, Health Information, Statistics, Research and Evaluation Bureau, the PMR is an excellent, single measure of the health status of a community. PMR is related not only to health care, but also to the social determinants of health such as socioeconomic status, housing, educational levels, environmental conditions, and racism, as well as risk factors such as smoking, substance abuse, and obesity.

Mortality Rate

The Mortality Rate is defined as the number of deaths per 100,000 people per year. The Mortality Rates reported here are age-adjusted to enable comparisons among reporting regions.

Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)

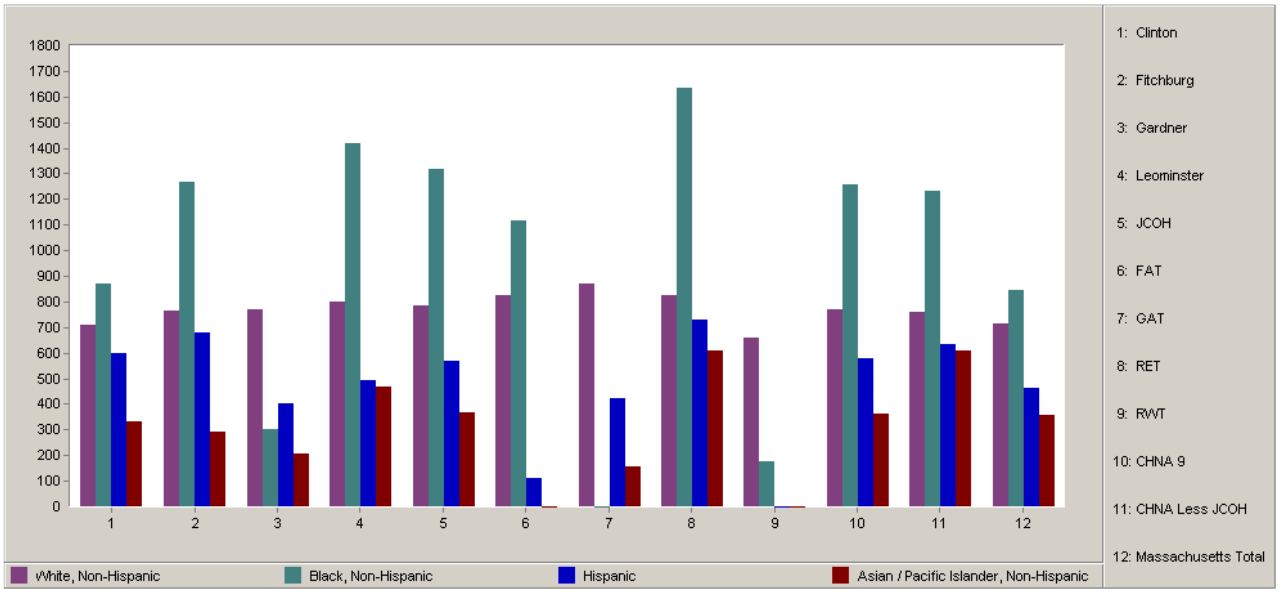


During the 2005 – 2007 time period, the Age-Adjusted Mortality Rate in Massachusetts was 708. Most of the reporting regions in CHNA 9 had Age-Adjusted Mortality Rates higher than the Commonwealth, with the highest rate reported in the Gardner Area Towns at 864, followed by the Rural Eastern Towns at 830 and the Fitchburg Area Towns at 817. The lowest Mortality Rates were reported in the Rural Western Towns (653) and Clinton (692).

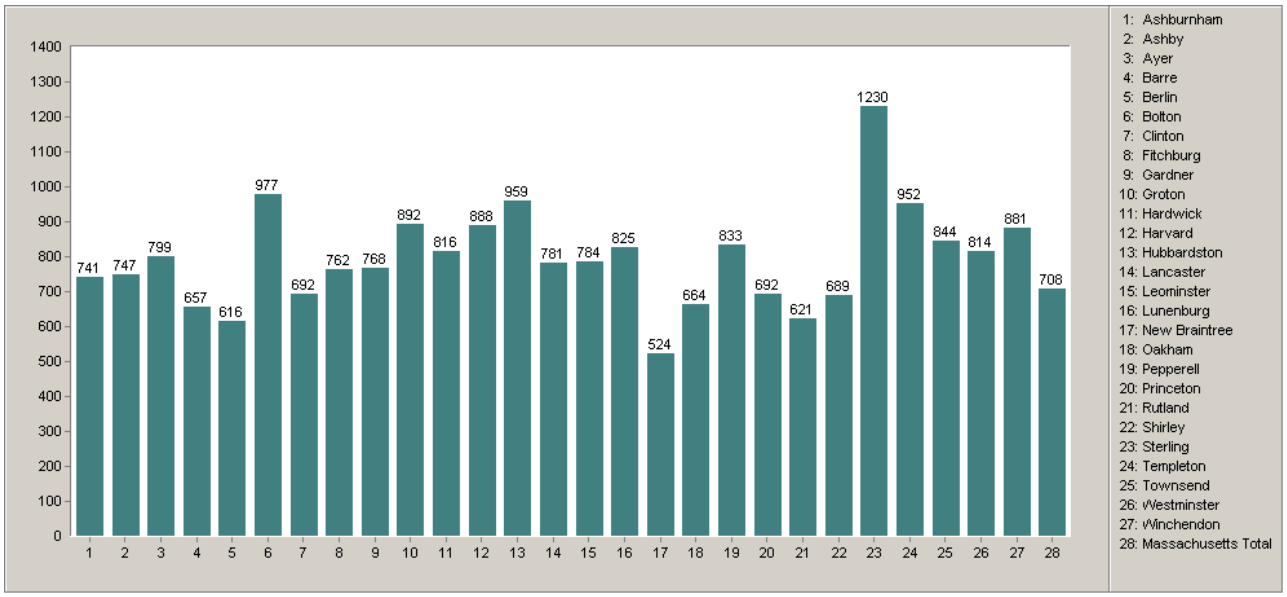
Within the Commonwealth, the age-adjusted Mortality Rate varied by racial/ethnic group, with the highest rates found among Black, non-Hispanics at 843, followed by White, non-Hispanics at 714, Hispanics at 464 and Asians at 359. Black, non-Hispanics also experienced the highest Mortality Rates in most of the reporting regions, with the highest age-adjusted Mortality Rate of 1632 reported for Blacks in the Rural Eastern Towns, followed by Mortality Rates of 1419 and 1266 for Blacks in Leominster and Fitchburg, respectively.

The highest age-adjusted Mortality Rate for White, non-Hispanics was reported in the Gardner Area Towns at 868, while for Hispanics the highest rate was in the Rural Eastern Towns at 728 and the highest Mortality Rate for Asians was 610 in the Rural Eastern Towns.

Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 by Race/Ethnicity (Age-Adjusted)



Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)

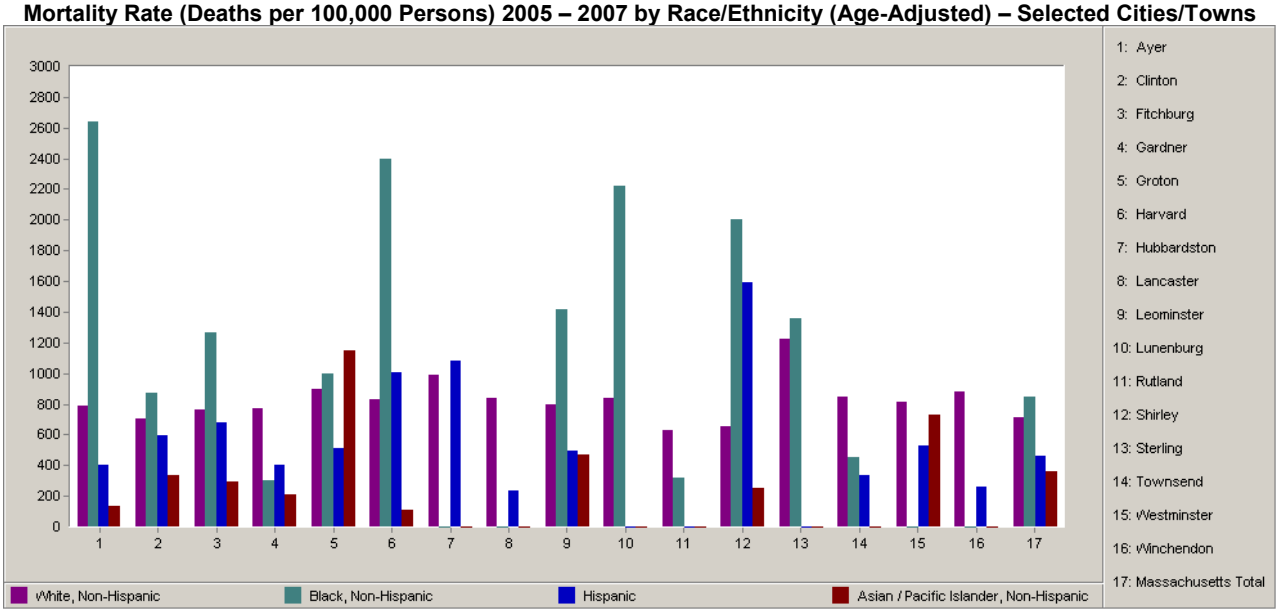


Most of the cities/towns had age-adjusted Mortality Rates greater than the State, with the highest rate of 1230 reported in Sterling. Age-adjusted Mortality Rates above 900 were also reported in Bolton (977), Hubbardston (959) and Templeton (952). The lowest age-adjusted Mortality Rates were found in New Braintree at 524 and Berlin at 616.

Only cities/towns with sufficient data to calculate age-adjusted Mortality Rates by race/ethnicity are included in the graph below. Three communities reported rates above 2,000 for Blacks, with Ayer

at 2,641, Harvard at 2,396 and Shirley at 2,001. The high rates for Blacks in Lunenburg and Sterling, Hispanics in Shirley and Asians in Groton are suspect due to a small number of actual cases.

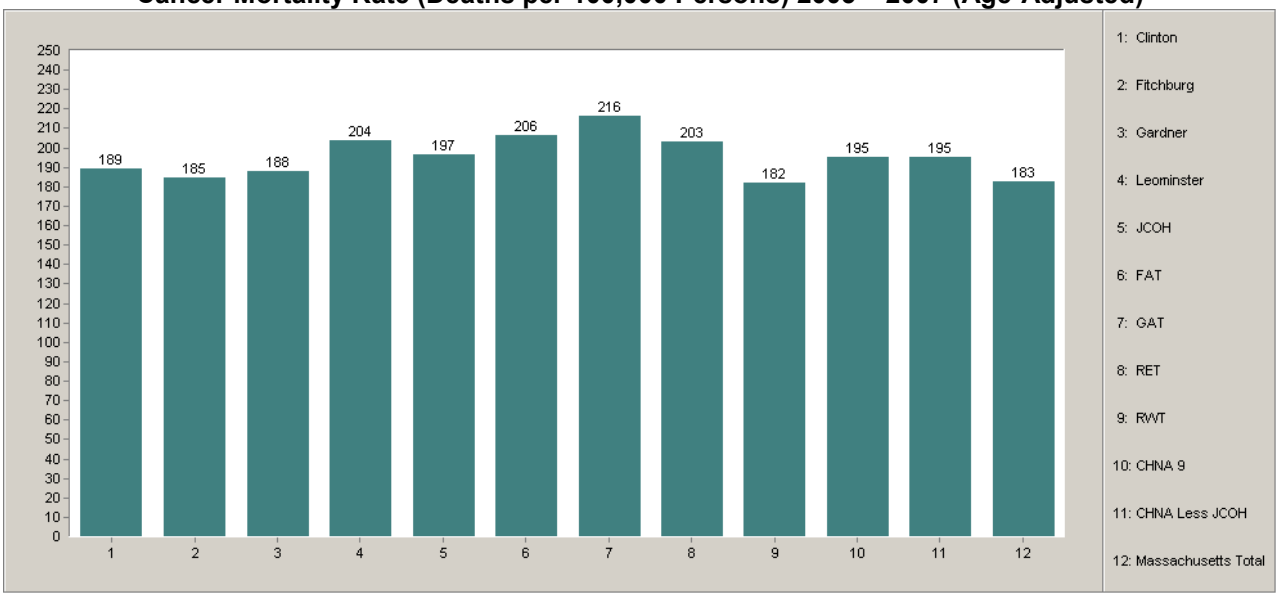
Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 by Race/Ethnicity (Age-Adjusted) – Selected Cities/Towns



Cancer Mortality Rate

During the 2005 – 2007 time period, the age-adjusted Cancer Mortality Rate in Massachusetts was 183. Most of the reporting regions in CHNA 9 had age-adjusted Cancer Mortality Rates higher than the State, with the highest rates reported in the Gardner Area Towns at 216, followed by the Fitchburg Area Towns at 206 and Leominster at 204 cancer deaths per 100,000. The lowest Cancer Mortality Rate was reported in the Rural Western Towns at 182.

Cancer Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



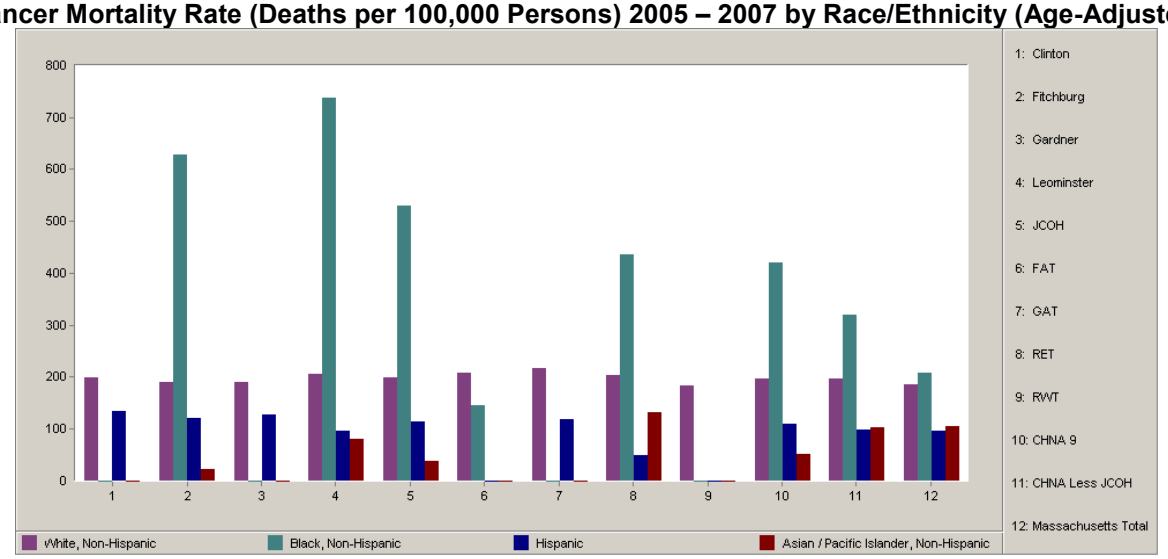
Healthy People 2010 Goal: 159.9 per 100,000

In the focus groups, participants were asked to list the health conditions that they and/or their family experience. In close to 75% of all focus groups, cancer was listed as one of the top three health conditions facing participants and their families. On several occasions, community members questioned whether environmental pollutants were linked to high cancer rates.

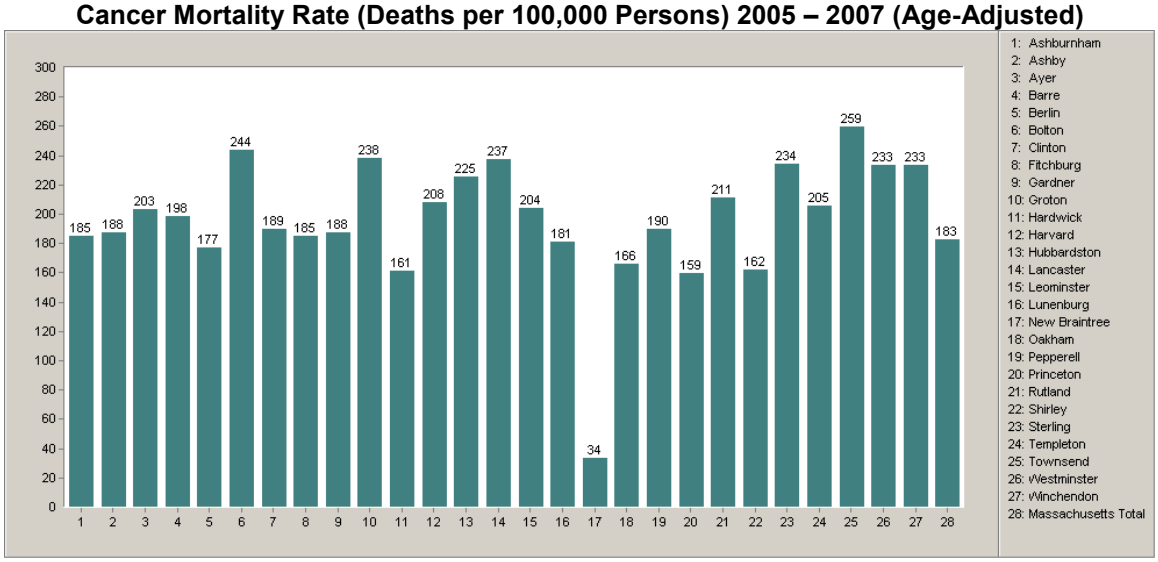
Within the Commonwealth, the age-adjusted Cancer Mortality Rate varied by racial/ethnic group, with the highest rates found among Black, non-Hispanics at 207, followed by White, non-Hispanics at 186, Asians at 105 and Hispanics at 96. Blacks also experienced the highest Cancer Mortality Rates in most of the reporting regions, with age-adjusted Cancer Mortality Rate for Blacks of 738 in Leominster, 629 in Fitchburg, and 436 in the Rural Eastern Towns. The JCOH service area had a Cancer Mortality Rate for Blacks of 530, while the CHNA Less JCOH had a rate of 319.

The highest age-adjusted Cancer Mortality Rate for White, non-Hispanics was reported in the Gardner Area Towns at 217, while for Hispanics, the highest rate was found in Fitchburg at 120. The high Cancer Mortality Rates for Hispanics in Clinton and Gardner and Asians in the Rural Eastern Towns and Leominster are suspect due to the small number of actual cases.

Cancer Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 by Race/Ethnicity (Age-Adjusted)



Cancer Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Most of the cities/towns had age-adjusted Cancer Mortality Rates greater than the State, with the highest rate of 259 reported in Westminster. Age-adjusted Cancer Mortality Rates above 235 were also reported in Bolton (244), Groton (238) and Lancaster (237). The lowest age-adjusted Cancer Mortality Rate was found in New Braintree at 34.

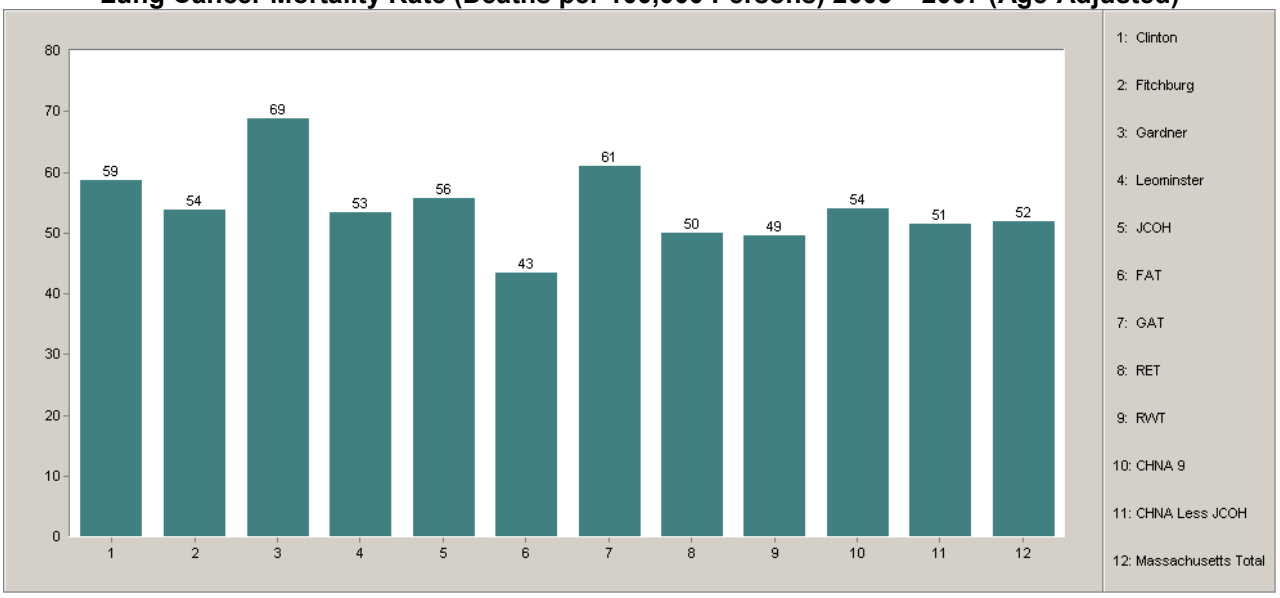
The numbers are too small to do an analysis of Cancer Mortality Rates by racial/ethnic group at the city/town level. However, as noted earlier, cancer was one of the top health concerns across all populations.

Lung Cancer Mortality Rate

During the 2005 – 2007 time period, the age-adjusted Lung Cancer Mortality Rate in Massachusetts was 52. Many of the reporting regions in CHNA 9 had age-adjusted Lung Cancer Mortality Rates higher than the State, with the highest rate reported in Gardner at 69, followed by the Gardner Area Towns at 61, and Clinton at 59. The lowest Lung Cancer Mortality Rates were reported in the Fitchburg Area Towns at 43, and the Rural Western Towns at 49.

Within the Commonwealth, the age-adjusted Lung Cancer Mortality Rate varied by racial/ethnic group, with the highest rates found among White, non-Hispanics at 54, followed by Black, non-Hispanics at 53, Asians at 28, and Hispanics at 17. The numbers are too small to do an analysis by racial/ethnic group at a lower level, including at CHNA 9 level.

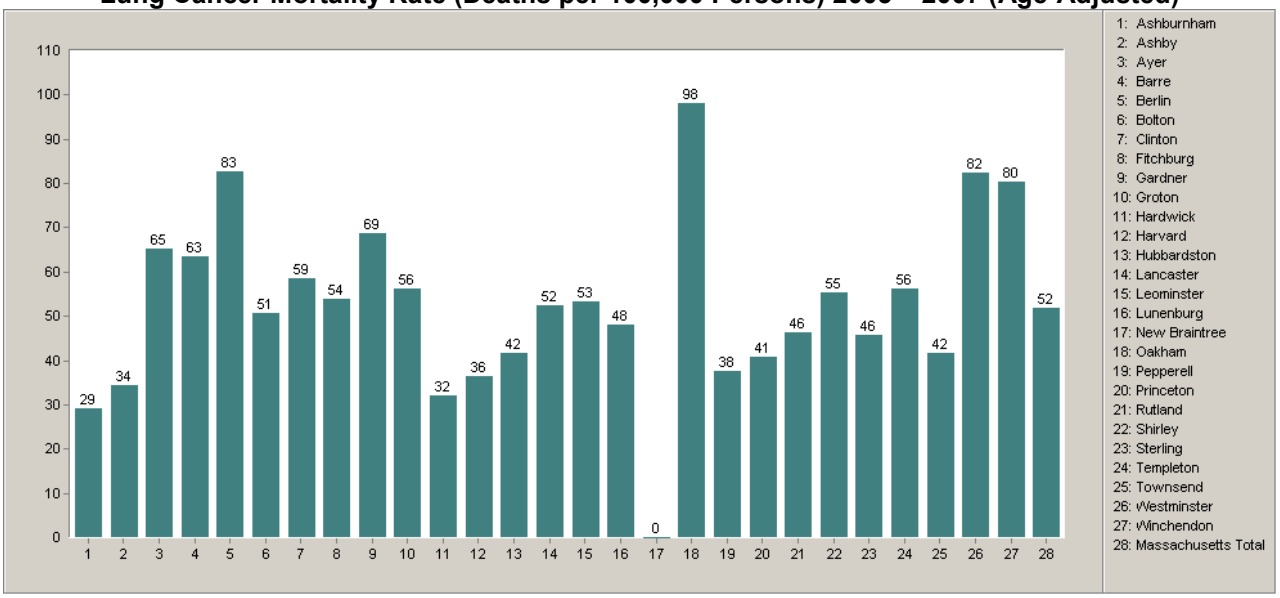
Lung Cancer Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Healthy People 2010 Goal: 44.9 per 100,000

Half of the cities/towns had age-adjusted Lung Cancer Mortality Rates greater than the State. However, the high rates in Oakham (98) and Berlin (83) must be discounted due to the fact that they are based on small numbers of actual cases. Several cities and towns did experience age-adjusted Lung Cancer Mortality Rates in the 80s during this time period, including Westminster at 82 and Winchendon at 80. The lowest age-adjusted Lung Cancer Mortality Rate was found in New Braintree at 0 and Ashburnham at 29 deaths per 100,000.

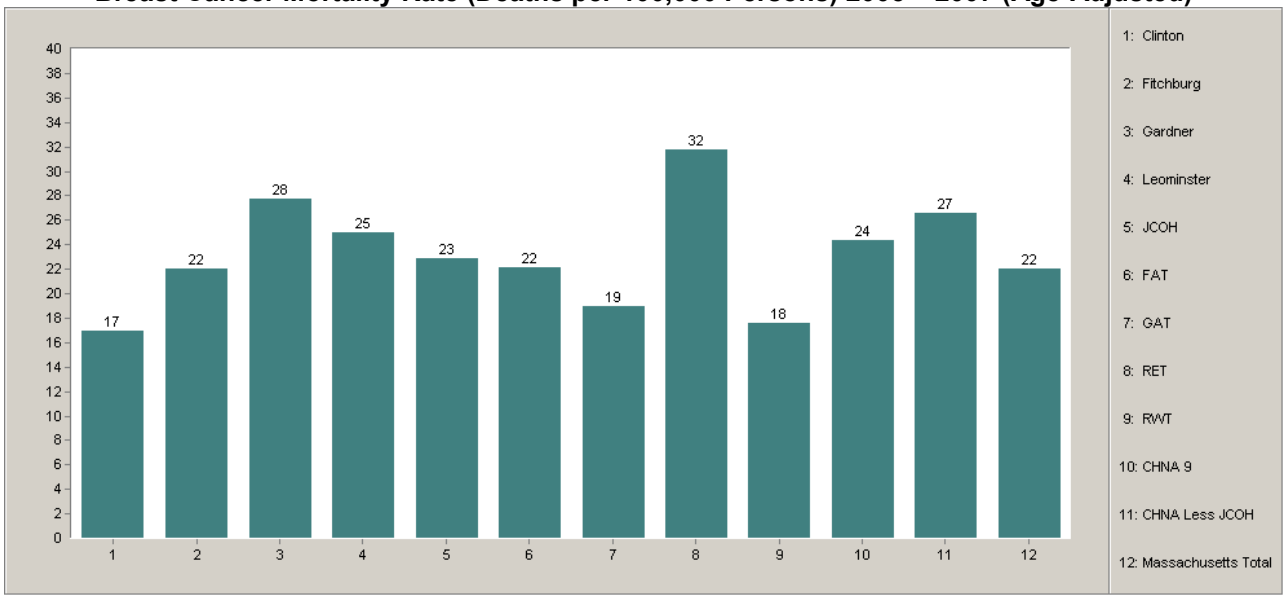
Lung Cancer Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Breast Cancer Mortality Rate

In the 2005 – 2007 time period, the age-adjusted Breast Cancer Mortality Rate for women in Massachusetts was 22. Three of the reporting regions in CHNA 9 had age-adjusted Breast Cancer Mortality Rates higher than the State, with the highest rate reported in the Rural Eastern Towns at 32, followed by Gardner at 28 and Leominster at 25. The lowest Breast Cancer Mortality Rates were reported in Clinton at 17, the Rural Western Towns at 18 and the Gardner Area Towns at 19. However, it is important to note that some of these rates are based on small actual numbers.

Breast Cancer Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Healthy People 2010 Goal: 22.3 per 100,000

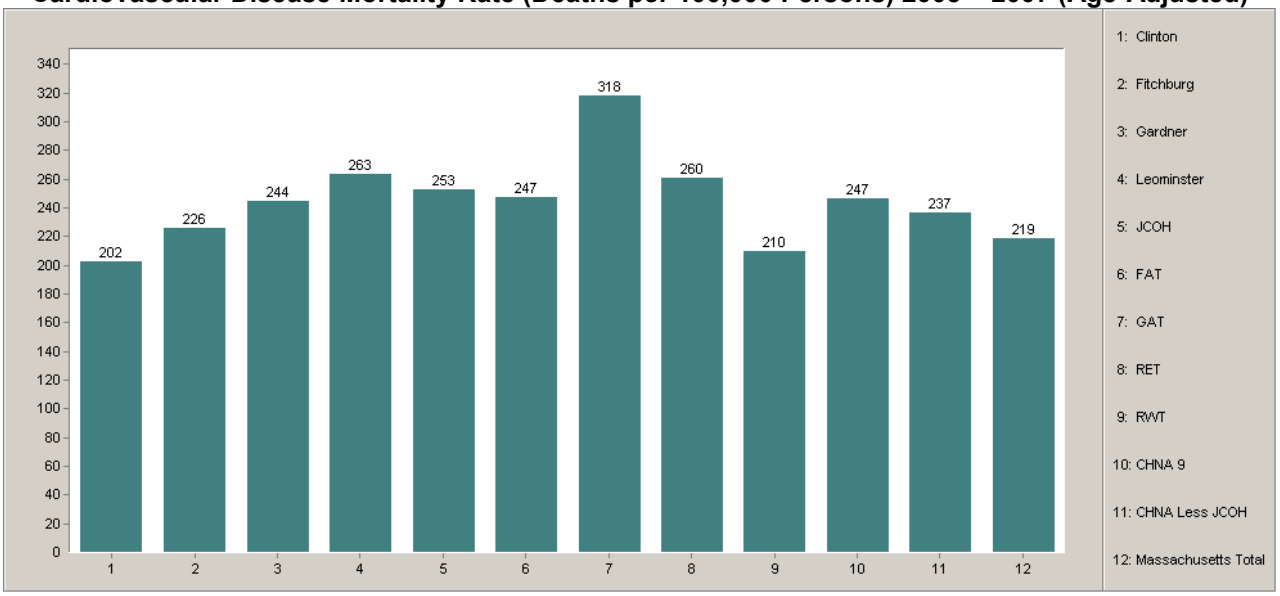
A breakdown of age-adjusted Breast Cancer Mortality Rates for women for the 2005 – 2007 period for the Commonwealth by race/ethnicity indicates that Black, non-Hispanics had the highest rate at 30, followed by White, non-Hispanics at 22, Hispanics at 12 and Asians at 8. The numbers are too small to do an analysis at a lower level, including at CHNA 9 level. In addition, the numbers are also too small to do an analysis of Breast Cancer Mortality Rates by city/town.

Cardiovascular Disease Mortality Rate

During the 2005 – 2007 time period, the age-adjusted Cardiovascular Disease Mortality Rate in Massachusetts was 219. Most of the reporting regions in CHNA 9 had age-adjusted Cardiovascular Disease Mortality Rates higher than the State, with the highest rate reported in the Gardner Area Towns at 318, followed by Leominster at 263, and the Rural Eastern Towns at 260. The lowest Cardiovascular Disease Mortality Rates were reported in the Clinton (202) and the Rural Western Towns (210).

The high rates of Cardiovascular Disease (CVD) mortality reported in the quantitative data in this section were also reflected in the qualitative data. While community members did not note "Cardiovascular mortality," they rather spoke about CVD in terms of stroke, heart disease, heart attack, high blood pressure, heart murmurs, congestive heart failure, enlarged heart, and "having a pacemaker". Community members also listed the related conditions and risk factors such as high cholesterol and high blood pressure. CVD was identified across focus groups as a health condition with which participants and/or family members face.

Cardiovascular Disease Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)

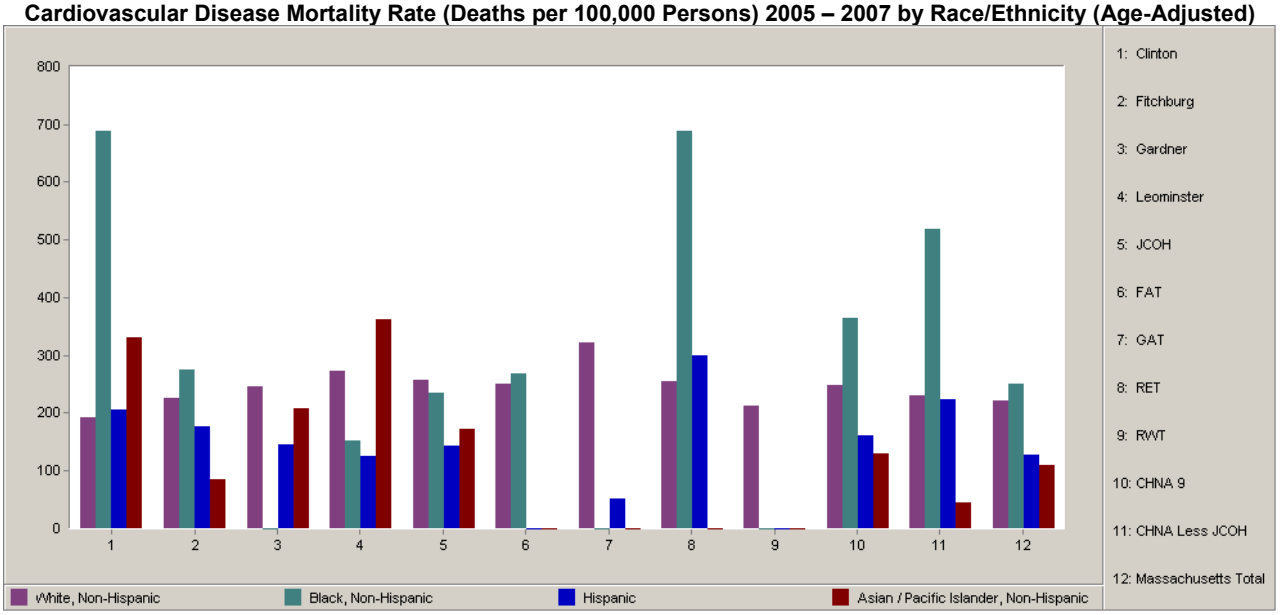


Healthy People 2010 Goal: 166 Coronary Heart Disease Deaths per 100,000

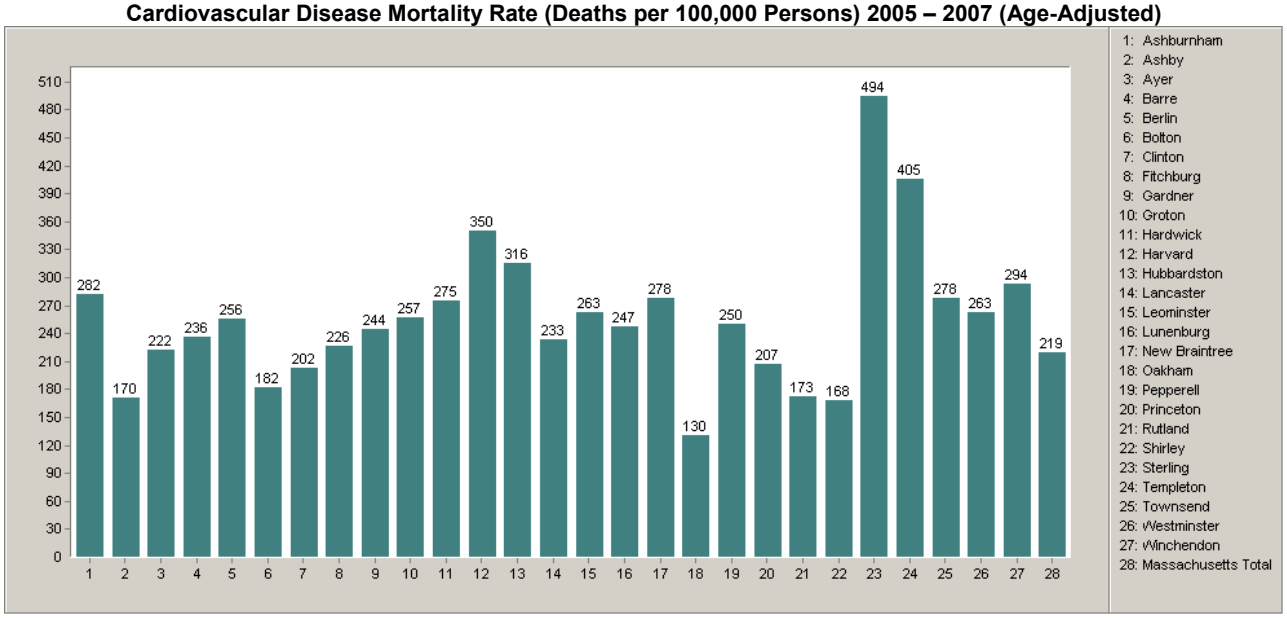
Within the Commonwealth, the age-adjusted Cardiovascular Disease Mortality Rate varied by racial/ethnic group, with the highest rates found among Black, non-Hispanics at 251, followed by White, non-Hispanics at 221, Hispanics at 128 and Asians at 109. Black, non-Hispanics also experienced the highest Cardiovascular Disease Mortality Rates in some of the reporting regions, with the highest age-adjusted Cardiovascular Disease Mortality Rate of 688 reported for Blacks in the Rural Eastern Towns. The JCOH service area had a much lower Cardiovascular Disease Mortality Rate for Blacks at 365 than did the CHNA Less JCOH at 518.

The high Cardiovascular Disease Mortality Rates of 689 reported for Blacks in Clinton, 299 for Hispanics in the Rural Eastern Towns and 362 for Asians in Leominster must be discounted due to a very small number of actual cases.

Cardiovascular Disease Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 by Race/Ethnicity (Age-Adjusted)



Cardiovascular Disease Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Most of the cities/towns had age-adjusted Cardiovascular Disease Mortality Rates greater than the State, with the highest rate of 494 reported in Sterling. Age-adjusted Cardiovascular Disease Mortality Rates above 300 were also reported in Templeton (405), Harvard (350) and Hubbardston (316). Oakham had the lowest age-adjusted Cardiovascular Disease Mortality Rate at 130.

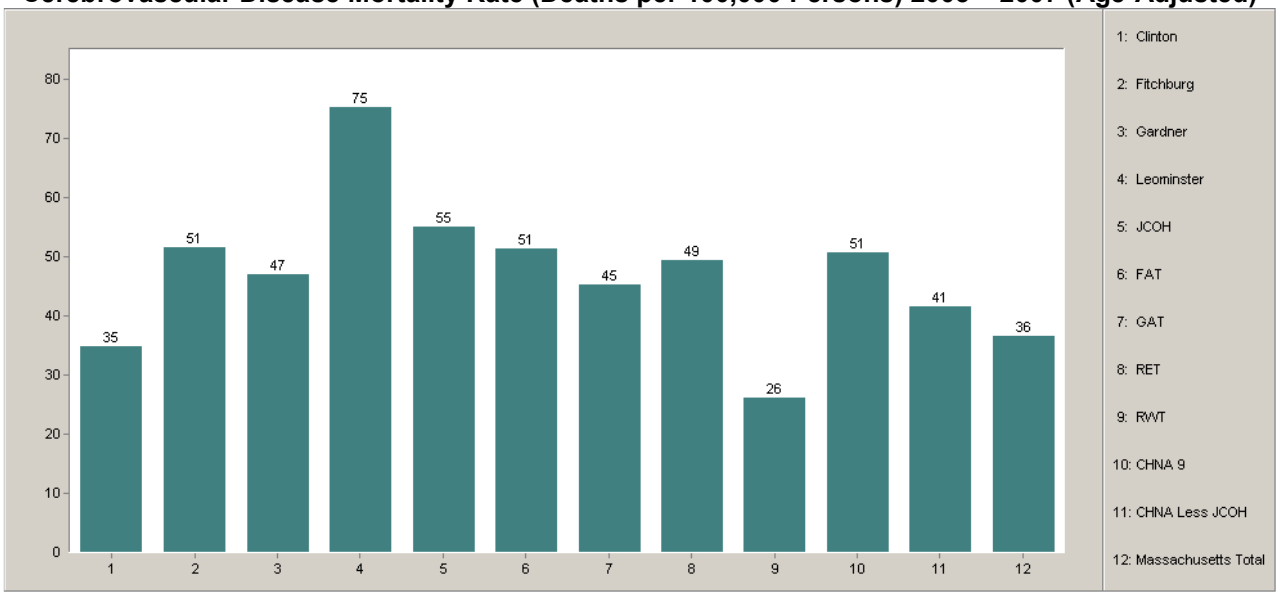
The numbers are too small to perform an analysis of Cardiovascular Disease Mortality Rates by racial/ethnic group at the city/town level.

Cerebrovascular Disease Mortality Rate

In the 2005 – 2007 time period, the age-adjusted Cerebrovascular Disease Mortality Rate in Massachusetts was 36. Most of the reporting regions in CHNA 9 had age-adjusted Cerebrovascular Disease Mortality Rates higher than the State, with the highest rate reported in Leominster at 75, followed by Fitchburg and the Fitchburg Area Towns, both with 51 age-adjusted Cerebrovascular Disease deaths per 100,000. The lowest age-adjusted Cerebrovascular Disease Mortality Rates were reported in Rural Western Towns at 26 and in Clinton at 35.

Within the Commonwealth, the age-adjusted Cerebrovascular Disease Mortality Rate varied by racial/ethnic group, with the highest rates found among Black, non-Hispanics at 46, followed by White, non-Hispanics at 42, Asians at 32 and Hispanics at 27. The numbers are too small to do an analysis by race/ethnicity at a lower level, including at CHNA 9 level.

Cerebrovascular Disease Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)

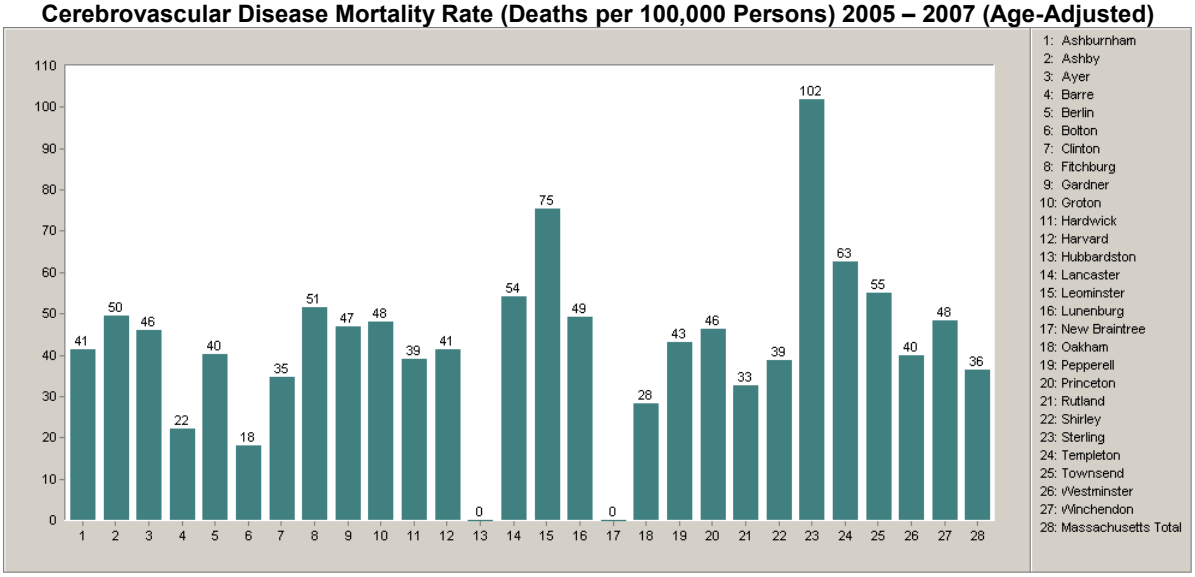


Healthy People 2010 Goal: 48 per 100,000

Most of the cities/towns had Cerebrovascular Disease Mortality Rates greater than the State, with the highest rate of 102 reported in Sterling. Age-adjusted Cerebrovascular Disease Mortality Rates above 50 were also reported in Leominster (75), Templeton (63), Townsend (55), and Lancaster (54), and Fitchburg (51).

The numbers are too small to perform an analysis of Cerebrovascular Disease Mortality Rates by racial/ethnic group at the city/town level.

Cerebrovascular Disease Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)

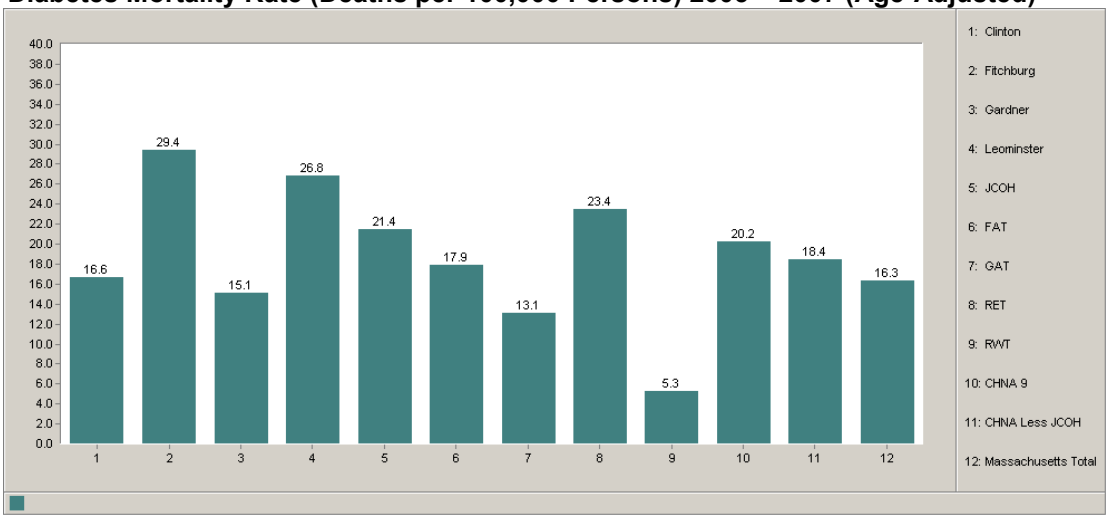


Diabetes Mortality Rate

In the 2005 – 2007 time period, the age-adjusted Diabetes Mortality Rate in Massachusetts was 16.3. Five of the reporting regions in CHNA 9 had age-adjusted Diabetes Mortality Rates higher than the State, with the highest rate reported in the Fitchburg at 29.4, followed by Leominster at 26.8 and the rural Eastern towns at 23.4. The lowest Diabetes Mortality Rates were reported in the Rural Western Towns at 5.3, the Gardner Area Towns at 13.1 and Gardner at 15.1.

As discussed in the **Behavioral Risk Factor Surveillance System (BRFSS)** section in this report, diabetes (although not specifically identified as *diabetes mortality*), was identified across focus groups. The qualitative data revealed that diabetes was a condition affecting many individuals throughout the study area and across demographic groups. In particular, diabetes was identified most frequently by the Latino participants, often affecting multiple family members. In addition, the large majority of actual group participants reported that they had a diagnosis of diabetes.

Diabetes Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Healthy People 2010 Goal: 45 per 100,000 based on more "inclusive" criteria than available on MassCHIP.

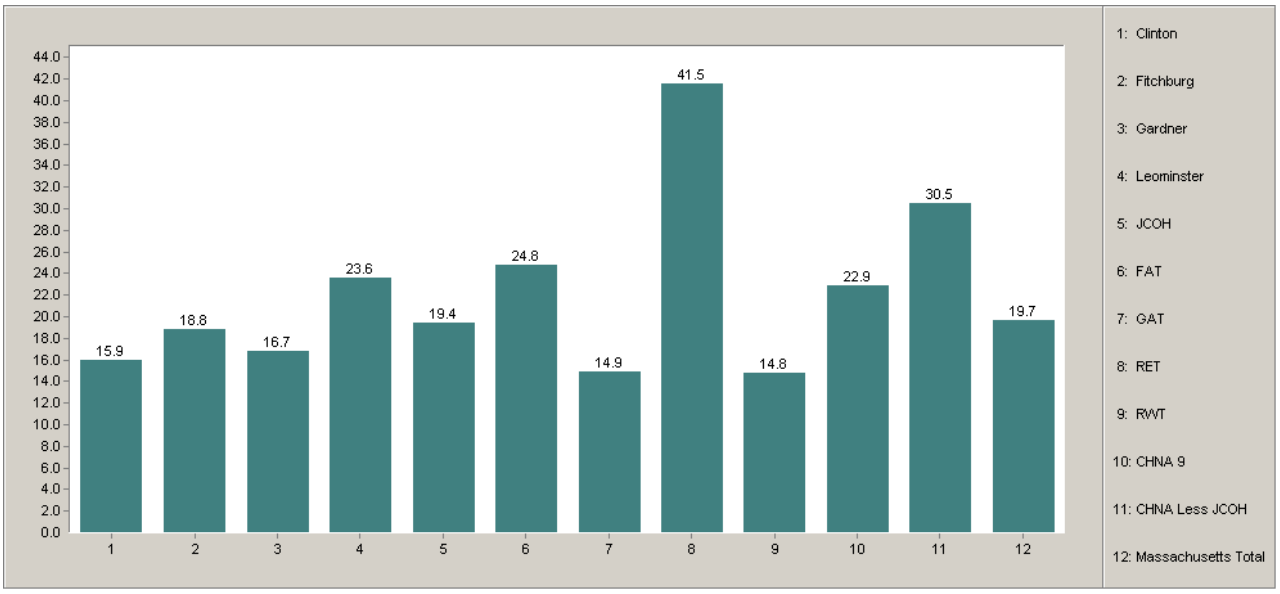
Within the Commonwealth, the age-adjusted Diabetes Mortality Rate varied among racial/ethnic groups during this time period, with a high of 36 for Black, non-Hispanics, followed by rates of 26 for Hispanics, 15 for White, non-Hispanics and 9 for Asians. The numbers are too small to provide a meaningful break out of data by race/ethnicity or by city/town.

Alzheimer's Disease Mortality Rate

In Massachusetts there were 4886 deaths due to Alzheimer's Disease in the 2005 – 2007 timeframe, for an age-adjusted Alzheimer's Disease Mortality Rate of 19.7 per 100,000. Three of the reporting regions in CHNA 9 exhibited age-adjusted Alzheimer's Disease Mortality Rates higher than the State during this time period, with the Rural Eastern Towns reporting an Alzheimer's Disease Mortality Rate of 41.5, followed by the Fitchburg Area Towns at 24.8 and Leominster at 23.6. The lowest age-adjusted Alzheimer's Disease Mortality Rate was reported in the Rural Western Towns at 14.8

The JCOH service area, with an age-adjusted Alzheimer's Disease Mortality Rate of 19.4 had a much lower rate than the CHNA Less JCOH service area did at 30.5 deaths per 100,000.

Alzheimer's Disease Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



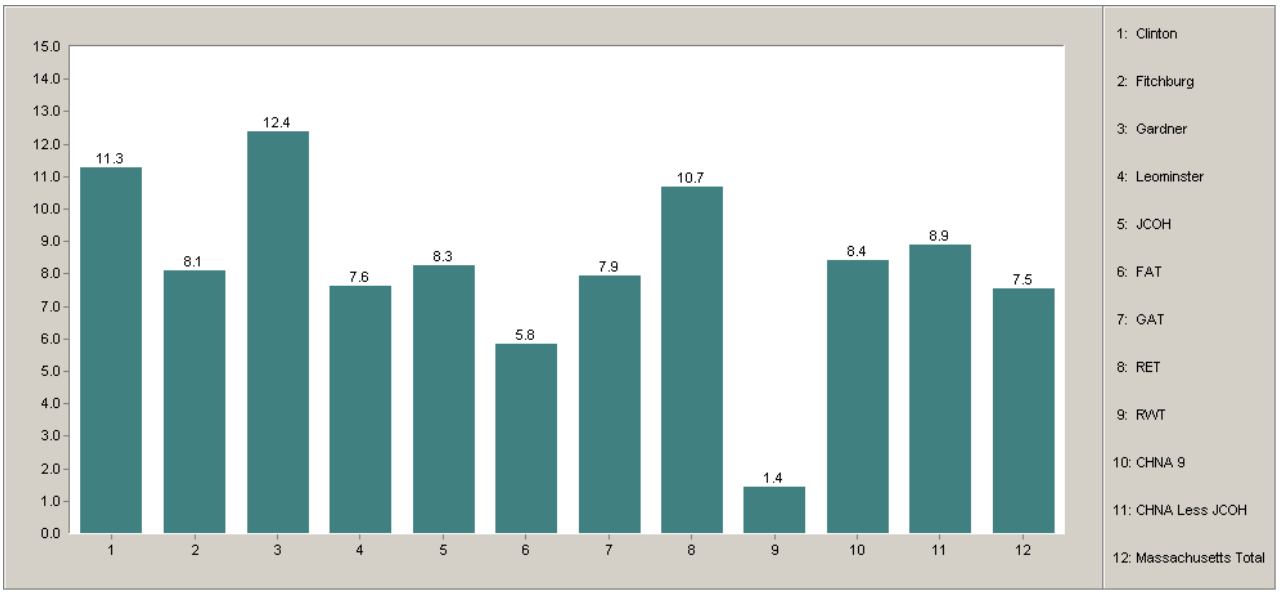
Within the Commonwealth, the age-adjusted Alzheimer's Disease Mortality Rate varied among racial/ethnic groups during this time period, with a high of 20.2 for White, non-Hispanics, followed by rates of 16.5 for Black, non-Hispanics, 11.8 for Hispanics and 8.6 for Asians. The numbers are too small to provide a meaningful break out of data by race/ethnicity or by city/town.

While the incidence of Alzheimer's Disease and/or Alzheimer's Disease mortality, did not arise frequently in the qualitative data collection, neurological disorders did arise, particularly in groups containing participants who were older adults (or caregivers of older adults). The health conditions were described as "neurological problems," "dementia," "Alzheimer's" and "Parkinson's".

Chronic Liver Disease Mortality Rate

During the 2005 – 2007 time period, the age-adjusted Chronic Liver Disease Mortality Rate in Massachusetts was 7.5. Several of the reporting regions in CHNA 9 had age-adjusted Chronic Liver Disease Mortality Rates higher than the State, with the highest rates reported in Gardner at 12.4, Clinton at 11.3 ,and the Rural Eastern towns at 10.7. The lowest age-adjusted Chronic Liver Disease Mortality Rate was reported in the Rural Western Towns at 1.4.

Chronic Liver Disease Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Healthy People 2010 Goal: 3 per 100,000

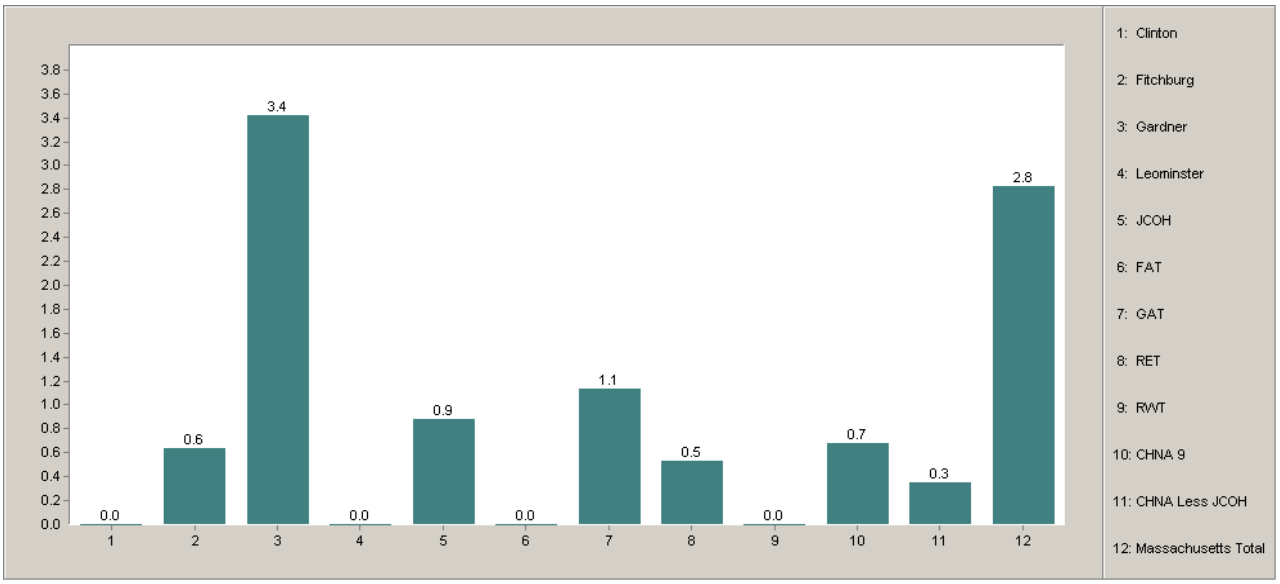
Within the Commonwealth, the age-adjusted Chronic Liver Disease Mortality Rate varied among racial/ethnic groups during this time period, with a high of 8.5 for Hispanics, followed by rates of 7.7 White, non-Hispanics, 6.9 for Black, non-Hispanics and 1.8 for Asians. The numbers are too small to provide a meaningful break out of data by race/ethnicity or by city/town.

INJURIES AND VIOLENCE

Homicide Mortality Rate

In Massachusetts there were 543 deaths due to homicide in the 2005 – 2007 timeframe, for an annual age-adjusted Homicide Mortality Rate of 2.8 per 100,000. Within the reporting regions, only Gardner exhibited a Homicide Mortality Rate higher than the State during this time period, with a rate of 3.4. However, it must be noted that this number is based on two homicides in this time period. For comparative purposes, there were four homicides in the entire JCOH service area during this time period, with these two in Gardner constituting 50% of the homicides in the JCOH. Within the CHNA Less JCOH service area there was 1 homicide during this 3 year period.

Homicide Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Note: Actual Numbers in Three Year Time Period:
Gardner: 2; JCOH service area: 4; CHNA Less JCOH service area: 1

Violence, including, but not limited to, homicide, was a serious concern articulated in the qualitative data. Expressed most consistently in the JCOH study area cities, incidents of domestic violence, homicide, gun related injuries, and youth and gang violence were identified as issues impacting the health of the communities. Violence was identified in several questions elicited in the qualitative data, most prominently in the focus group question related to social determinants of health.

> *"I am disturbed by the murders, abuses to me and other people…abuses both mental and physical, within the family and community." (Youth)*

> *"There are murders, suicides, guns and domestic violence." (Youth)*

In the youth group, a participant talked about the impact of violence in his neighborhood upon him,

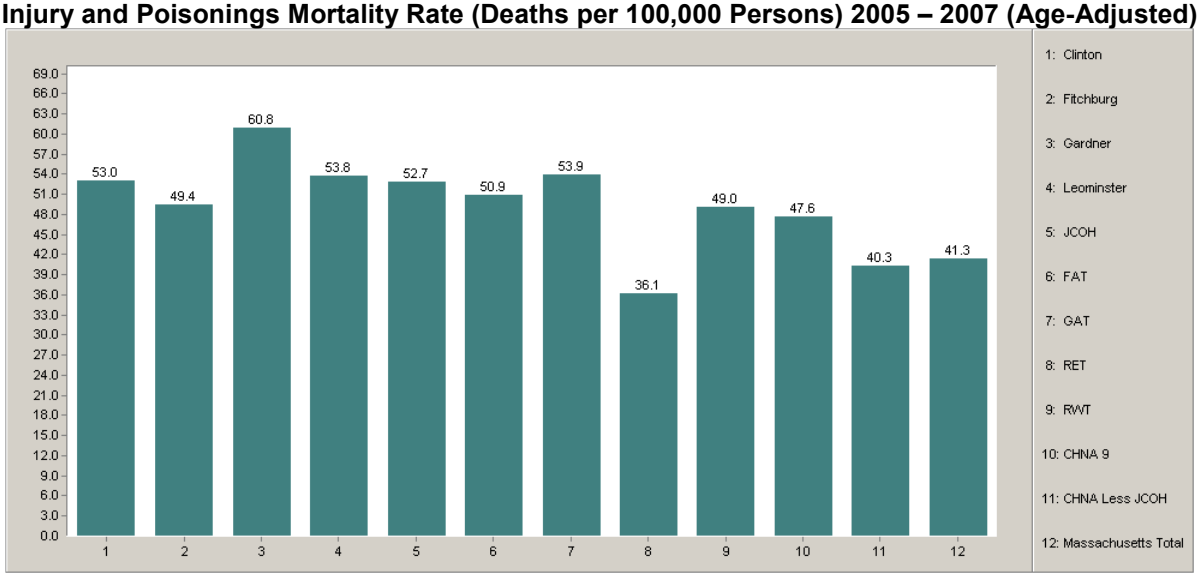
> "*…Fear, you don't want to leave your house, or you want to run away!"*

Injury and Poisonings Mortality Rate

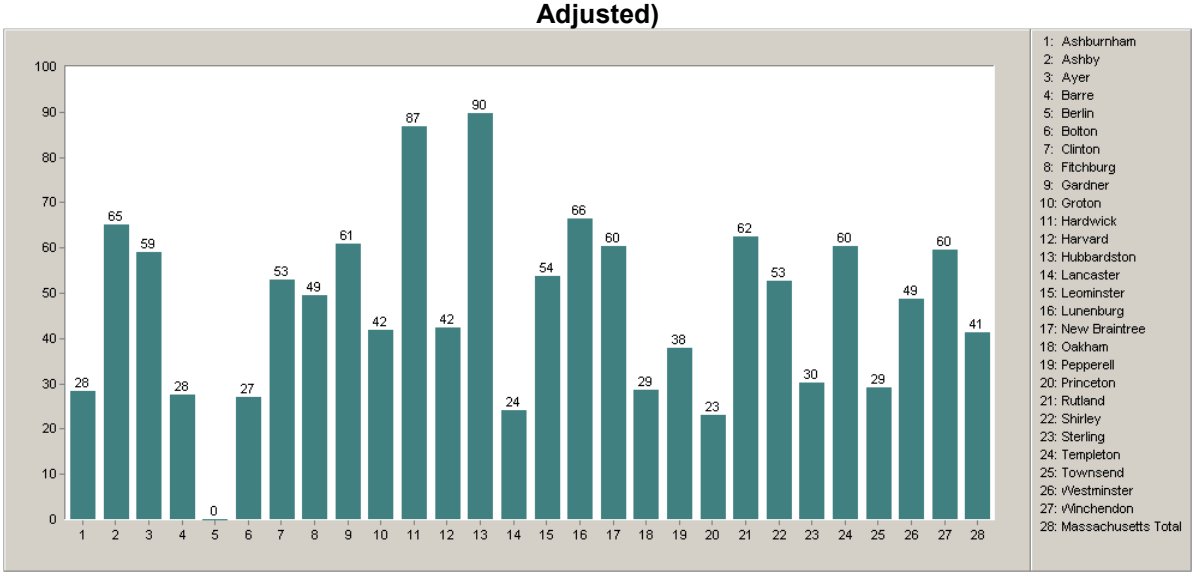
During the 2005 – 2007 time period, the age-adjusted Injury and Poisonings Mortality Rate in Massachusetts was 41.3 per 100,000. All of the reporting regions in CHNA 9, except the Rural Eastern Towns, had age-adjusted Injury and Poisonings Mortality Rates higher than the State, with the highest rate reported in Gardner at 60.8, the Gardner Area Towns at 53.9, Leominster at 53.8 and Clinton at 53. The JCOH had a much higher Injury and Poisonings Mortality Rate at 52.7 than did the CHNA Less JCOH at 40.3.

Within the Commonwealth, the age-adjusted Injury and Poisonings Mortality Rate varied among racial/ethnic groups during this time period, with a high of 53 for Black, non-Hispanics, followed by rates of 41 for White, non-Hispanics, 37 for Hispanics, and 17 for Asians. The numbers are too small to provide a meaningful break out of data by race/ethnicity for the reporting regions or CHNA 9.

Injury and Poisonings Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Injury and Poisonings Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



An analysis of Injury and Poisonings Mortality Rates by individual city/town indicates high rates in Hubbardston (90), Lunenburg (66), and Rutland (62). However, the high rates seen above for Hardwick and Ashby are suspect due to the small number of actual cases upon which they are based.

Again, the numbers are too small to provide a meaningful break out of data by race/ethnicity for the cities/towns.

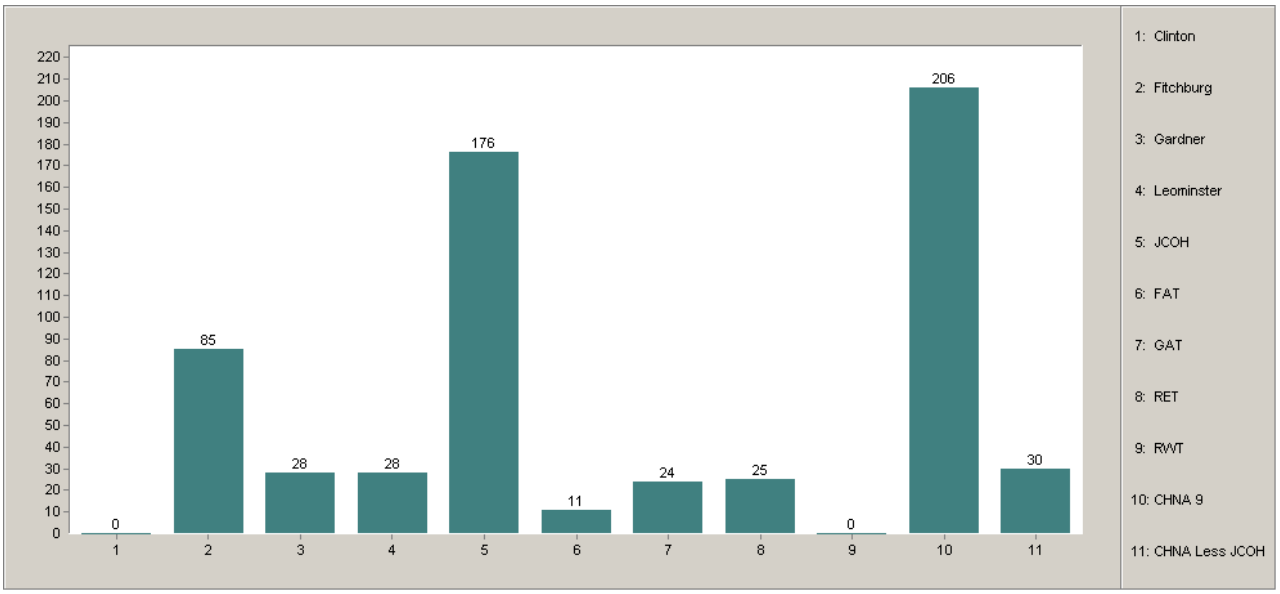
Weapons Related Injuries

In Massachusetts there were 6692 weapons-related injuries in the 2005 – 2007 timeframe. During this period, there were 206 weapons-related injuries in CHNA 9, with 85% of these weapon-related injuries in the JCOH service area. Among the reporting regions, the highest number of weapons-related injuries was reported in Fitchburg at 85, followed by 28 each in Gardner and Leominster.

As noted in the prior section, shootings, domestic violence, and gang related violence were articulated as concerns in the qualitative data. The qualitative expressions of this concern were consistent with the overall rates of the cities and towns in which the quantitative data indicated a increase over State adjusted rates.

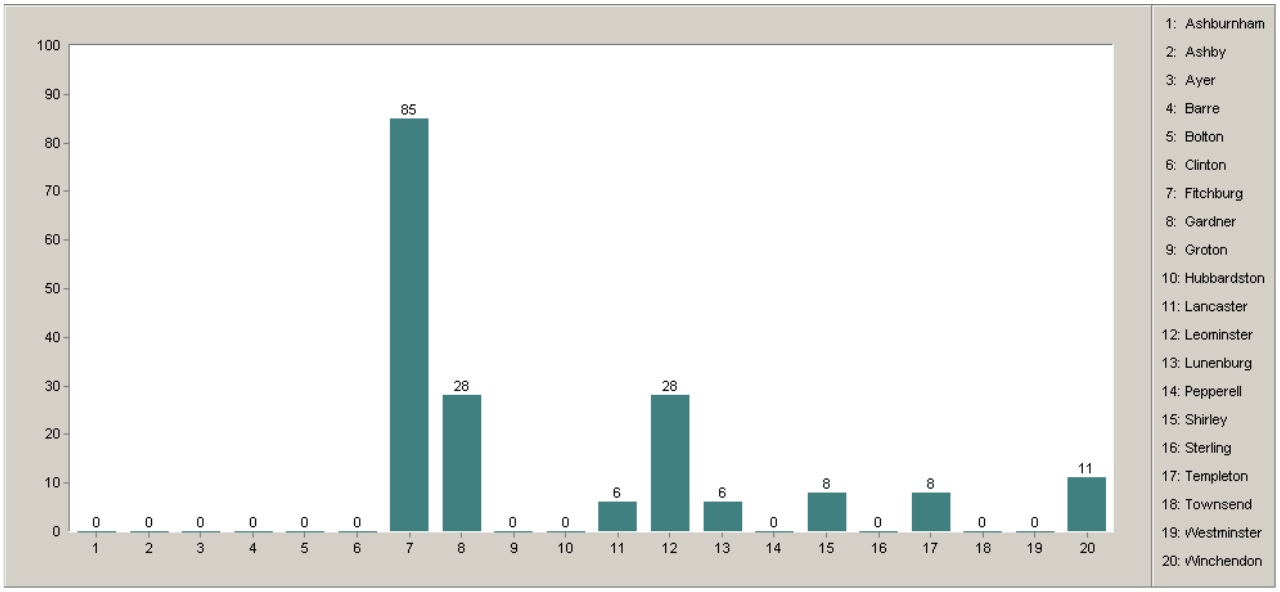
> *"The fighting, violence, and gun shooting are ridiculous. I go to sleeping hearing at least two gun shots a night. I get scared wondering if the sounds are coming closer and closer to my house and family…There are nights when I wonder if my children will be okay and safe." (Asian)*

Count of Weapons-Related Injuries 2005 – 2007



The only towns to have sufficient numbers of weapons-related injuries in this time period to be included in the Weapons Related Injury Surveillance System (WRISS) were Winchendon with 11 injuries, Shirley and Templeton with 8 each and Lancaster and Lunenburg with 6 each.

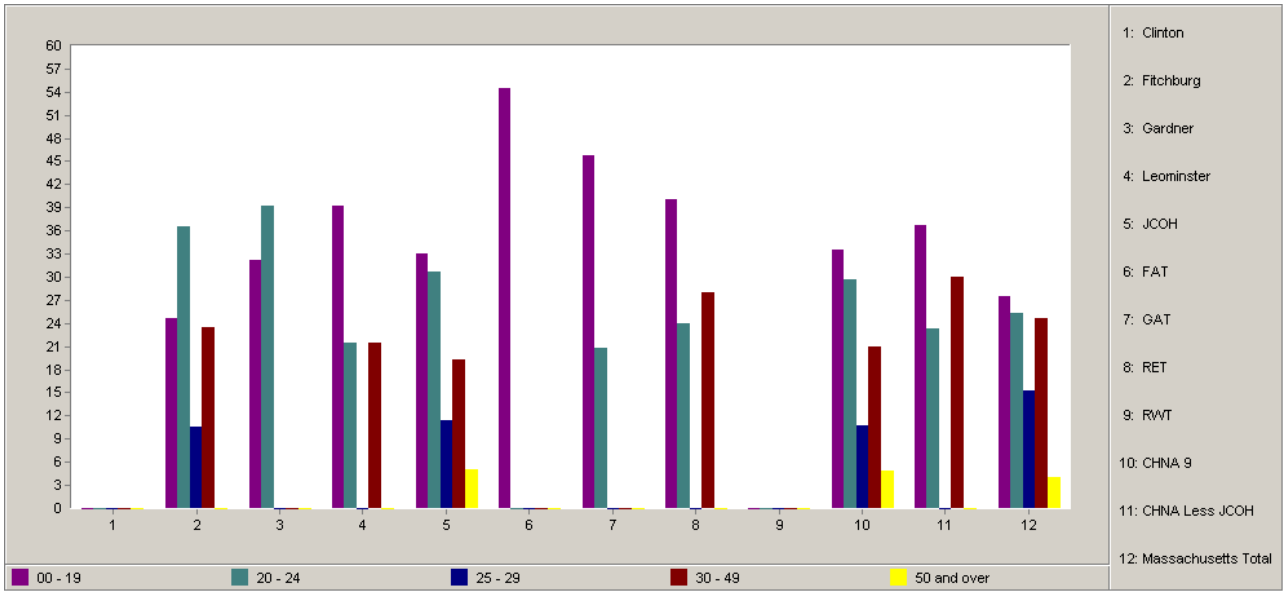
Count of Weapons-Related Injuries 2005 – 2007



Weapons Related Injuries by Age Group

Within the Commonwealth, the percent of weapons-related injuries in the 2005 – 2007 time period varied by age group, with 28% of injuries to individuals less than 20, 25% of injuries to 20 –24 year olds, 15% to 25 – 29 year olds, 25% to individuals 30 – 49 and only 4% to those 50 and older. Within the reporting regions, individuals in the less than 20 age group accounted for most of the weapons-related injuries in the Fitchburg Area Towns (55%), the Gardner Area Towns (46%), the Rural Eastern Towns (40%), and Leominster (39%). However, 20 – 24 year olds had the highest percentage of weapons-related injuries in both Gardner at 39%, and Fitchburg at 36%.

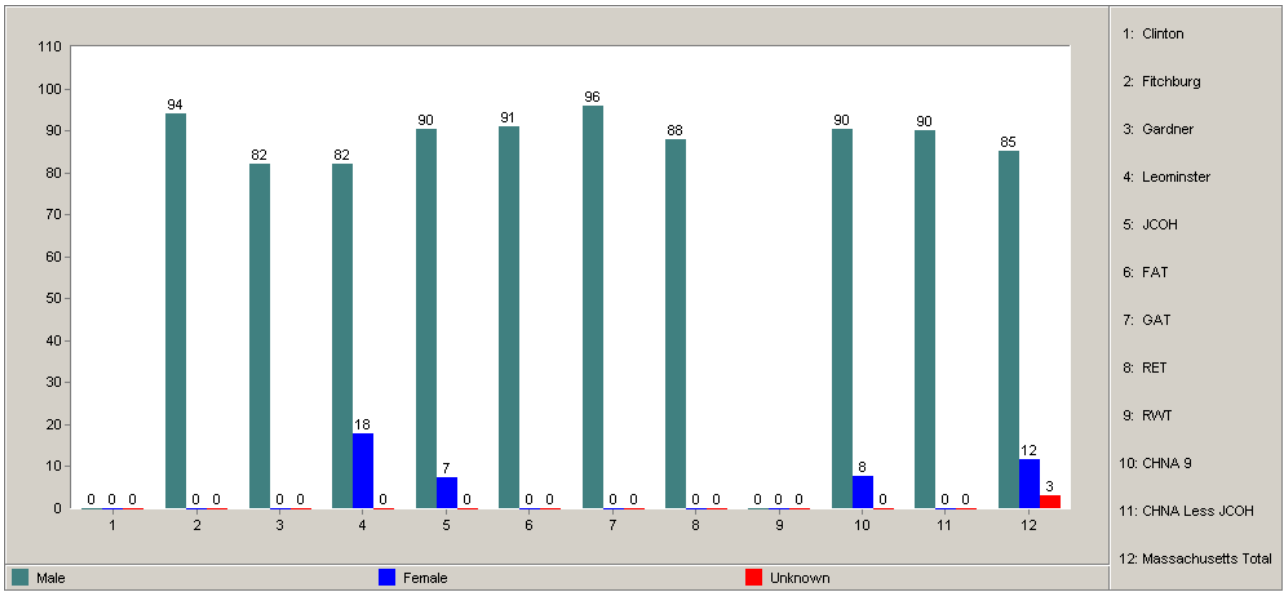
Percent of Weapons-Related Injuries by Age Group 2005 – 2007



Weapons Related Injuries by Gender

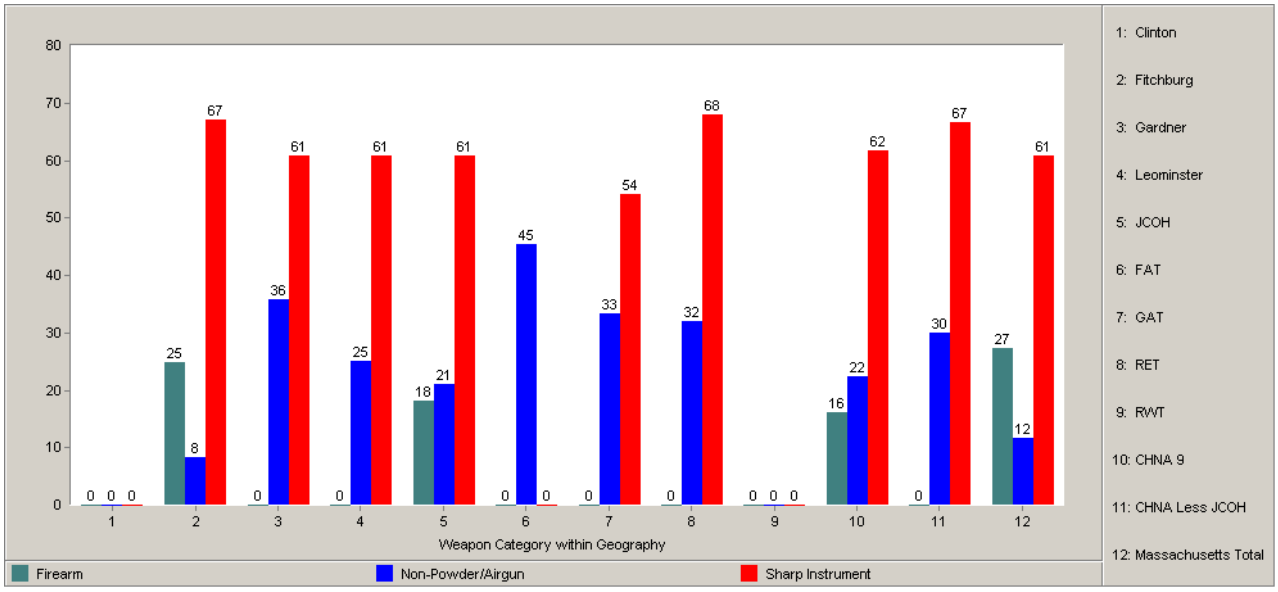
Within Massachusetts, 85% of those suffering from weapons-related injuries in the 2005 – 2007 time period were males, 12% were females, and 3% were of unknown gender. In the reporting regions, males accounted for between 82% and 96% of residents with weapon-related injuries.

Percent of Weapons-Related Injuries by Gender 2005 – 2007



Weapons Related Injuries by Weapon

Percent of Weapons-Related Injuries by Weapon 2005 – 2007



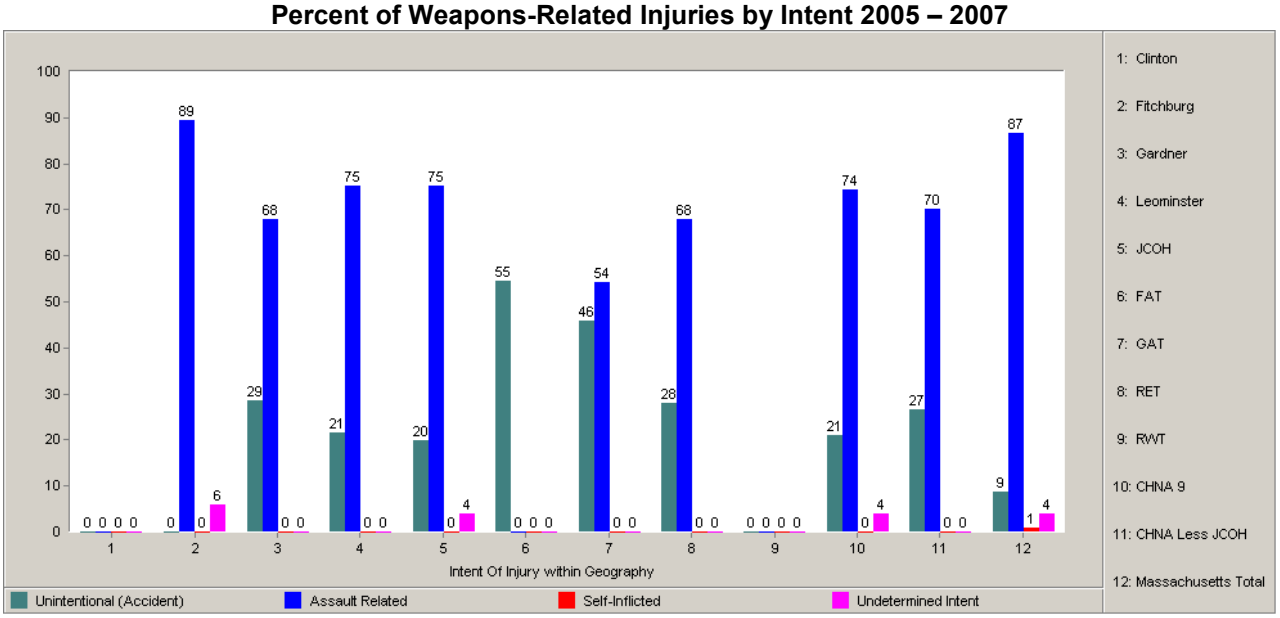
The majority of weapons-related injuries in the Commonwealth in the 2005 – 2007 time period were caused by sharp instruments at 61%, followed by firearms at 27% and non-powder/air guns at 12%. Within most of the reporting regions, the majority of the weapons-related injuries were also caused by sharp instruments. However, the Fitchburg Area Towns reported a high percentage of injuries caused by non-powder/air guns at 45%.

Weapons Related Injuries by Intent

Within Massachusetts, 87% of weapons-related injuries in the 2005 – 2007 time period were assault-related, while 9% were unintentional (accident), 4% were of undetermined intent and 1% was self- inflicted injuries. Within most of the reporting regions, assault-related injuries accounted for the majority of the weapons-related injuries, ranging from 54% to 89% of the injuries. However, many of the reporting regions also reported much higher percentages of unintentional injuries than the Commonwealth. The Fitchburg Area Towns reported that 55% of its weapons-related injuries were unintentional or accidental, while the Gardner Area Towns reported that 46% of its injuries were unintentional.

None of the data in MassCHIP from the Weapons Related Injury Surveillance System (WRISS) is available by race/ethnicity, in rates per 100,000 format or as age-adjusted figures. The WRISS data is only available as raw counts.

Percent of Weapons-Related Injuries by Intent 2005 – 2007

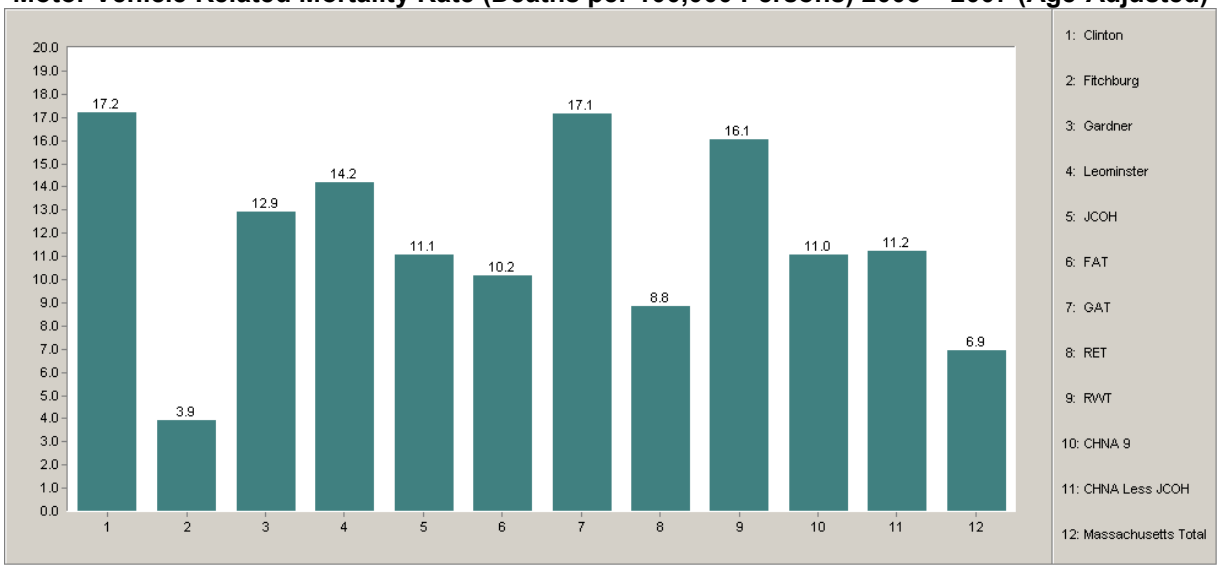


Motor Vehicle Related Mortality Rate

During the 2005 – 2007 time period, the age-adjusted Motor Vehicle Mortality Rate in Massachusetts was 6.9 per 100,000. All of the reporting regions in CHNA 9, except Fitchburg, reported higher Motor Vehicle related Mortality Rates than the Commonwealth as a whole. The highest rates were reported in Clinton at 17.2, the Gardner Area towns at 17.1 and the Rural Western Towns at 16.1.

During the 2005 – 2007 time period, the Motor Vehicle related Mortality Rates within the Commonwealth were similar for White, non-Hispanics, Black, non-Hispanics and Hispanics at 7.1, 7.0 and 6.6, respectively. However, the rate for Asians was only 3.5.
The actual number of cases of motor vehicle deaths in this time period is too small to support analyses by race/ethnicity, city/town or age group.

Motor Vehicle Related Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Child Abuse/Neglect

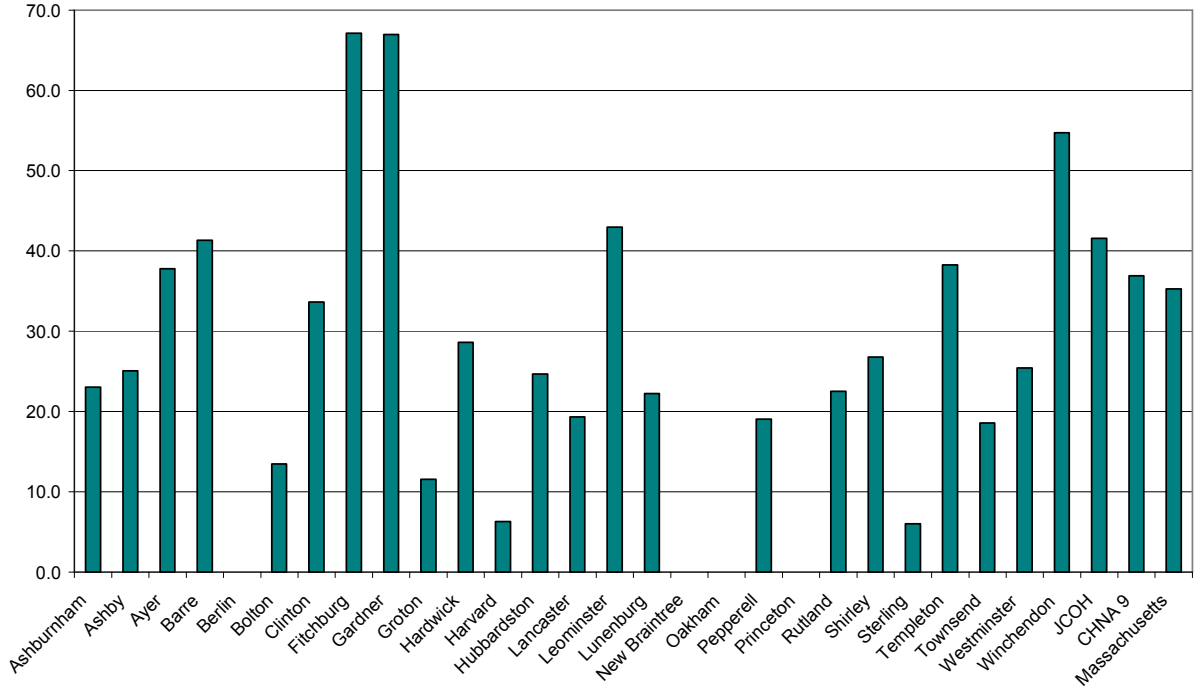
The most recent data available related to child abuse/neglect is for the one year period of 2006. In addition, this data is not available by reporting regions or by racial/ethnic group.

Within the Commonwealth there were 52,919 children under the age of 18 with investigations of abuse/neglect in 2006 for a rate of 35.3 cases per 1,000 children. Within CHNA 9, the child abuse/neglect investigation rate for children under the age of 18 in 2006 was 36.9 cases per 1,000. The rate was higher within the JCOH service area at 41.6 cases per 1,000.

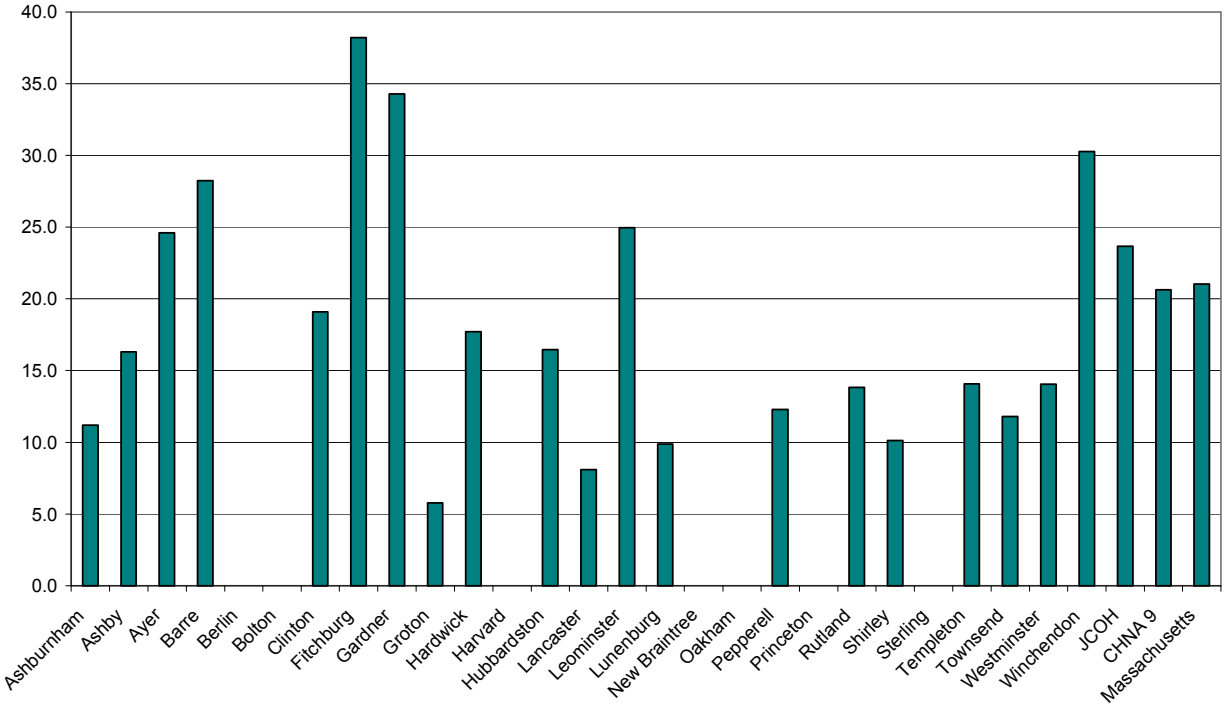
Several of the cities/towns within CHNA 9 also had child abuse/neglect investigation rates per 1,000 that were higher than the State. Fitchburg and Gardner had the highest child abuse/neglect investigation rates at 67 cases per 1,000 or 1.9 times the State's rate. Winchendon, at 54.7 cases per 1,000, and Leominster, at 43 cases per 1000, also had high child abuse/neglect investigation rates.

When verified investigations are considered, within the Commonwealth there were 31,547 children under the age of 18 with verified investigations of abuse/neglect in 2006 for a rate of 21 cases per 1000 children. Within CHNA 9, the rate of verified child/abuse neglect investigations per 1,000 in 2006 was 20.6. However, the JCOH service area experienced a higher verified child abuse/neglect investigation rate of 23.7 per 1000.
Several of the cities/towns within CHNA 9 also had verified child abuse/neglect investigation rates per 1,000 that were higher than the State. Fitchburg and Gardner had the highest verified child abuse/neglect investigation rates at 38.2 and 34.3 cases per 1,000, respectively. Winchendon at 30.3 cases per 1000 also had a high verified child abuse/neglect investigation rate.

Children with Investigations of Abuse/Neglect 2006 - Rate per 1000
(Unduplicated counts of children)



Children with Verified Investigation of Abuse/Neglect 2006 - Rate per 1000
(Unduplicated Count of Children)



Domestic Violence

Domestic violence (also referred to as intimate partner violence or IPV) is a serious health issue that arose consistently across the quantitative and qualitative data in this study. Domestic violence arose across geographic, socioeconomic and ethnic and racial groups throughout the study area. Domestic violence is associated with many social and health issues including but not limited to: substance abuse; depression; attempted suicide and suicide; homelessness; teen pregnancy; STDs and HIV, child abuse; sexual assault; teen dating violence; homicide; and many assorted stress related illnesses and diseases (Centers for Disease Control and Prevention, 2011: (http://www.cdc.gov/ViolencePrevention/intimatepartnerviolence/index.html, http://www.cdc.gov/violenceprevention/pdf/IPV_factsheet-a.pdf). Domestic violence cuts across all races, socio-economic groups, religions, and educational levels. It is seen in heterosexual and same-sex relationships. While the majority of victims are women, approximately 10-15% of the victims are men.

In 2008, the Governor issued a Public Health Advisory on Domestic Violence due to the domestic violence homicide rate occurring in Massachusetts. North Central Massachusetts was not immune from this disturbing phenomenon. From the fall of 2009 through the summer of 2010, there were five domestic violence homicides and two related suicides. In an effort to save lives and address the violence in this region, four Domestic Violence High Risk Response Teams were established throughout North Central Massachusetts. 1400 police officers, (including campus police from both Mount Wachusett Community College and Fitchburg State University), the Worcester County District Attorney's Office Trial Court Assistant District Attorneys, and Victim/Witness Advocates were trained in Dangerousness Assessment and Strangulation.

One of the problems facing any data driven report is the lack of data associated with an issue such as domestic violence, particularly at the local level. For example, police departments are not required to identify a 911 call or a subsequent police report as domestic violence. Challenges also exist in tracking the occurrence of domestic violence in the healthcare system. With the exception of data collection related to targeted research studies and specialized programmatic initiatives, data collection within the healthcare system is most often associated with billing codes for medical diagnoses, medical procedures, and hospitalizations. Similarly, in the public health arena, fatal and non-fatal injuries (including suicides and attempted suicides) are tracked, but are not routinely linked in the data specifically to domestic violence. When a homicide occurs within the context of domestic violence, it is more likely to be reported in the media and in the criminal justice system as being "related to domestic violence." However, this is not always the case as some homicides may not be classified accurately until many months or years later.

Although data on domestic violence is limited, the following sources of data can provide a glimpse of domestic violence in North Central Massachusetts. An important indicator of the prevalence of domestic violence is the data on child abuse. Research on child abuse and domestic violence suggests a 50-60% concurrent incident rate of domestic violence and child abuse (Domestic Violence Awareness Project, 2009: http://www.nrcdv.org/dvam/about/aboutdv.php). As indicated in the **Child Abuse/Neglect** section of this report, in some locations in North Central Massachusetts the rate for child abuse is almost twice the rate of the Commonwealth, which could indicate a high rate of domestic violence as well.

The most consistent data is the Massachusetts Trial Court Civil Protection Order Registry. The registry records the permanent protection orders issued by the six District Courts in North Central Massachusetts. However, this data does not reflect the number of Temporary Civil Protection

Orders issued by the police on evenings and weekends or by the courts for a period of 24 hours to ten days. As the following table demonstrates, there are large numbers of Civil Restraining Orders issued in the region across communities.

Calendar Year 2005 - 2010 Registry of Civil Restraining Orders
Summary Data, Selected North Central Massachusetts Courts

Selected Courts - 2009	Number of Orders	Number of Defendants	Percent Male Defendants	Percent Female Defendants
Ayer District Court	260	239	82%	18%
Clinton District Court	154	148	86%	14%
Fitchburg District Court	262	244	84%	16%
Gardner District Court	188	176	86%	14%
Leominster District Court	211	200	88%	13%
Winchendon District Court	162	151	83%	17%
Selected Courts 2009 Total	1,237	1,158	85%	15%

Selected Courts - 2010	Number of Orders	Number of Defendants	Percent Male Defendants	Percent Female Defendants
Ayer District Court	232	216	78%	22%
Clinton District Court	159	143	88%	12%
Fitchburg District Court	279	264	88%	12%
Gardner District Court	198	174	87%	13%
Leominster District Court	219	201	91%	9%
Winchendon District Court	127	120	84%	16%
Selected Courts 2010 Total	1,214	1,118	86%	14%

An important source of domestic violence data in the area is from the YWCA of Central Massachusetts Battered Women's Resources, Inc. This data reflects the number of persons coming into the courts seeking information on protection orders, community services, referrals, or safety planning. The SAFEPLAN program, started in the mid 1990s statewide, has advocates in each of the District Courts in Worcester County. In North Central Massachusetts, legal advocates were in the District Courts even before the SAFEPLAN program was in place. BWRI was one of the first agencies to incorporate the model program. Often a SAFEPLAN advocate may be the only person a victim of domestic violence will ever see given the geography and associated transportation issues. As is reflected in the following table, large numbers of persons sought services in this time period, with increases in both unduplicated individuals seeking services as well as the numbers of overall encounters with SAFEPLAN advocates (i.e., 809 and 1,009 individuals in 2007 and 2010 respectively and 3,196 and 3,678 encounters in 2007 and 2010 respectively).

SAFEPLAN Advocates Client Contact: District Courts 2007 and 2010

District Courts	2007		2010	
	Number of Individuals seeking services	Number of overall encounters with SAFEPLAN	Number of Individuals seeking services	Number of overall encounters with SAFEPLAN
Ayer	*150	360	*152	602
Clinton	*149	702	*121	569
Fitchburg	*299	1,044	*265	763
Gardner	*117	337	*152	623
Leominster	*195	522	*216	719
Winchendon	*94	231	*103	402
Totals	*809	3,196	*1,009	3,678

*Unduplicated number of clients seeking services.

In this community health assessment, **health disparities** have been a significant area of focus. Victims of domestic violence, usually women, experience health disparities words. For example, a person experiencing domestic violence may not be allowed to seek medical treatment by the abuser or by members of their family. A person may be pressured by their own community not to bring shame to the community by seeking medical care. Similarly, a person experiencing domestic violence may not seek medical care or social services because of language or cultural barriers. It was also expressed in the context of collecting data for this report that community members may also fear that what is being interpreted for them may not remain confidential and could threaten their privacy and safety. In addition, immigration status often impedes a person's seeking care or leaving the abuser because of fear of deportation. Not seeking medical care for domestic violence can have a long-lasting impact on a person's life such as brain damage; permanent eye damage; permanent deafness; internal injuries; sexual assaults; permanent disability, and associated stress related illnesses; depression; attempted suicide and suicide; substance abuse; miscarriages, and death (Centers for Disease Control and Prevention, 2011: (http://www.cdc.gov/ViolencePrevention/intimatepartnerviolence/index.html, http://www.cdc.gov/violenceprevention/pdf/IPV_factsheet-a.pdf). In addition to barriers in seeking medical care, several key stakeholders in this report have also indicated that some individuals and communities, particularly communities of color, may be reticent to contact the police for assistance unless they are in a life-threatening situation.

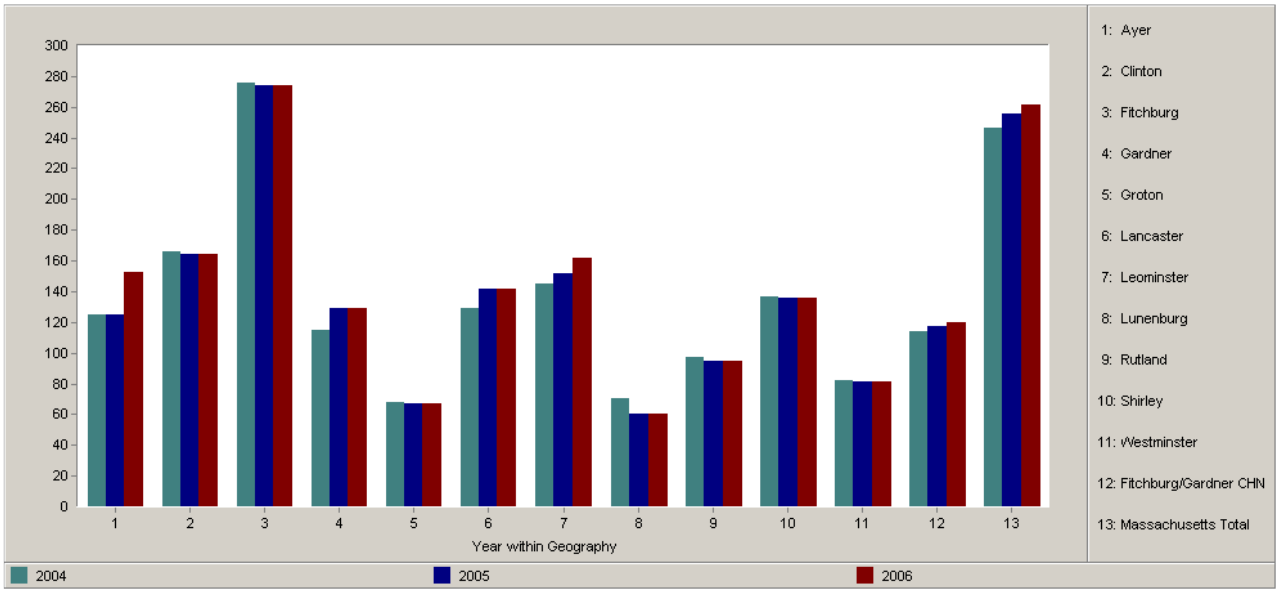
Infectious Diseases

HIV/AIDS

The data available related to HIV/AIDS is only available for individual years and is not available by reporting regions, but only for individual cities/towns. In addition, the rates available are crude rates per 100,000, with no age adjustment. Due to small numbers, only certain communities have meaningful data.

During the 2004 – 2006 time period, the prevalence or number of people with HIV/AIDS in Massachusetts increased. In 2004, there were 15,840 individuals in Massachusetts with HIV/AIDS for a rate of 246 per 100,000. By 2006, that number had increased to 16,892 or 262 cases per 100,000. Fitchburg, with a steady 111 HIV/AIDS cases during this 3 year period was the only community in CHNA 9 to have a rate higher than the State at 274 cases per 100,000.

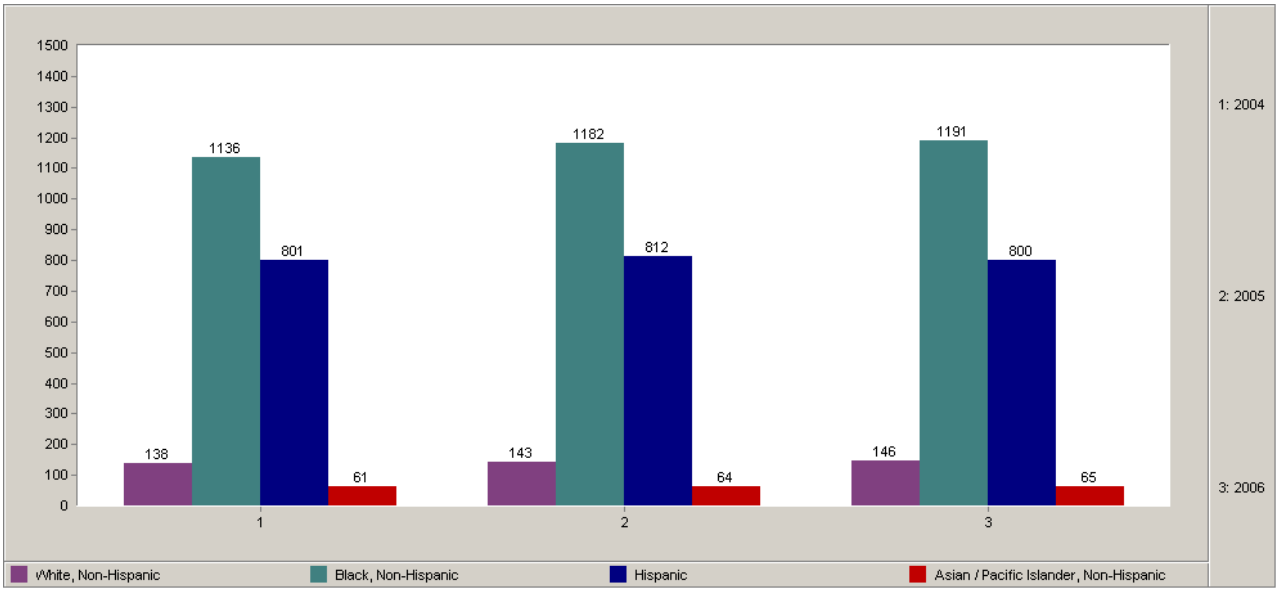
Prevalence of HIV/AIDS – Crude Rate (per 100,000 persons) (2004 – 2006)



Most of the cities/towns had a steady number of individuals with HIV/AIDS in their communities over this three year period. A few of the cities/towns had increases in the number of people with HIV/AIDS between 2004 and 2006, with Leominster reporting 7 additional people. Within CHNA 9, the number of people with HIV/AIDS increased by 16 from 297 to 313 in the 2004 – 2006 time period.

Data on the prevalence of HIV/AIDS by race/ethnicity is available only at the State level. The rate of HIV/AIDS cases per 100,000 varies widely among racial/ethnic groups, with rates for Black, non-Hispanics increasing from 1136 to 1191 cases per 100.000 from 2004 – 2006. During this same time period, the rate of HIV/AIDS cases among Hispanics rose slightly from 800 in 2004 to 812 in 2005, but then fell back to 800 cases per 100,000 in 2006. The HIV/AIDS rate for White, non-Hispanics rose from 138 to 146, while the HIV/AIDS rate for Asians rose from 61 to 65 cases per 100,000 between 2004 and 2006.

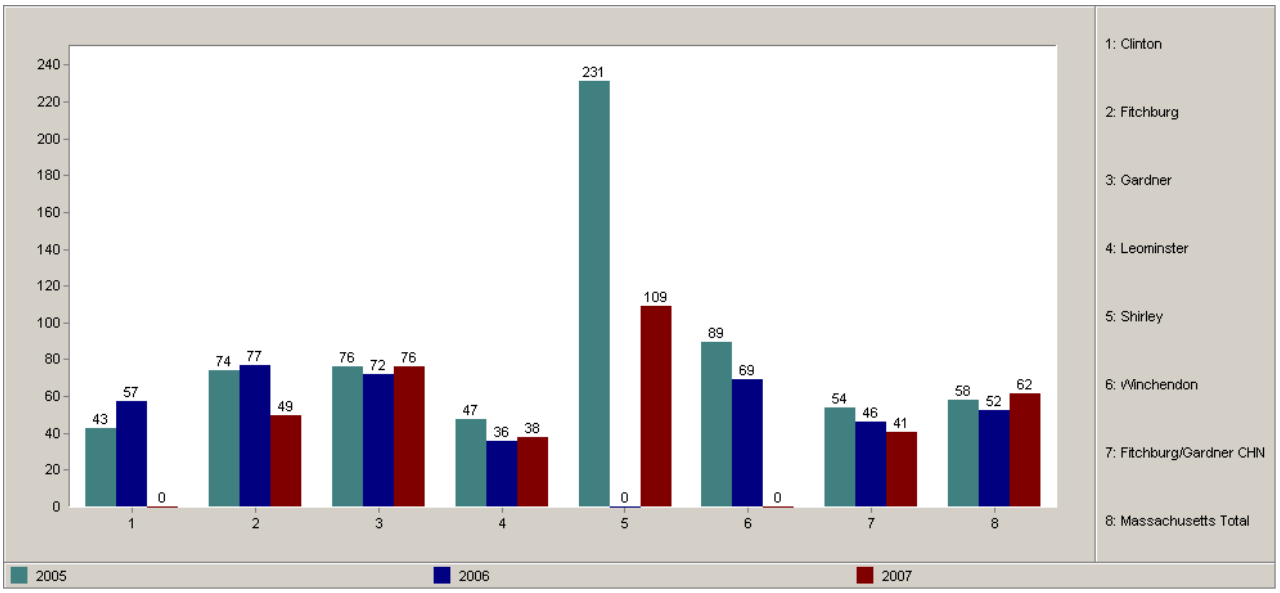
Prevalence of HIV/AIDS in Massachusetts – Crude Rate per (per 100,000 Persons) by Race/Ethnicity (2004 – 2006)



Hepatitis C

Data related to Hepatitis C is only available for individual years and for individual cities/towns. In addition, the rates available are crude rates per 100,000, with no age adjustment. Due to small numbers, only certain communities have meaningful data.

Incidence of Hepatitis C – Crude Rate (per 100,000 Persons) (2005 – 2007)



During the 2005 – 2007 time period, the incidence or number of new cases of Hepatitis C reported in Massachusetts increased. In 2005, there were 3750 new cases of Hepatitis C in Massachusetts for a rate of 58 per 100,000. By 2007, that number had increased to 3967 new cases or 62 cases

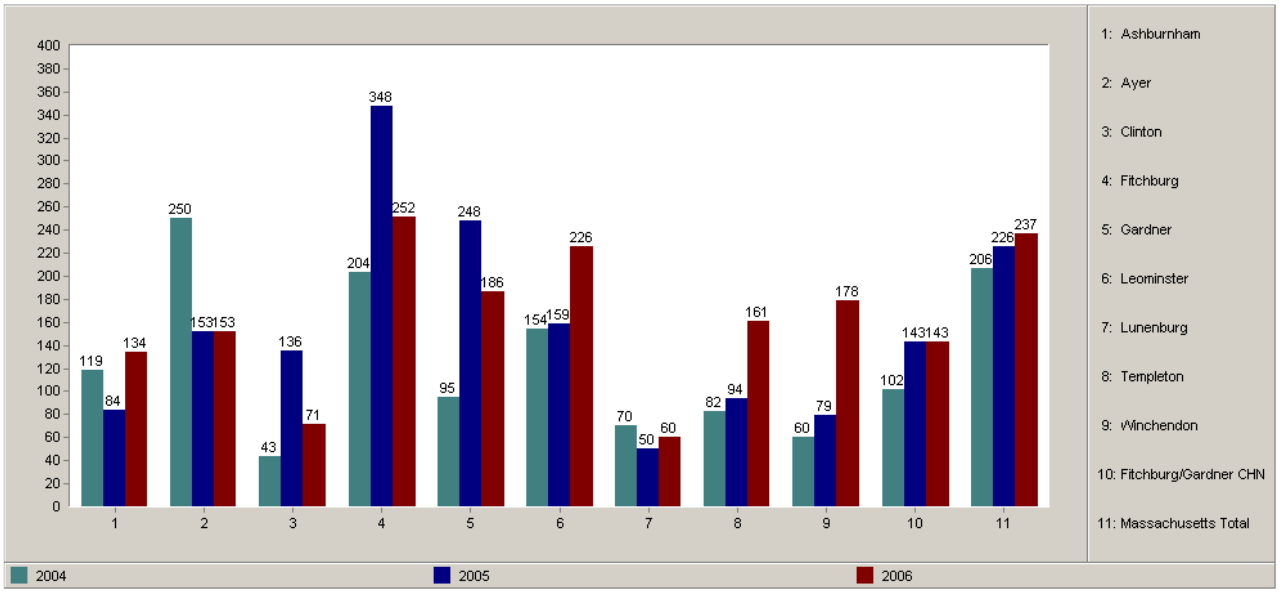
per 100,000. In CHNA 9 the Hepatitis C crude incidence rate decreased during this 3 year period, remaining consistently lower than the State. Shirley reported high Hepatitis C crude incidence rates in 2005 and 2007, but only a very small number of cases in 2006. Fitchburg and Winchendon are notable for the sharp decreases in their crude Hepatitis C incidence rates in 2007.

In the qualitative data, Hepatitis B arose as a concern identified by Lao community members. Hepatitis C arose as significant health concerns, both from community members and from key stakeholders in groups held in the JCOH cities.

Chlamydia

The data related to Chlamydia is only available for individual years and for individual cities/towns. In addition, the rates available are crude rates per 100,000, with no age adjustment. Due to small numbers, only certain communities have meaningful data.

Incidence of Chlamydia – Crude Rate (per 100,000 Persons) (2004 – 2006)

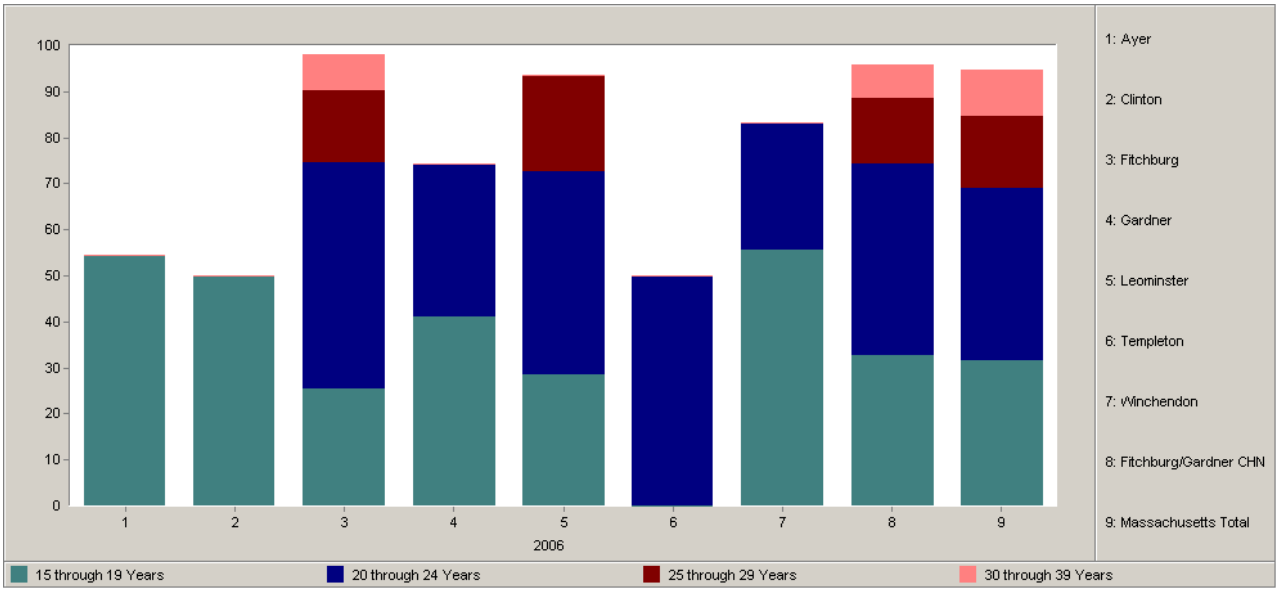


During the 2004 – 2006 time period the incidence or number of new cases of Chlamydia reported in Massachusetts increased. In 2004, there were 13,292 new cases of Chlamydia in Massachusetts for a rate of 206 per 100,000. By 2006, that number had increased to 15276 new cases or 237 cases per 100,000. CHNA 9 reported a Chlamydia crude incidence rate lower than the Commonwealth in all 3 years. Fitchburg and Gardner are notable for a spike in crude Chlamydia incidence rates in 2005. Leominster, Templeton, and Winchendon experienced large increases in crude Chlamydia incidence rates in 2006.

Within Massachusetts in 2006, the distribution of new Chlamydia cases by age group indicated that 37% of the cases were reported in the 20 – 24 age group, followed by 32% in the 15 – 19 age group. The CHNA 9 percentages were slightly higher in these age groups, with 42% of new Chlamydia cases reported in the 20 – 24 age group and 33% in the 15 – 19 age group. Templeton (50%), Fitchburg (49%) and Leominster (44%) all reported the highest percentage of Chlamydia cases among 20 – 24 year old residents. However, Winchendon (56%), Ayer (50%), Clinton

(50%), and Gardner (41%) all reported the highest percentage of new Chlamydia cases in 2006 in the 15 – 19 age group.

Incidence of Chlamydia – Percent by Cases by Age Group (2006)



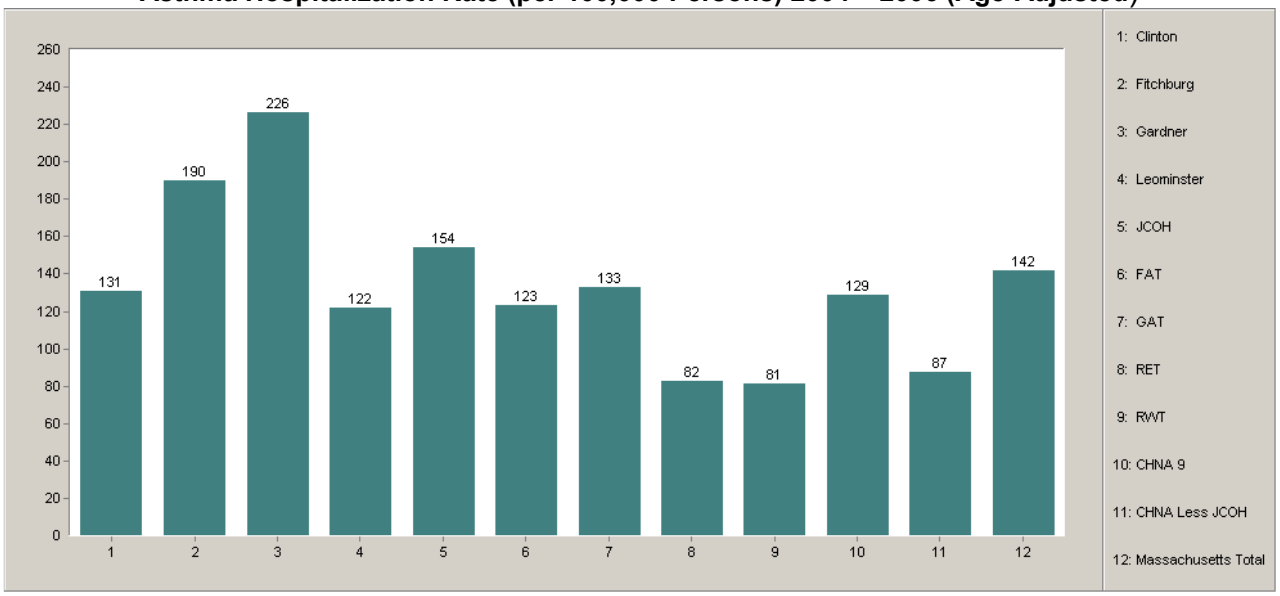
PRIMARY CARE MANAGEABLE HOSPITALIZATIONS

The Commonwealth routinely reports on three hospitalization measures for conditions (asthma, angina and bacterial pneumonia) that are considered to be manageable on an outpatient basis, when given access to high–quality primary care. As a result, higher hospitalization rates for these measures can be used as an indicator of poorer access to appropriate care.

Asthma

During the 2004 – 2006 time period, there were 27,478 asthma hospitalizations in Massachusetts for an age-adjusted rate of 142 per 100,000. Several of the reporting regions in CHNA 9 had age-adjusted asthma hospitalization rates higher than the State, with the highest rates reported in Gardner at 226 and Fitchburg at 190. The JCOH service area, with an age-adjusted asthma hospitalization rate of 154, had a rate that was 1.8 times that of the CHNA Less JCOH. The lowest age-adjusted asthma hospitalization rate was reported in the Rural Western Towns at 81.

Asthma Hospitalization Rate (per 100,000 Persons) 2004 – 2006 (Age-Adjusted)

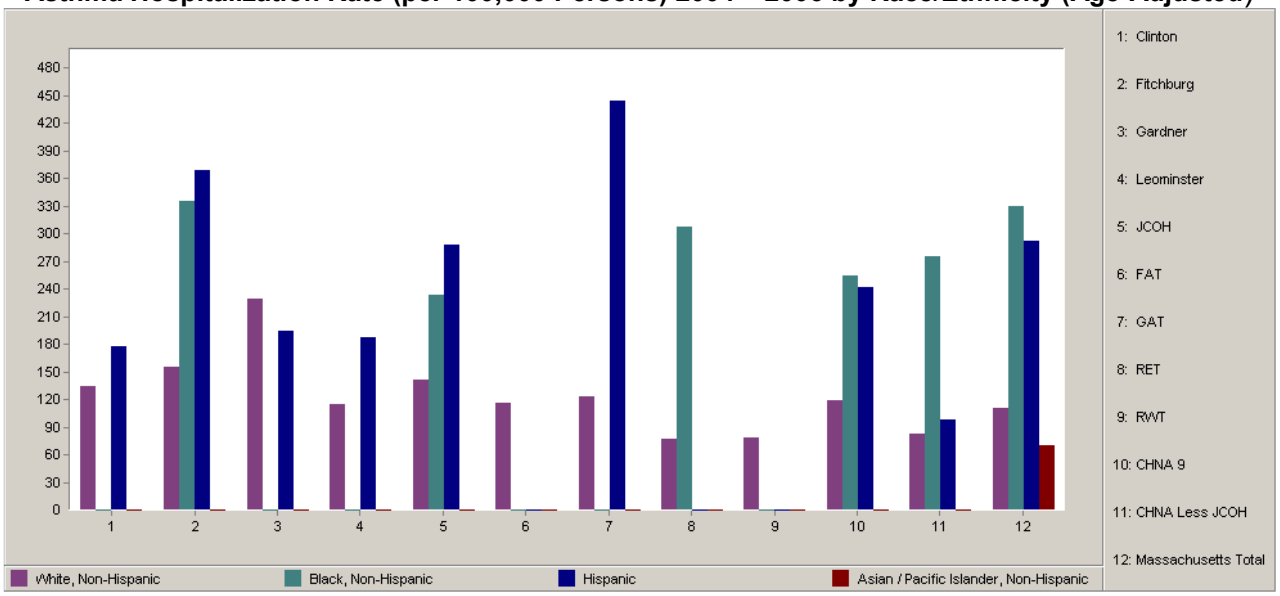


Within the Commonwealth, the age-adjusted asthma hospitalization rate varied by racial/ethnic group, with the highest rates found among Black, non-Hispanics at 329, followed by Hispanics at 292, White, non-Hispanics at 110, and Asians at 70 per 100,000. Blacks within most of the reporting regions fared better than Blacks in the Commonwealth overall, except for Blacks in Fitchburg. In addition, Blacks in the JCOH service area had lower asthma hospitalization rates than Blacks in the CHNA Less JCOH.

On the other hand, Hispanics living in the JCOH service area had an age-adjusted asthma hospitalization rate that was 3 times that of the CHNA Less JCOH area. High asthma hospitalization rates were reported for Hispanics living in the Gardner Area Towns at 444 and in Fitchburg at 369. Gardner reported an age-adjusted asthma hospitalization rate for White, non-Hispanics of 229, twice that of the State.

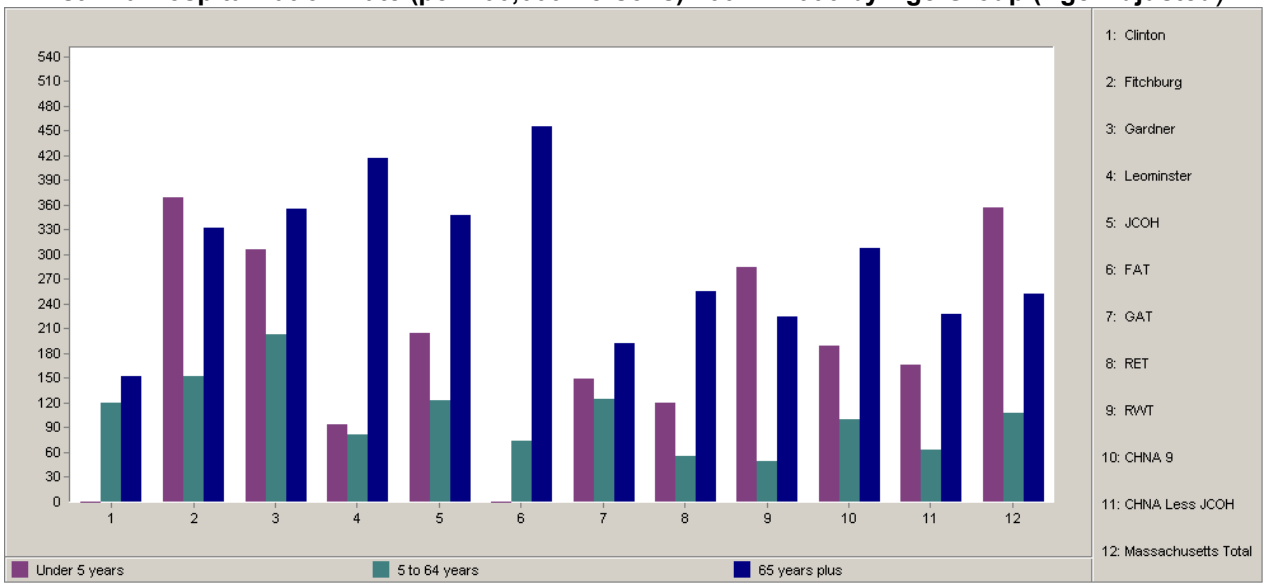
In the qualitative data, asthma was identified as a major health concern, particularly in the African American, Asian and Latino communities. Among these groups, asthma was noted most frequently in the Latino, Lao, and Hmong communities.

Asthma Hospitalization Rate (per 100,000 Persons) 2004 – 2006 by Race/Ethnicity (Age-Adjusted)



Within the Commonwealth, the age-adjusted asthma hospitalization rate varied by age group, with the highest rates found among children less than 5 years old at 356, followed by adults 65 and over at 252 and 5–64 year olds at 108 per 100,000. Fitchburg had a high asthma hospitalization rate for children under 5 at 369, while the Fitchburg Area Towns (455) and Leominster (416) had high asthma hospitalization rates for those 65 and older. Gardner also had a high asthma hospitalization rate for 5 – 64 year olds at 203 per 100,000.

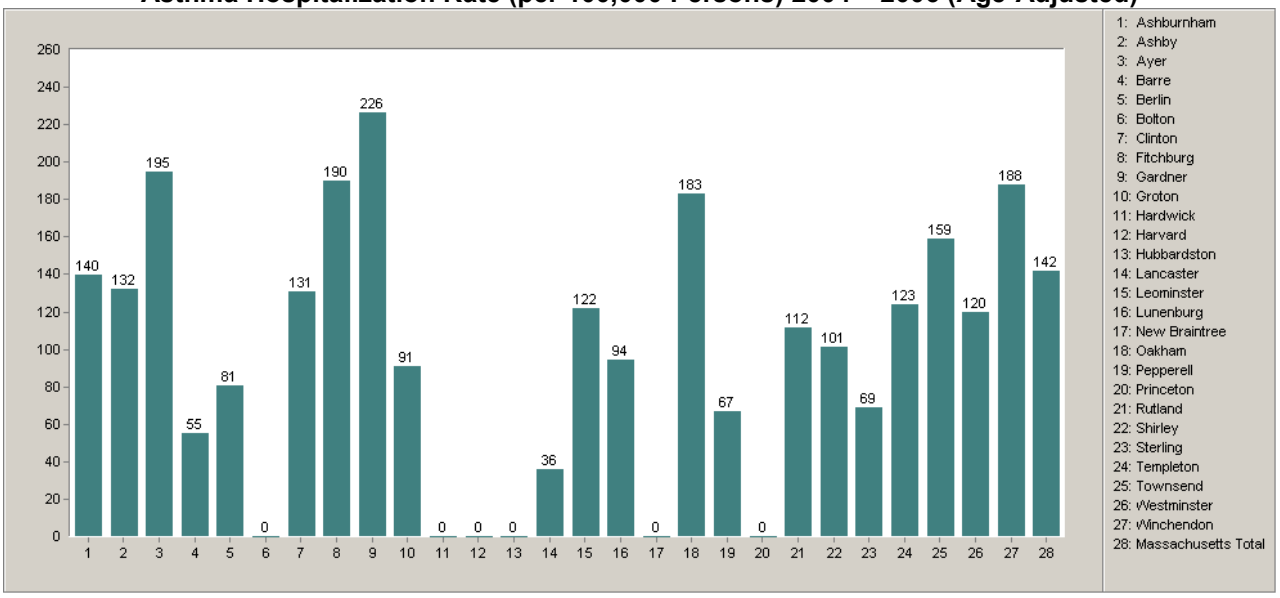
Asthma Hospitalization Rate (per 100,000 Persons) 2004 – 2006 by Age Group (Age-Adjusted)



Healthy People 2010 Goals: ***Under 5 years = 250 per 100,000; 5 – 64 years – 77 per 100,000 65 years plus – 110 per*** **100,000**

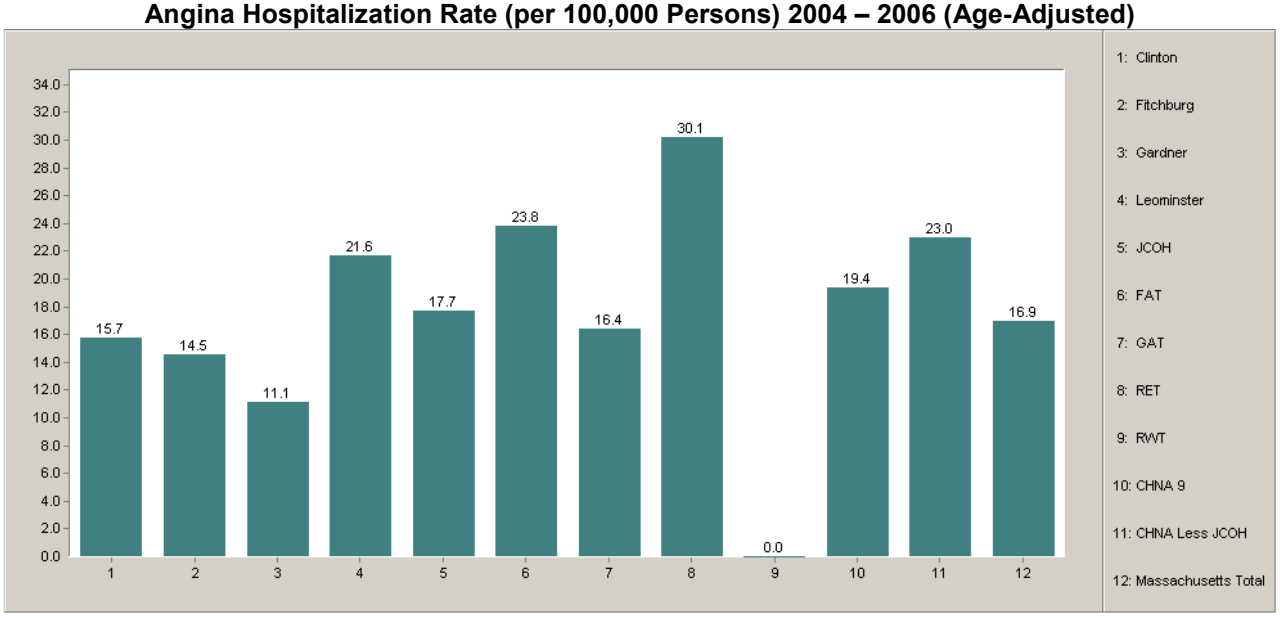
Some of the cities/towns had age-adjusted asthma hospitalization rates greater than the State, with Ayer (195) and Winchendon (188) joining Gardner and Fitchburg among those with the highest rates. The numbers are too small to perform an analysis of age-adjusted asthma hospitalization rates by racial/ethnic group or age group at the city/town level.

Asthma Hospitalization Rate (per 100,000 Persons) 2004 – 2006 (Age-Adjusted)



Angina

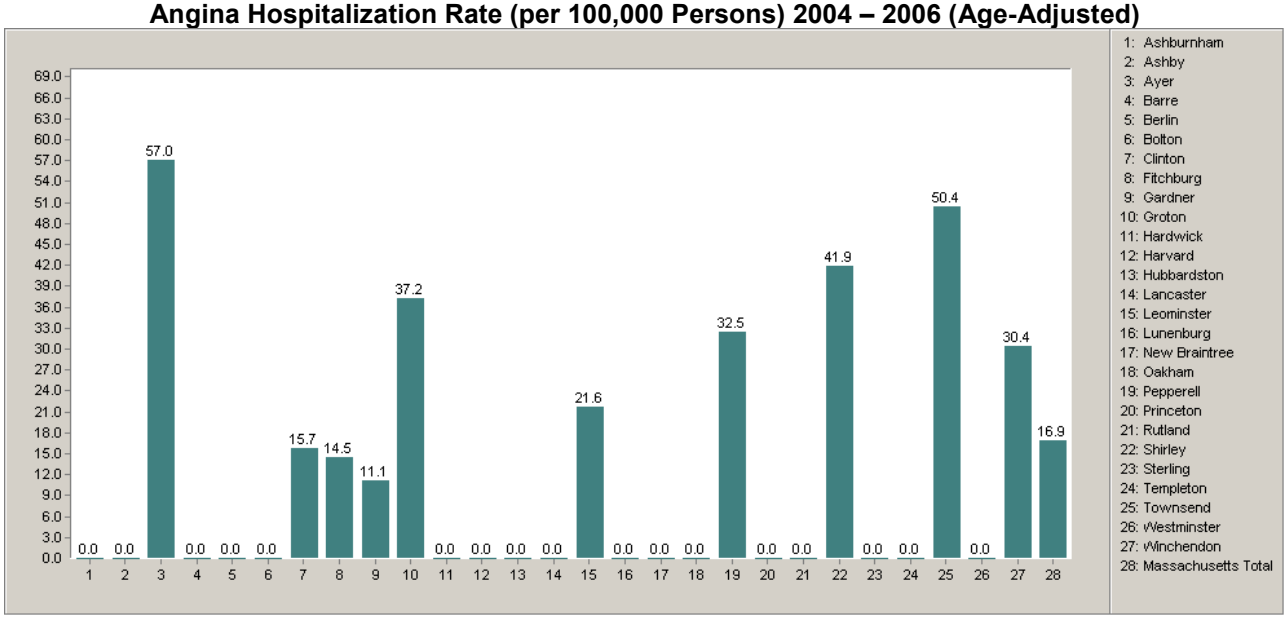
Angina Hospitalization Rate (per 100,000 Persons) 2004 – 2006 (Age-Adjusted)



During the 2004 – 2006 time period, there were 3,586 hospitalizations for angina in Massachusetts for an age-adjusted rate of 16.9 per 100,000. Several of the reporting regions had age-adjusted angina hospitalization rates higher than the State, with the highest rates reported in the Rural Eastern towns at 30.1, followed by the Fitchburg Area Towns at 23.8 and Leominster at 21.6 per 100,000. The lowest age-adjusted angina rates were reported in the Rural Western Towns and in Gardner. The JCOH service area, with an age-adjusted angina hospitalization rate of 17.7 had a rate that was lower than that of the CHNA Less JCOH at 23.

Within the Commonwealth, the age-adjusted angina hospitalization rate varied by racial/ethnic group, with the highest rates found among Black, non-Hispanics at 21.5, followed by Hispanics at 20.3, White, non-Hispanics at 16, and Asians at 4.1 per 100,000. The numbers are too small to perform an analysis of age-adjusted angina hospitalization rates by racial/ethnic group for CHNA 9 or the reporting regions.

Angina Hospitalization Rate (per 100,000 Persons) 2004 – 2006 (Age-Adjusted)

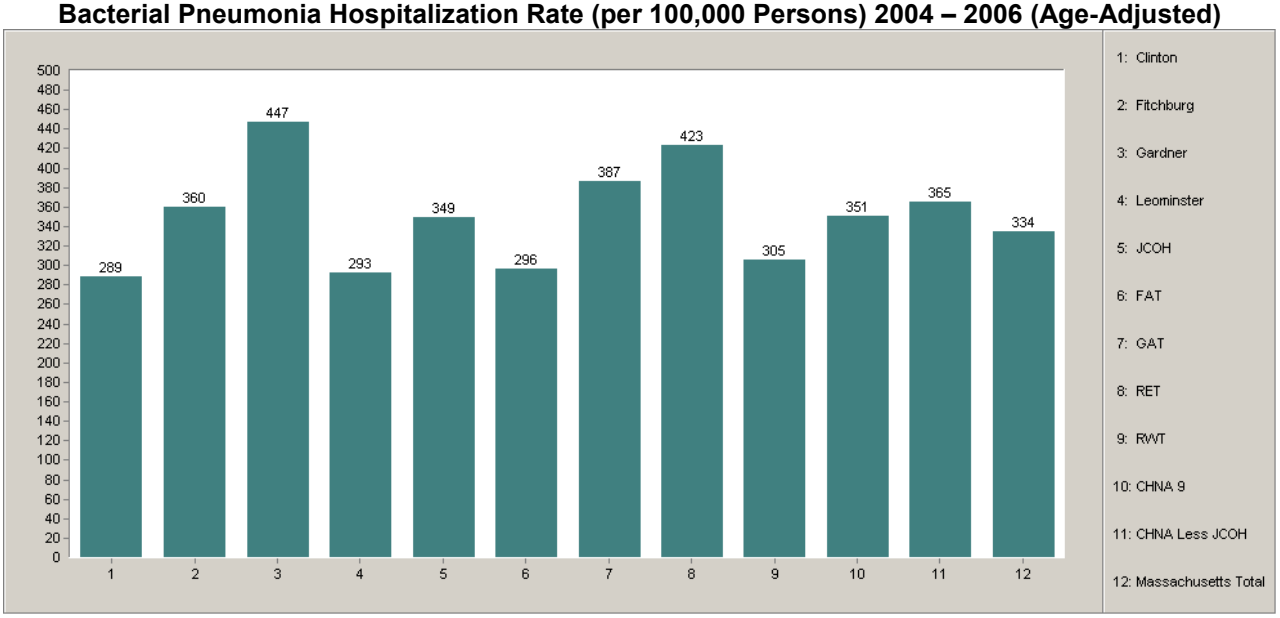


Many of the towns in CHNA 9 had too few angina hospitalizations during the 2004 – 2006 time period to provide meaningful data. However, there were some towns with very high age-adjusted angina hospitalization rates at more than twice the State average, including Ayer at 57, Townsend at 50.4, Shirley at 41.9, and Groton at 37.2 per 100,000.

Bacterial Pneumonia

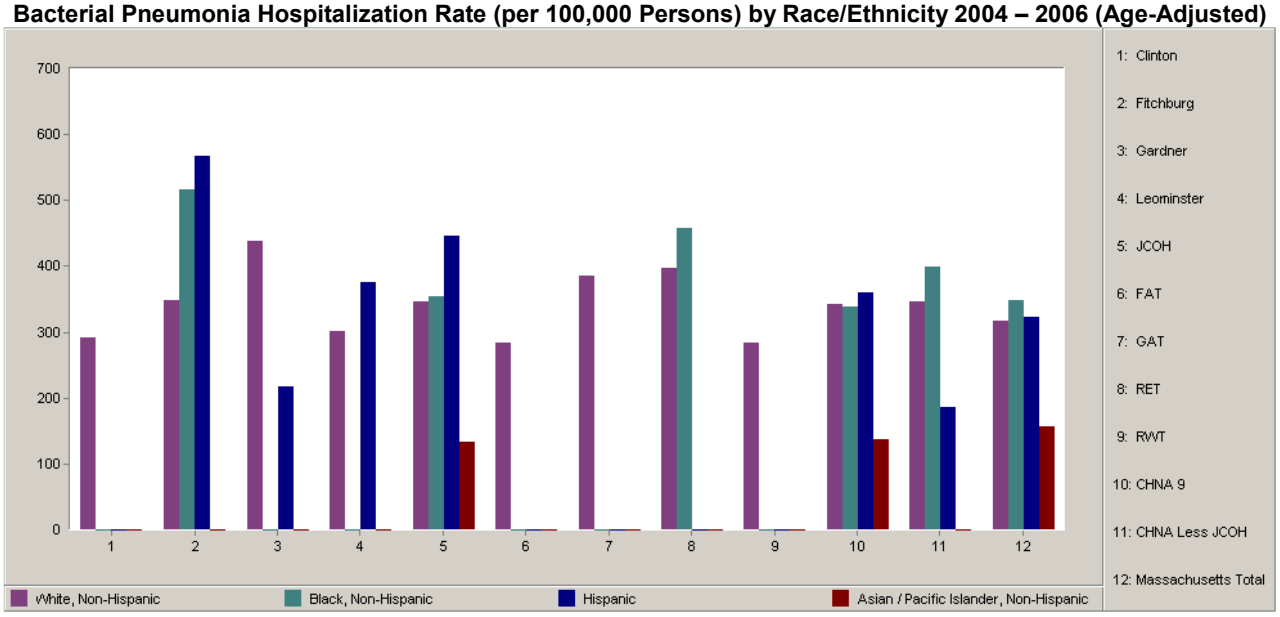
During the 2004 – 2006 time period, the age-adjusted bacterial pneumonia hospitalization rate in Massachusetts was 334 per 100,000. Several of the reporting regions had age-adjusted bacterial pneumonia hospitalization rates higher than the State, with the highest rates reported in Gardner at 447 and the Rural Eastern Towns at 423. The lowest age-adjusted bacterial pneumonia rates were reported in Clinton at 289 and Leominster at 293. The JCOH service area, with an age-adjusted bacterial pneumonia hospitalization rate of 349 had a rate that was lower than that of the CHNA Less JCOH at 365.

Bacterial Pneumonia Hospitalization Rate (per 100,000 Persons) 2004 – 2006 (Age-Adjusted)



Within the Commonwealth, the age-adjusted bacterial pneumonia hospitalization rate varied by racial/ethnic group, with the highest rates found among Black, non-Hispanics at 349, followed by White, non-Hispanics at 323, Hispanics at 317,and Asians at 157 per 100,000. Fitchburg had very high age-adjusted bacterial pneumonia hospitalization rates of 567 for Hispanics, 517 for Black, non-Hispanics and 347 for White, non-Hispanics. Gardner had the highest age-adjusted bacterial pneumonia hospitalization rate for White, non-Hispanics at 438.

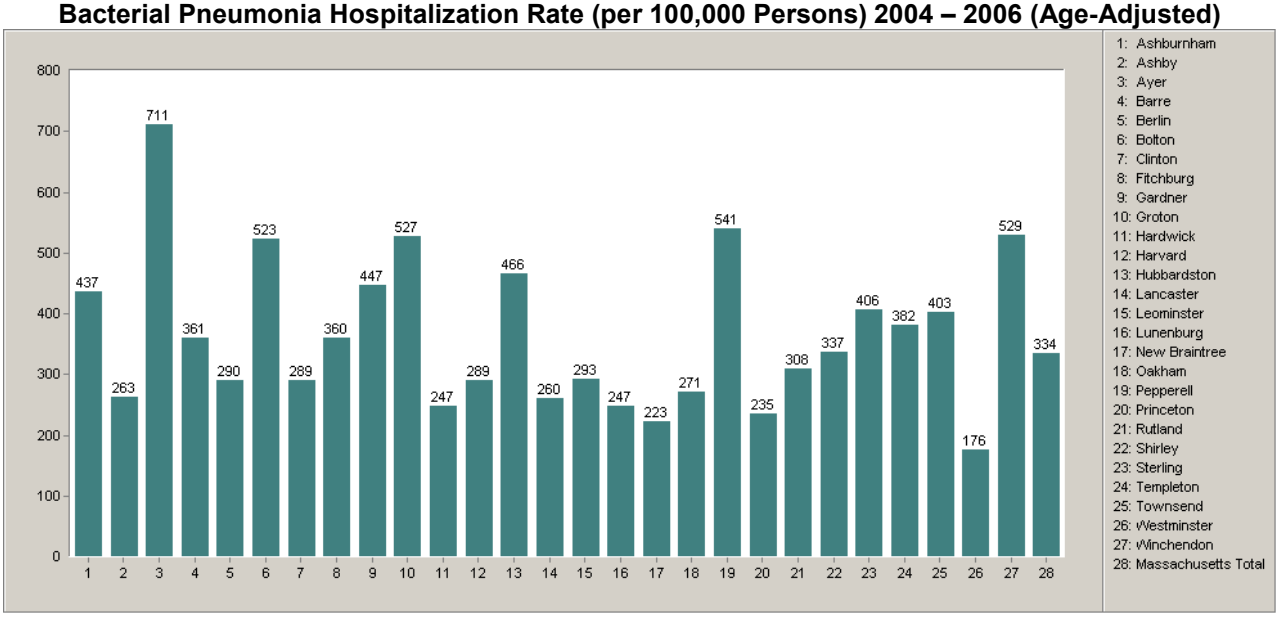
Bacterial Pneumonia Hospitalization Rate (per 100,000 Persons) by Race/Ethnicity 2004 – 2006 (Age-Adjusted)



Many of the cities/towns had age-adjusted bacterial pneumonia hospitalization rates greater than the State, with Ayer (711), Pepperell (541) and Winchendon (529) reporting the highest rates. The lowest bacterial pneumonia hospitalization rates were found in Westminster (176) and New

Braintree (223). The numbers are too small to perform an analysis of age-adjusted bacterial pneumonia hospitalization rates by racial/ethnic group or age group at the city/town level.

Bacterial Pneumonia Hospitalization Rate (per 100,000 Persons) 2004 – 2006 (Age-Adjusted)



MENTAL HEALTH AND SUBSTANCE ABUSE

Overview

In March 2009, a report, entitled, *Mental Health and Substance Abuse Needs Assessment of North Central Massachusetts* was published. This report was commissioned by the Joint Coalition on Health of North Central Massachusetts and was prepared by DMA Health Strategies. Some of the data in this report was specific to the cities and towns in the JCOH service area. However, some of the measures were only available for a larger service area, such as North Central Massachusetts or the Commonwealth as a whole. In addition, some of the data collected for the JCOH service area was also collected for the CHNA 9 service area.

Whenever possible, this report will include data at the reporting region level. However, for the cases in which data is only available at the North Central Massachusetts/Greater JCOH Area or at the Massachusetts level, the charts and analyses from the DMA Health Strategies report referenced above will be repeated here.

As noted at several points in this report, adults and youth (although adults were more extensively interviewed) repeatedly identified "stress" and depression as central concerns impacting their health and well being. In many instances, although not exclusively, and varying across groups, individuals connected their stress and depression to worsening economic conditions.

Children and Youth – Mental Health

National prevalence studies consider the full range of mental health and substance abuse conditions. They have found that approximately 21% of children and youth from ages 9 to 17 would have experienced a mental health or substance abuse problem during the prior year, and that approximately 9% percent would have had a Serious Emotional Disturbance (SED).[9] The National Survey on Drug Use and Health found that 8% of youth ages 12 to 17 nationally reported experiencing at least one major depressive episode.

According to the DMA Health Strategies report, the *Youth Risk Behavior Survey* provides information from youth about their behavior and reflects the current strengths and challenges of youth in our communities. The *Youth Risk Behavior Survey* includes items on suicidality, depression, and self-injurious behavior. Although youth participate in the survey in a school setting, the survey results reflect what is happening in our communities. The results of the local, regional, Massachusetts, and the United States *Youth Risk Behavior Surveys* consistently indicate the relative size of the population of youth at most risk: those actually engaging in risk behavior.

The 2008 *Youth Risk Behavior Survey* conducted in the school districts which comprise the focus area of this assessment indicates that during the 12 months prior to the survey, more than one quarter of high school youth had experienced significant depressive symptoms. Specifically, 27.1% of area high school youth had felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing usual activities. As shown in the chart below, the percent of youth in

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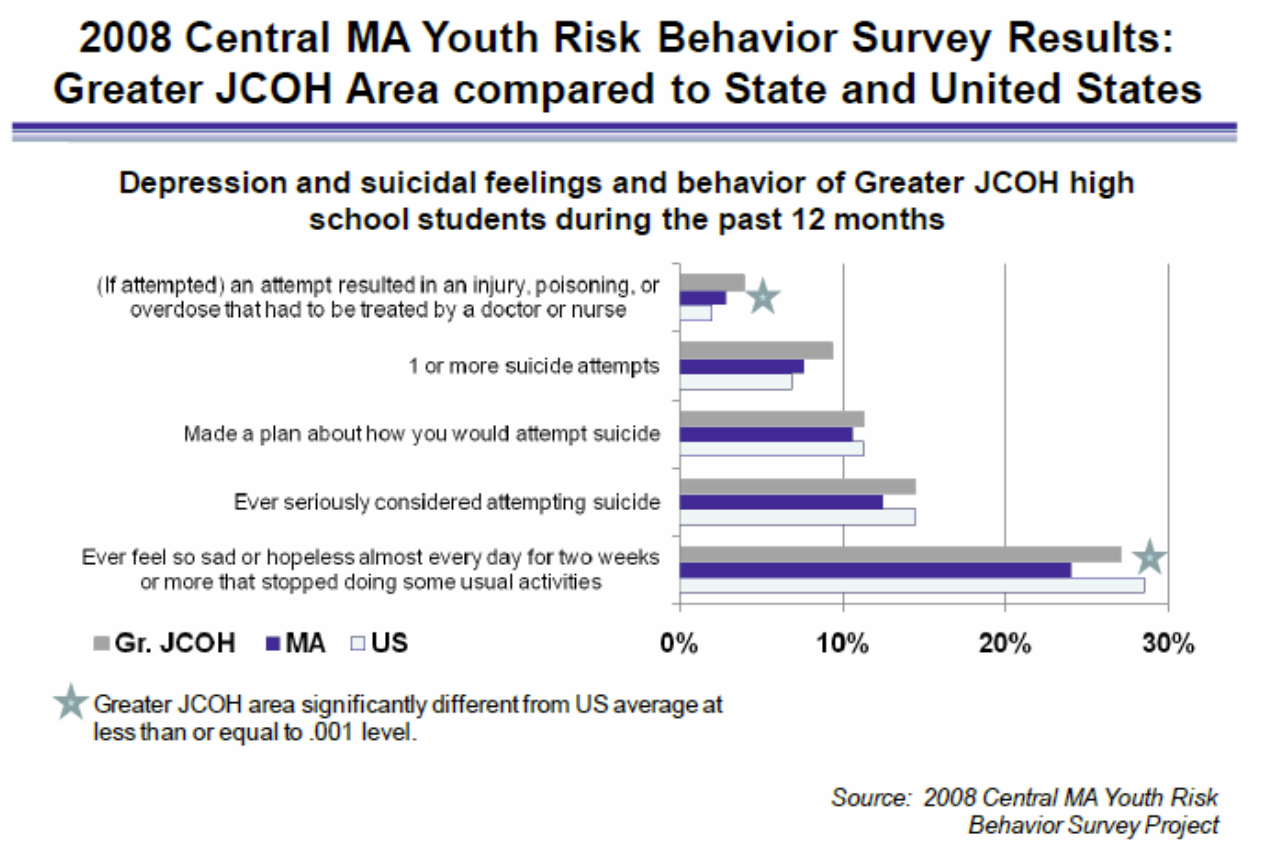
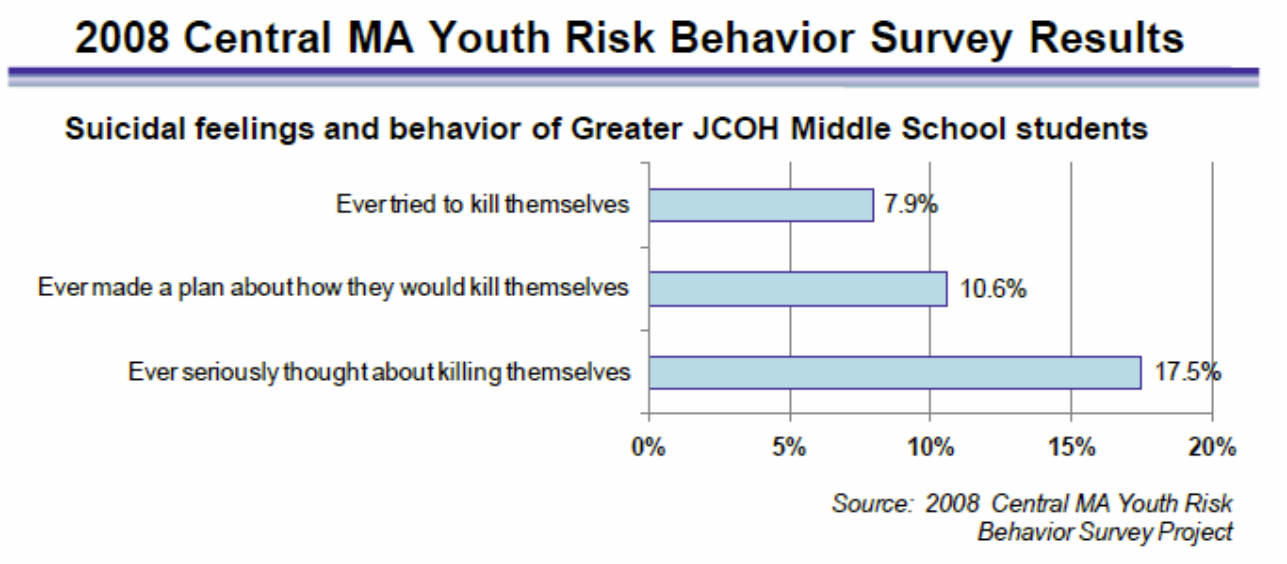
[9]Serious emotional disturbance is defined as children who have a diagnosed mental health problem which has or is likely to affect them for a year or more and which causes the child difficulty in daily functioning in the home, school, and community

the region experiencing these depressive symptoms is significantly less than their peers in the United States. However, the percent of youth in the region experiencing depressive symptoms is greater than in the State.

The *Youth Risk Behavior Survey* reported that 14.9% of area high school youth had suicidal thoughts and that 11.8% had suicide plans during the 12 months prior to the survey. These numbers are consistent with national figures. That is, during the 12 months prior to the survey, a similar percentage of high school youth in the region and across the United States seriously considered and/or planned suicide.

According to the *Youth Risk Behavior Survey*, 9.4% of area high school youth reported attempting suicide during the 12 months prior to the survey. This percentage was greater than the percentage of youth across the United States who attempted suicide (6.9%) and the difference approached significance. Furthermore, 4% of area high school youth attempted suicide in such a way that they needed medical treatment following the attempt. This percentage is higher than State and national figures. No tests of significance were completed on the area and Massachusetts data.



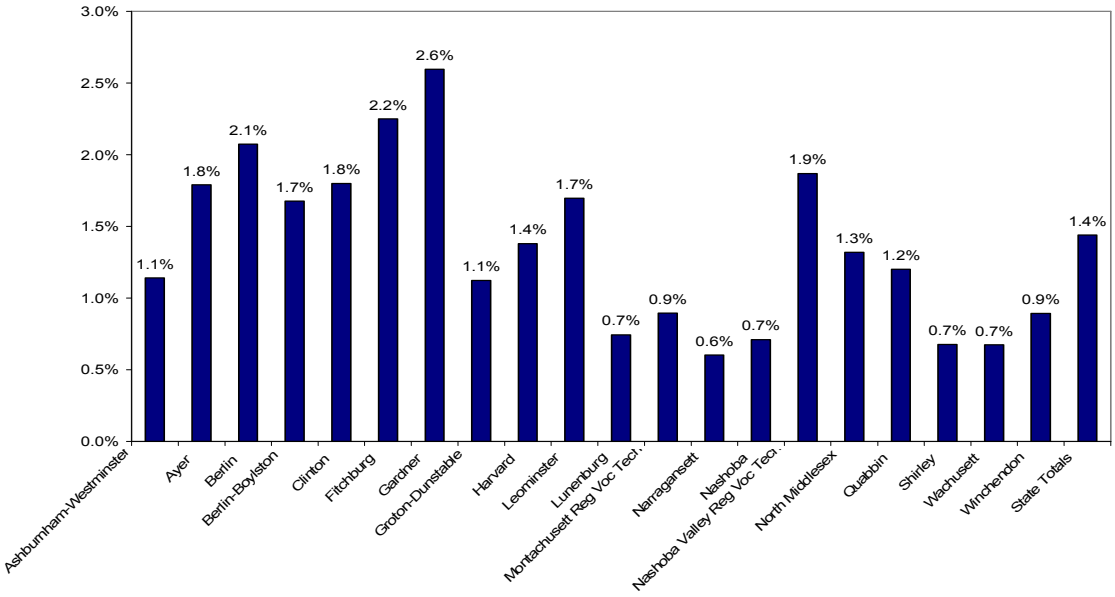


Among the middle school youth in the area, 17.5% indicated they had ever seriously thought about killing themselves, 10.6% indicated they had ever made a plan about how they would kill themselves, and 7.9% reported they had ever tried to kill themselves.

While the youth sample size in the qualitative data was limited, youth interviewed, as well as selected key stakeholders, did express concern about the level of stress that many youth were experiencing. Some related it again to poor living conditions and a constant worry about economic survival of their families. Several key stakeholders did express concern about the suicide risk of the youth in the region and of youth in general.

Special Education for Emotional Disability

Students in Special Education for Emotional Disabilities in the 2008-2009 School Year as a Percent of Total Enrollment



There were 682 children enrolled in Special Education on the basis of an emotional disability in the public school districts within CHNA 9 in the 2008 – 2009 school year. They represented 1.3% of total school enrollment, slightly lower than the State average of 1.4%. Gardner had the highest percent of students enrolled in special education due to emotional disabilities at 2.6%, twice that of CHNA 9 as a whole. Fitchburg at 2.2% and Berlin at 2.1% also had high percentages. The lowest percentages of students enrolled in special education due to emotional disabilities were reported in Narragansett at 0.6% and in Lunenburg, Nashoba, Shirley and Wachusett, all at 0.7%.

According to the *Mental Health and Substance Abuse Needs Assessment of North Central Massachusetts, "*It is difficult to interpret differences in rates of children in this category. In addition to differences in the needs of the student body, they could be due to differences in rate of parents seeking special education services, differences in schools' administration of special education designations, and differences in how a child's condition is classified. However, it does not appear that children in the region lack access to these services in comparison to the rest of the Commonwealth."

Children and Youth: Substance Abuse

Prevalence. As noted in the *Mental Health and Substance Abuse Needs Assessment of North Central Massachusetts,* and according to the 2008 *Youth Risk Behavior Survey*, high school youth in North Central Massachusetts engaged in the use of alcohol at rates consistent with, or less than, their peers in the United States. As shown in the following figure, the percentage of area high school youth reporting current use of alcohol is lower than the percentage of youth across the nation reporting current use (area youth = 42.5%, United States youth = 44.7%.) and the Commonwealth (46.2%). A majority of area youth indicated that at some time in their lifetime they had used alcohol (75.9%), which is statistically consistent with lifetime use among their peers in the United States (75.0%), and higher than the lifetime use of their peers in Massachusetts (72.5%). A significantly higher percentage of area high school youth indicated current marijuana use and lifetime use of other drugs than their peers in the United States. One quarter (25.1%) of high school youth in the area reported current use of marijuana, while 19.7% of their peers in the United States reported current use of marijuana.

Ten percent (10.3%) of area high school youth reported ever having tried cocaine, 6.9% reported ever having tried heroin, 7.3% reported ever having tried methamphetamine, 12.1% reported ever having tried ecstasy, 6.4% reported ever having used steroids without a doctor's prescription, and 5.9% reported ever having injected an illegal drug. Each of these numbers is significantly higher than the number of youth reporting use at the Commonwealth and national levels.

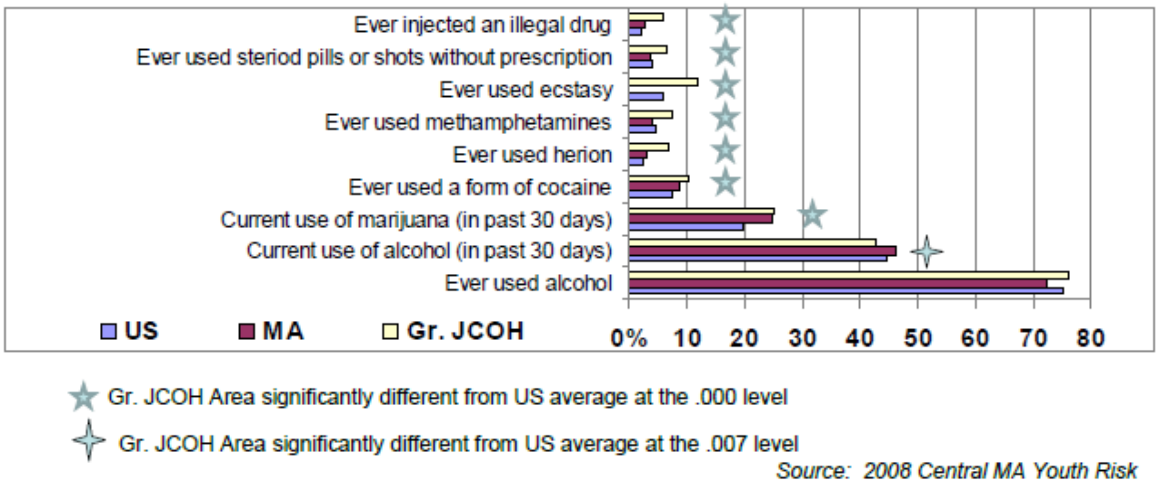
Youth and adults both raised concerns about the impact of drugs on youth, family and upon community safety.

> *"Yeah, there's drugs, weed, coke, crack, heroin, meth, Oxycontin. Nyquil… they drink a lot of it…for some people, that's their life." (Youth)*

> *"Families are trying hard to get their kids away from drugs and alcohol…but they are working so much, that they can't always take good care of other members of the family because of their work…we need more role models." (General Population)*

2008 Central MA Youth Risk Behavior Survey Results: Greater JCOH Area compared to the United States

Substance use by Greater JCOH Area high school students



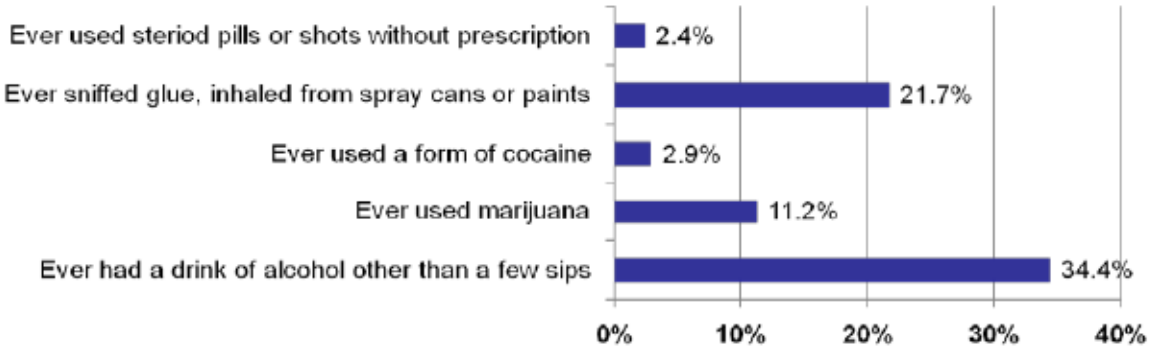
Source: 2008 Central MA Youth Risk Behavior Survey Project

Among middle school students in the area, 34.4% indicated they had ever had a drink of alcohol other than a few sips. Eleven percent (11.2%) had ever used marijuana (compared with 8% in Massachusetts); 2.9% had ever used cocaine including powder, crack or freebase; 21.7% had ever sniffed glue, breathed the contents of spray cans, or inhaled any paints; and 2.4% had ever used steroid pills or shots without a doctor's prescription (compared to 6% in Massachusetts).

Among middle school students in the area, the majority (63.6%) had never used alcohol. Thirty-four percent (34.4%) indicated they had ever had a drink of alcohol other than a few sips. A large majority of middle school students reported no use in their lifetime of marijuana (88.8%), cocaine (97.1%), and the non prescribed/ illegal use of steroids (97.6%). Eleven percent (11.2%) had ever used marijuana; 2.9% had ever used cocaine including powder, crack or freebase; 21.7% had ever sniffed glue, breathed the contents of spray cans, or inhaled any paints; and 2.4% had ever used steroid pills or shots without a doctor's prescription.

2008 Central MA Youth Risk Behavior Survey Results

Alcohol and Drug Use of Greater JCOH Middle School Students



Source: 2008 Central MA Youth Risk Behavior Survey Project

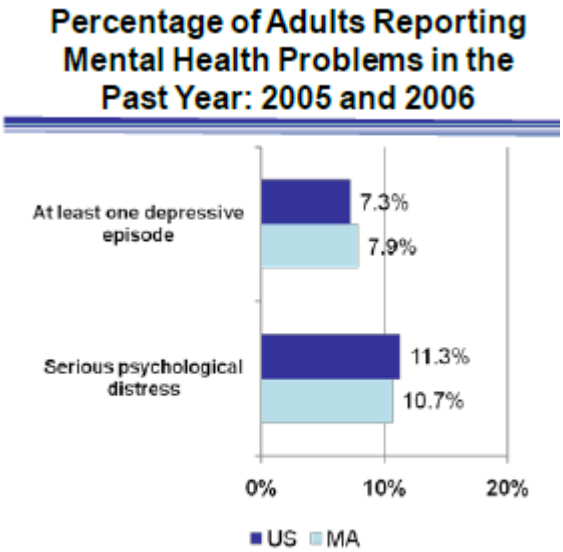
In the qualitative data of this study, substance abuse (or use) was noted with some frequency by both adults and youth. Participants spoke of concerns related to substance use for both adults and youth. Youth often linked adult substance use to economic conditions, resulting in further stress in the family. Youth did also identify the use and sale of drugs in communities as posing a public safety risk, and one that interfered, at times, with their use of public recreational areas.

Adults: Mental Health

Prevalence

According to a major national study, the *National Comorbidity Survey Replication*, 26.2% of adults suffer from a diagnosable mental disorder in a given year. Many people suffer from more than one mental disorder at a given time. Nearly half (45 percent) of those with any mental disorder meet criteria for two or more disorders (including substance abuse). About six percent suffer from a serious mental illness, which causes significant difficulties in functioning. Mental disorders are the leading cause of disability in the U.S. and Canada for ages 15 to 44.

As seen in the following chart, the National Survey on Drug Use and Health found past year rates of serious psychological disturbance (a new definition corresponding roughly to serious mental illness) of 10.7% in Massachusetts, slightly lower than the US rate of 11.3%. However, it found 7.86% of adults in Massachusetts had experienced a major depressive episode in the prior year, slightly higher than the national rate of 7.25%.



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2005 and 2006.

As noted earlier in the focus groups and key informant interviews, the discussion of "stress" and depression permeated the data. Participants often linked stress with economic conditions, while at other points, stress, and mental health conditions were discussed independently.

While the identification of stress and depression was a consistent theme in the qualitative data, the qualitative data also revealed differential expressions of stress and depression across racial and ethnic groups. African American adults reported stress and depression most frequently, citing

social isolation, experiences of racism, poor physical health, and economic stressors as contributing to their experience of stress and depression.

Asians in the study area also described a high degree of stress and depression, relating their distress to social, cultural, and linguistic isolation, limited community resources, and experiences of trauma during their refugee experience.

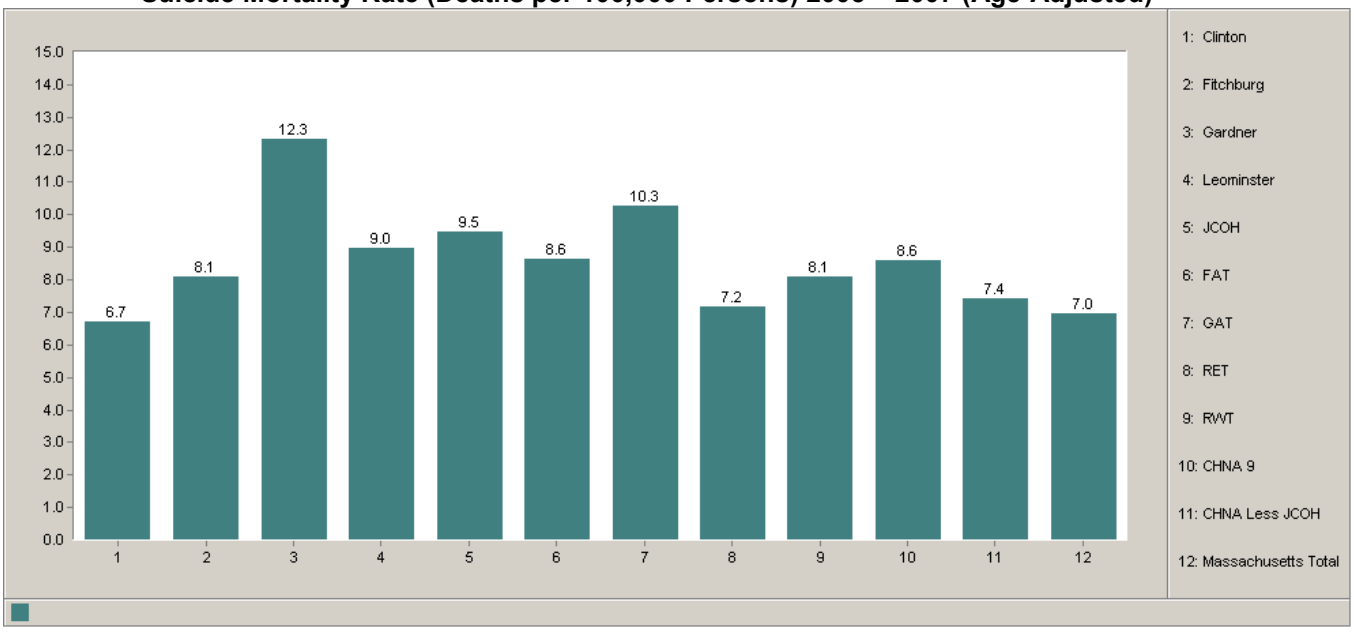
In the course of the qualitative data gathering, community members and key informants repeatedly expressed concern about the frequency of completed suicides in their communities. As noted in this report, it is important to be aware that cultures express distress in different manners, including the expression of suicidal ideation.

Suicide Mortality Rate

In Massachusetts there were 1410 deaths due to suicides in the 2005 – 2007 timeframe, for an annual age-adjusted Suicide Mortality Rate of 7 per 100,000. All of the reporting regions in CHNA 9, except Clinton, exhibited a Suicide Mortality Rate higher than the State during this time period. Gardner had the highest Suicide Mortality Rate at 12.3, followed by the Gardner Area Towns at 10.3 and Leominster at 9.

Within the Commonwealth, the age-adjusted Suicide Mortality Rate varied among racial/ethnic groups during this time period, with a high of 7.5 for White, non-Hispanics, followed by rates of 4.3 for Black, non-Hispanics, 4.2 for Hispanics, and 4.0 for Asians. The numbers are too small to provide a meaningful break out of data by race/ethnicity or by city/town.

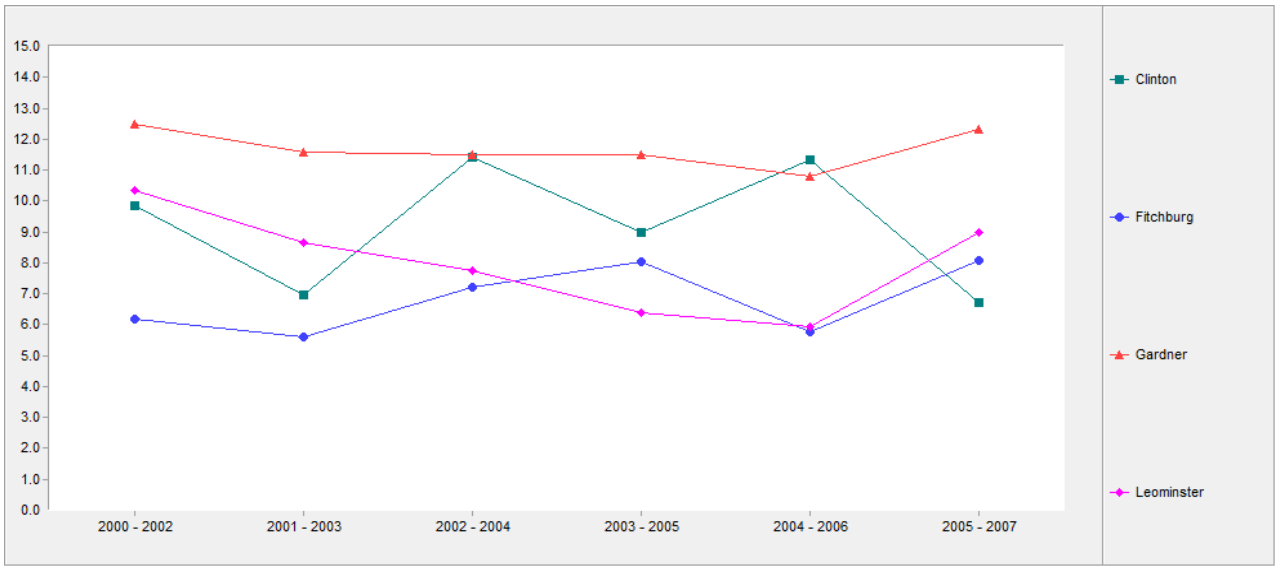
Suicide Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



When the age-adjusted Suicide Mortality Rates are examined as trends between the 2000 and 2007 time periods using 3 year moving averages, the rates for Gardner appear to be consistently on the high side, while the rates for Clinton and Fitchburg were more variable. Leominster's

Suicide Mortality Rate appeared to be on a downward trend, but then rose sharply in the 2005 – 2007 time period.

Trends in Suicide Mortality Rate (Deaths per 100,000 Persons) 2000 – 2007 (Age-Adjusted) Moving 3 Year Averages



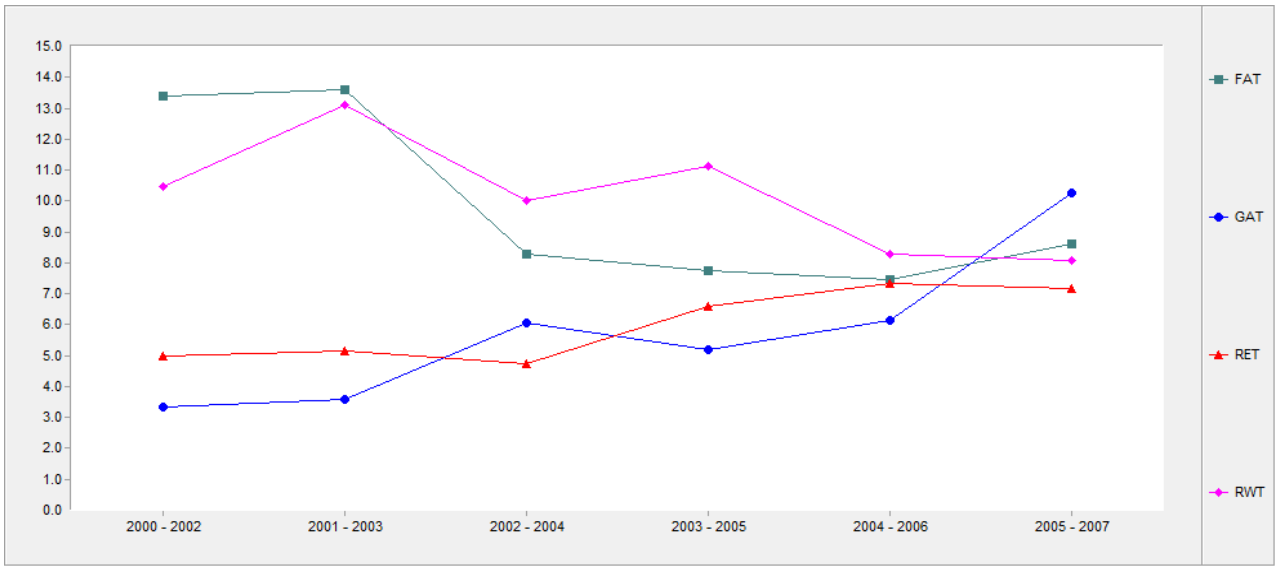
The Fitchburg Area Towns had a very high Suicide Mortality Rate in the 2000 – 2003 timeframe, which then appears to have fallen off rapidly before leveling off. Conversely, the Gardner Area Towns appear to have had a very low Suicide Mortality Rate in the 2000 – 2003 timeframe, which then appears to have risen, slowly at first, before accelerating in the 2004 – 2007 time period. The Rural Western towns experienced a downward trend in Suicide Mortality Rates, while the Rural Eastern Towns have seen somewhat of an upward trend.

In the focus groups, and in the individual interviews, concern about suicide, and self inflicted injuries was frequently expressed. As discussed throughout this document, the qualitative data repeatedly identified issues of "stress" and depression as serious factors negatively impacting their health. Adults and youth expressed concern about the incidence of suicide. Several individuals described suicidal ideation related to a sense of increasing stress, deteriorating economic conditions, and a feeling of getting overwhelmed and "giving up."

> *"You don't know how you will pay your bills, gives me stomachache, diarrhea, anxiety, rage, etc. I have a difficult economic situation it makes you want to commit suicide for a small problem that escalates." (Latino)*

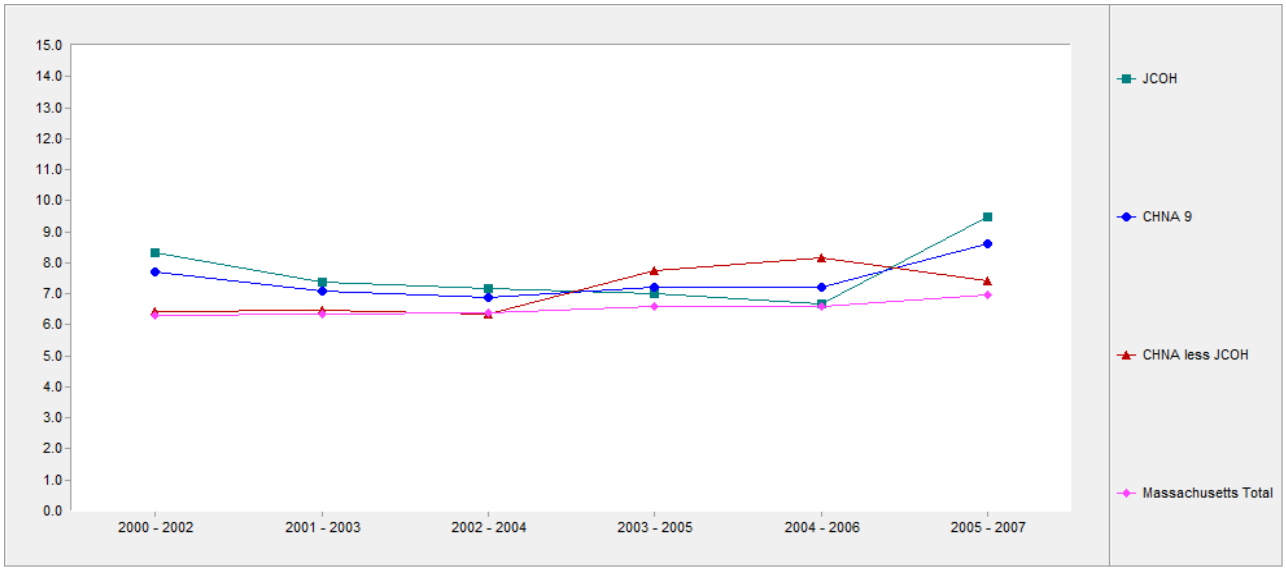
In the qualitative data gathering, there were variations in the expressions of distress articulated. The importance of being attuned to cultural variations of a person's expression of distress arose in the qualitative data. For example, a Hmong community member described a growing concern for a young friend who asked him to help purchase him a suit. He explained to the interviewer that in his culture, this request indicated that his young friend was considering committing suicide.

Trends in Suicide Mortality Rate (Deaths per 100,000 Persons) 2000 – 2007 (Age-Adjusted) Moving 3 Year Averages



The age-adjusted Suicide Mortality Rate in Massachusetts has remained relatively steady over the period from 2000 – 2007. Both the JCOH and CHNA 9 experienced an increase in Suicide Mortality Rates during this period.

Trends in Suicide Mortality Rate (Deaths per 100,000 Persons) 2000 – 2007 (Age-Adjusted) Moving 3 Year Averages

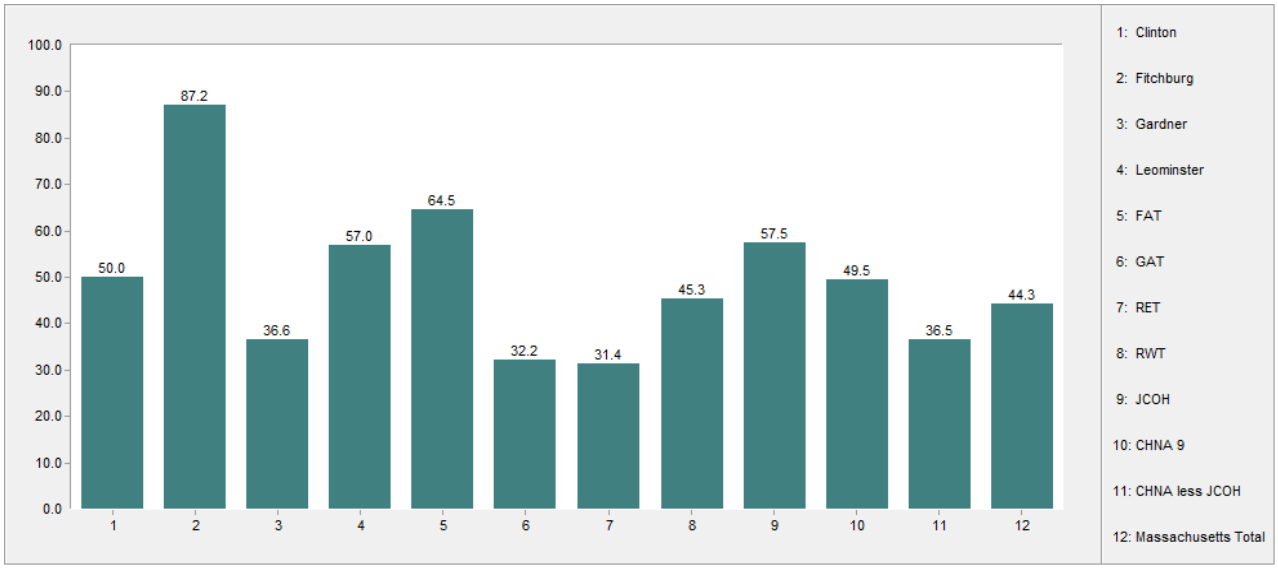


Self-Inflicted Injuries

As noted in the *Mental Health and Substance Abuse Needs Assessment of North Central Massachusetts,* "Self-inflicted injuries are those judged by hospital staff to be an intentional effort to hurt or kill oneself. This excludes unintentional overdoses of either prescription or illegal drugs." In Massachusetts there were 8564 hospital discharges for self-inflicted injuries in the 2005 – 2007 timeframe, for a rate of 44.3 per 100,000. Several of the reporting regions in CHNA 9 had self-inflicted injury hospital discharge rates higher than the State during this time period. Fitchburg had the highest rate at 87.2 (almost double that of the Commonwealth), followed by the Fitchburg Area Towns at 64.5 and Leominster at 57. The JCOH service area reported a higher self-inflicted injury hospital discharge rate (57.5) than did CHNA 9 (49.5) and the CHNA Less JCOH (36.5)

Fitchburg's high self-inflicted injury rates are matched with more moderate suicide rates. However, both Gardner and the Gardner Area towns experienced low rates of self- inflicted injuries, but high suicide rates.

Hospital Discharge Rate (Discharges per 100,000 Persons) for Self-Inflicted Injuries (2005 – 2007)

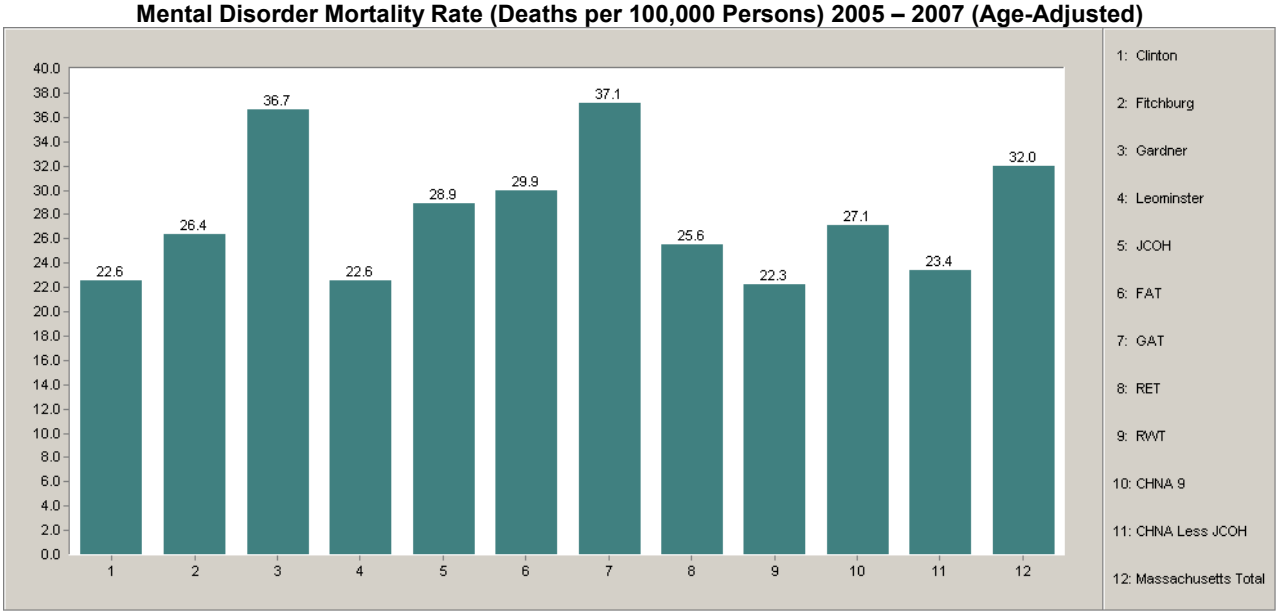


Mental Disorder Mortality Rate

In Massachusetts there were 7837 deaths due to Mental Disorders in the 2005 – 2007 timeframe, for an age-adjusted Mental Disorder Mortality Rate of 32 per 100,000. Two of the reporting regions in CHNA 9 exhibited Mental Disorder Mortality Rates higher than the State during this time period. The Gardner Area Towns had the highest Mental Disorder Mortality Rate at 37.1, followed by Gardner at 36.7. The lowest age-adjusted Mental Disorders Mortality Rate was reported in the Rural Western Towns at 22.3.

Within the Commonwealth, the age-adjusted Mental Disorder Mortality Rate varied among racial/ethnic groups during this time period, with a high of 32.6 for White, non-Hispanics, followed by rates of 31.7 for Black, non-Hispanics, 19.6 for Hispanics and 13 for Asians. The numbers are too small to provide a meaningful break out of data by race/ethnicity or by city/town.

Mental Disorder Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)



Adults – Substance Abuse

Prevalence

As noted in the *Mental Health and Substance Abuse Needs Assessment of North Central Massachusetts, "*According to the NSDUH for 2005/2006, 24% of MA adults aged 18-25, and 8% of adults age 26 and older were dependent on or abused alcohol or illicit drugs". In this survey, Massachusetts has higher rates of substance abuse and dependency in all categories than the United States as whole. As shown below, the Central Region of Massachusetts has rates of substance use and abuse very similar to the Commonwealth level, but somewhat lower in most cases. The Central region does show a higher rate of binge drinking than the Commonwealth as a whole, though its rates of alcohol use and dependency are slightly lower than the Commonwealth. Central MA rates of marijuana and illicit drugs are very similar to State rates, but rates of dependency are slightly lower.

The NSDUH reports abuse of prescription medications to be a less prevalent problem. The NSDUH found non-medical use of pain killers to be 4.97% in MA overall and 4.38% in Central Massachusetts.

The qualitative data did express concerns about the frequency of alcohol abuse as well as the use and sale of illicit drugs in the Study Area.

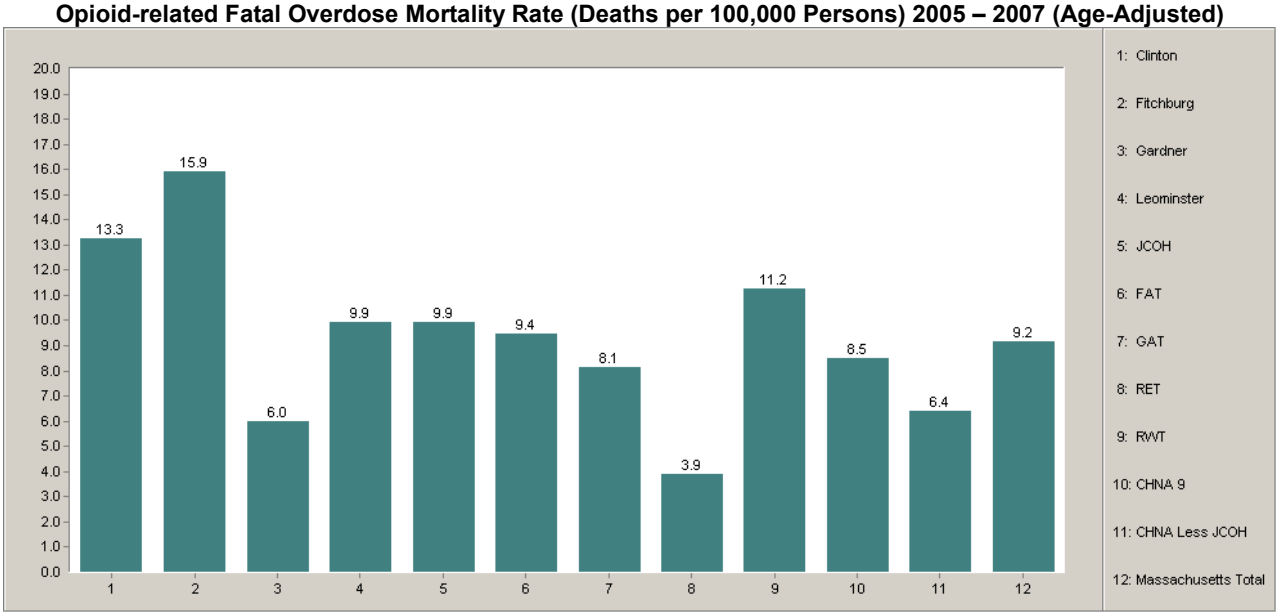
> *"Drugs…both prescription and illegal drugs affect the whole family…I think the rate of alcoholism and drug use is underreported!"* (General Population)
>
> *"Substance abuse…it's a big problem…I think it's in most households."* (General Population)
>
> *"I worry about drug addiction and crime…about the robberies due to drugs and the drug dealers that are out there…I worry about safety."*

Opioid-related Fatal Overdose Rate

In Massachusetts there were 1818 deaths due to Opioid-related overdoses in the 2005 – 2007 timeframe, for an age-adjusted Opioid-related Overdose Mortality Rate of 9.2 per 100,000. Several of the reporting regions in CHNA 9 exhibited an Opioid-related Overdose Mortality Rate higher than the State during this time period. Fitchburg had the highest Opioid-related Overdose Mortality Rate at 15.9, followed by Clinton at 13.3, and the Rural Western Towns at 11.2. The lowest age-adjusted Opioid-related Overdose Mortality Rate was reported in the Rural Eastern Towns at 3.9.

The JCOH service area, with an age-adjusted Opioid-related Overdose Mortality Rate of 9.9 had a much higher rate than the CHNA Less JCOH service area did at 6.4 deaths per 100,000Within the Commonwealth, the age-adjusted Opioid-related Overdose Mortality Rate varied among racial/ethnic groups during this time period, with a high of 10 for White, non-Hispanics, followed by rates of 9.1 for Hispanics, 7.1 for Black, non-Hispanics and 0.6 for Asians. The numbers are too small to provide a meaningful break out of data by race/ethnicity or by city/town.

Opioid-related Fatal Overdose Mortality Rate (Deaths per 100,000 Persons) 2005 – 2007 (Age-Adjusted)

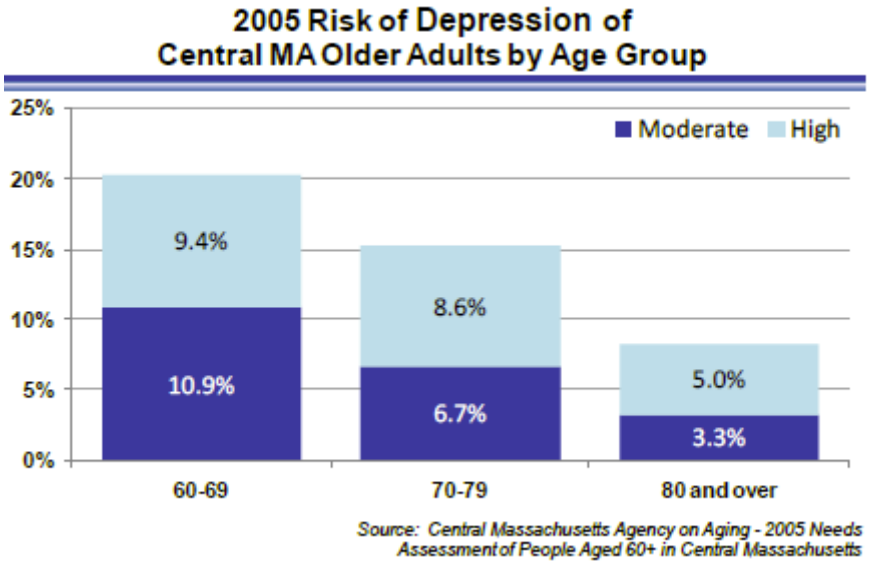


Older Adults: Mental Health

Prevalence of Mental Health Problems. As noted in the *Mental Health and Substance Abuse Needs Assessment of North Central Massachusetts, "*Almost 20 percent of adults over age 55 experience specific mental disorders that are not part of 'normal' aging. Researchers estimate that up to 63% of older adults with a mental disorder do not receive the services they need. Many older adults prefer to receive mental health services from their primary care provider".

Depression Prevalence in Central Massachusetts. As shown in the following chart, a survey of older adults in Central MA in 2005 included several questions that together provided an indication of a respondent's risk of depression. This information was not sufficient, however, to determine whether depression was actually present. The survey found the risk of depression to be higher for

those between 60 and 69, with rates of 20%, falling to 8% in those 80 years and older. There was also a pattern of higher rates of risk for depression among those with lower incomes. This shows that depression is likely to be of great significance for many older adults in the area.



Suicide Rates. The rate of suicide is highest among older adults relative to all other age groups. 14.3 of every 100,000 people age 65 and older in the United States died by suicide in 2004, higher than the rate of about 11 per 100,000 in the general population. Up to 75 percent of older adults who die by suicide visited a physician within a month before death.

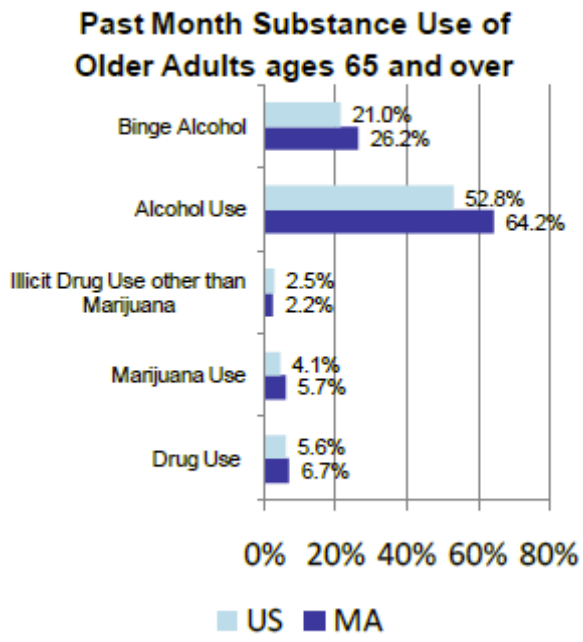
Substance Abuse. Misuse of substances is lower among older adults nationally than for other age groups. According to the 2000 National Survey on Drug Use and Health, among adults 55 and older:

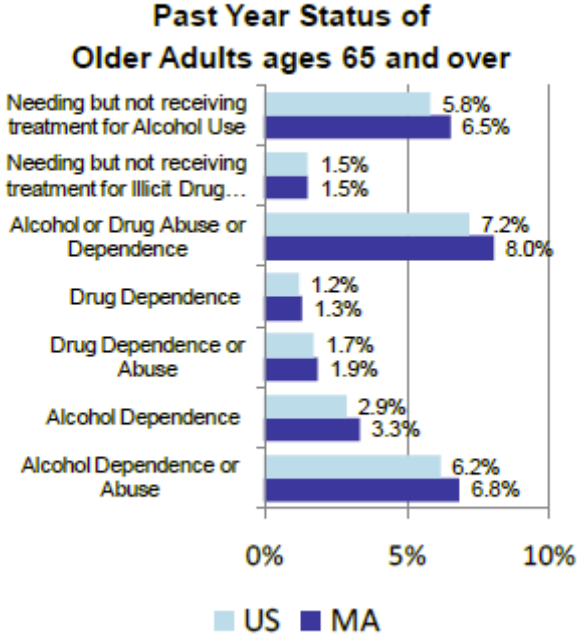
- 9% reported binge drinking in the past month;
- 2% reported heavy drinking;
- 1% reported illicit drug use.

But risk of misuse of prescription medications is higher. The National Institute on Drug Abuse found that 17% of adults aged 60 or older may be affected by prescription drug abuse.

In general, use of illicit drugs and drug and alcohol dependence in MA exceed national percentages (see Figure 63). In this NSDUH dataset from 2003-2004, past month alcohol use was notably higher in MA (64%) than nationally (59%), as was binge alcohol use (26.2% in MA versus 21% nationally). MA statistics for past year status were also higher for needing but not receiving treatment and for alcohol or drug dependence or abuse."

NSDUH State/National Comparisons





Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2003 and 2004.

BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM (BRFSS) DATA

This section of the report contains data from The Behavioral Risk Factor Surveillance System (BRFSS). According to the Massachusetts Department of Public Health website,

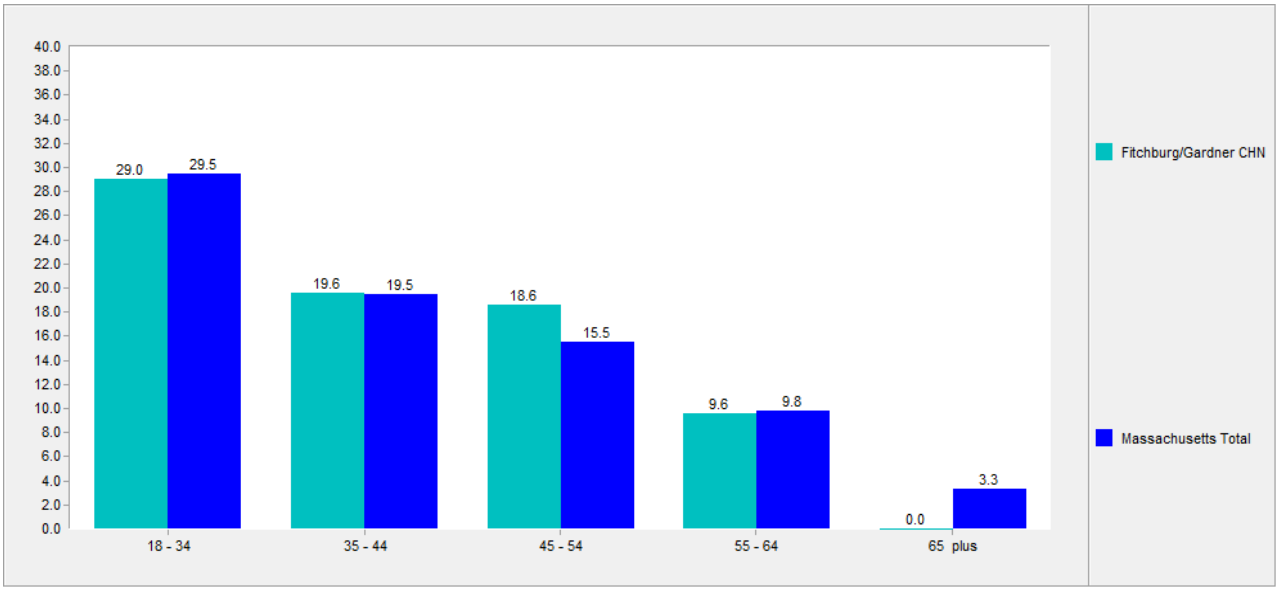
> "The BRFSS is a continuous, random–digit–dial, telephone survey of adults ages 18 and older and is conducted in all states as collaboration between the federal Centers for Disease Control and Prevention (CDC) and state departments of health. The Massachusetts survey includes a core set of questions developed by CDC, optional state modules developed by CDC, and state-added questions developed by programs within the Massachusetts Department of Public Health. The BRFSS collects data on a variety of health risk factors, preventive behaviors, chronic conditions, and emerging public health issues. The information obtained in this survey assists in identifying the need for health interventions, monitoring the effectiveness of existing interventions and prevention programs, developing health policy and legislation, and measuring progress toward attaining state and national health objectives."

While the BRFSS Data is reported separately in this section of the report, data related to health conditions contained in the BRFSS data set are also discussed (utilizing additional data sources such as MassCHIP) in the **Executive Summary** and in all of the sections of this report.

Binge Drinking

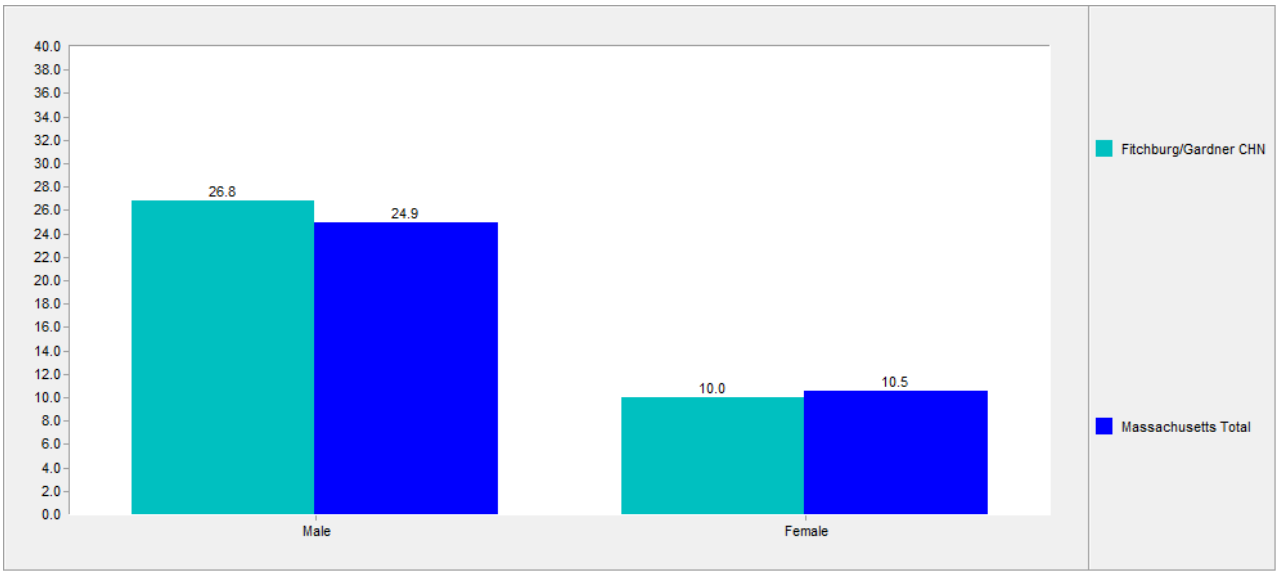
Within Massachusetts**,** 17.3% of adult respondents to the Behavioral Risk Factor Surveillance System (BRFSS) survey during the 2003 – 2008 time period reported binge drinking within the last 30 days. Within CHNA 9 this percentage was slightly higher at 18.2%. When this data is broken down by age group, the percentages in the Commonwealth and CHNA 9 are similar among most age groups, except for the 45 – 54 age group, in which CHNA 9 had 3.1 percentage points more reported binge drinking than the State (18.6% versus 15.5%). Within the 65 plus age group, there were too few CHNA 9 respondents to obtain a meaningful percent.

Percent of Binge Drinking Among Adults in Past 30 Days by Age Group (2003 – 2008)



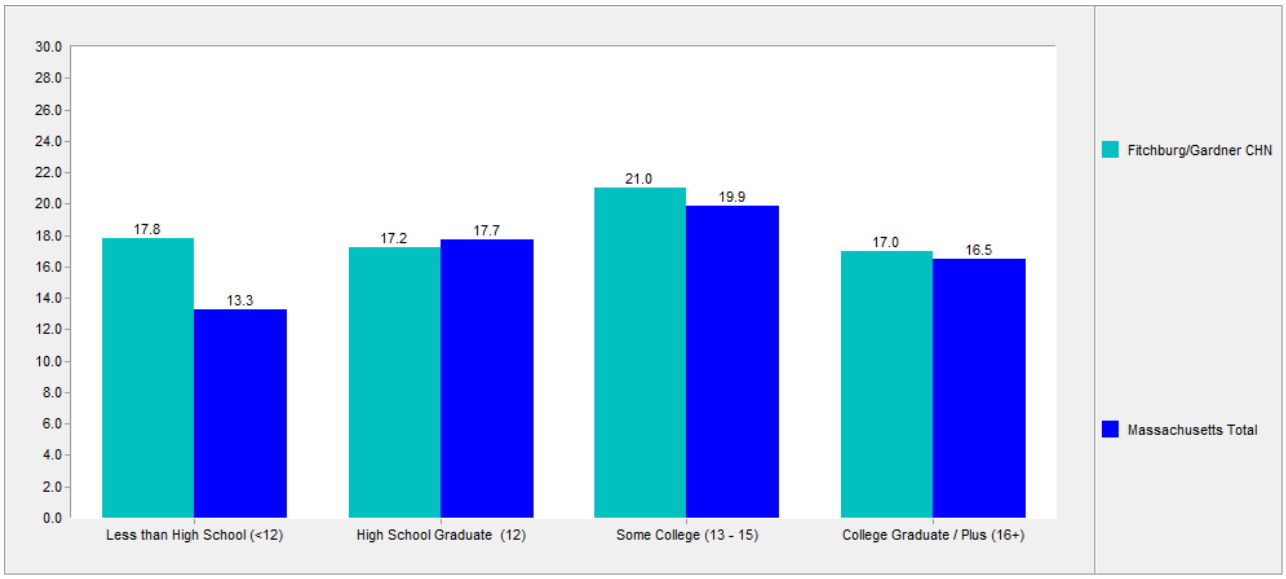
The percentage of adult women who reported binge drinking in the past 30 days was slightly lower in CHNA 9 than in the Commonwealth. However, the percentage of men who reported binge drinking was higher in CHNA 9 at 26.8% versus the State at 24.9%.

Percent of Binge Drinking Among Adults in Past 30 Days by Gender (2003 – 2008)



The numbers of respondents by race were too few to provide meaningful data within CHNA 9. Within the Commonwealth as a whole, the highest percentage of binge drinking was reported among White, non-Hispanics at 18.1%, followed by Hispanics at 15.2%, Black non-Hispanics at 12.8% and Asians at 8.4%.

Percent of Binge Drinking Among Adults in Past 30 Days by Level of Education (2003 – 2008)



Binge drinking by adults with less than a high school education was much higher in CHNA 9 at 17.8% versus the State at 13.3%. CHNA 9 residents with some college were also more likely to have reported binge drinking than in the Commonwealth. However, among other levels of education, the percentages were comparable among CHNA 9 and the Commonwealth.

As noted throughout this report, community members often do not utilize the same characterizing terminology or description of a health issue. In this regard, the term "binge drinking" was not identified as such. However, the issue of alcohol abuse, both in adults and youth, was identified as a health concern in the study area.

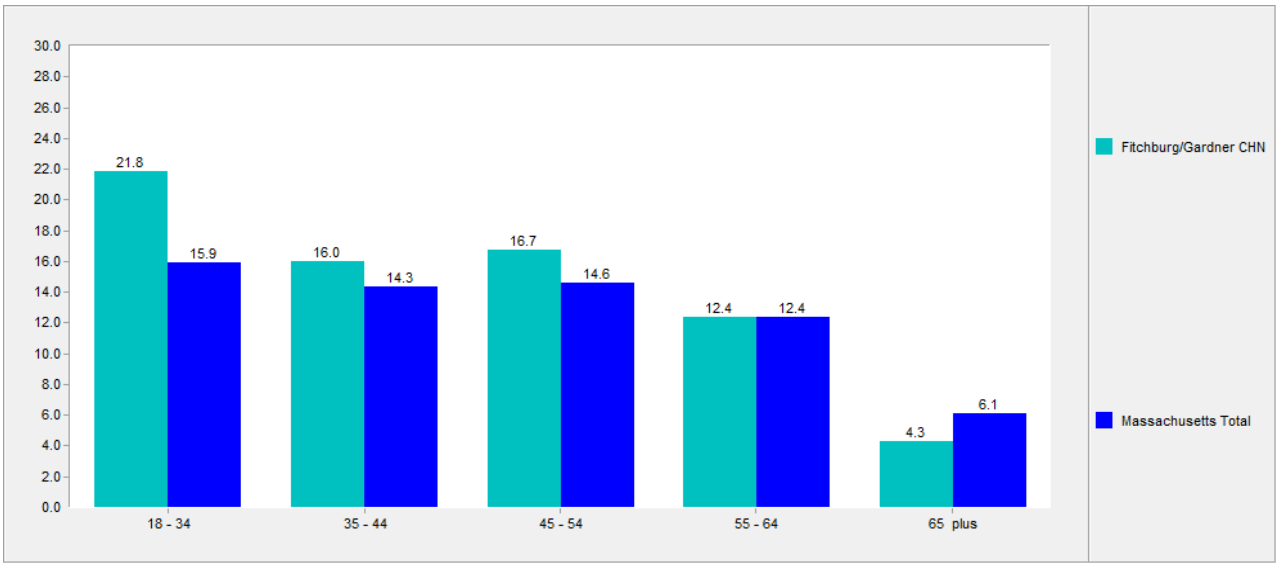
As noted earlier in this report, community members identified the abuse of alcohol and illicit drugs as a significant health concern. In addition, many community members identified being in recovery from substance abuse and the positive impact that their recovery has made upon their health and wellbeing.

> *"I feel real good. My life has changed 360 degrees. I'm not getting into trouble anymore. I'm not going to jail anymore. I'm not drinking anymore. I feel real good mentally."*

As noted above, topics related to BRFSS data are discussed throughout this report. Please refer to the **Executive Summary**, **Mortality**, **and Mental Health and Substance Abuse** sections for additional quantitative and qualitative data related to substance use.

Smoking

Percent of Current Smokers Among Adults by Age Group (2003 – 2008)



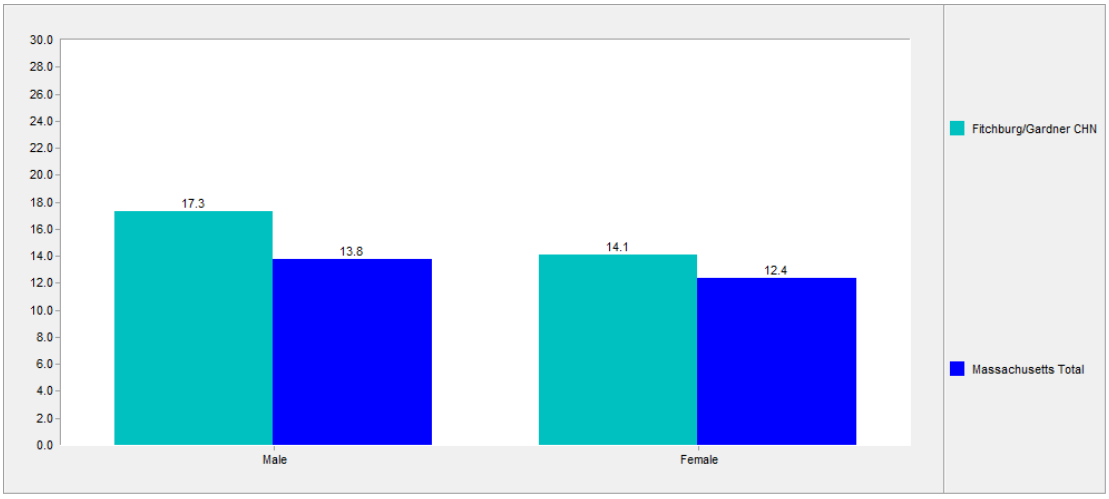
Within Massachusetts**,** 13.1% of adult respondents to the Behavioral Risk Factor Surveillance System (BRFSS) survey during the 2003 – 2008 time period reported being current smokers who smoke regularly. Within CHNA 9 this percentage was higher at 15.6%. When this data is broken down by age group, the percentage of younger adults, aged 18 – 34 in CHNA 9 who were smokers at 21.8% was much higher than the 15.9% of smokers in that age group in the Commonwealth.

CHNA 9 also had a higher percentage of current smokers in the 35 – 44 age group (16.0% versus 14.3%) and in the 45 – 54 age group (16.7% versus 14.6%). However, the Commonwealth had a higher percentage of smokers in the 65 plus age group at 6.1% versus 4.3% in CHNA 9.

The numbers of respondents by race were too few to provide meaningful data within CHNA 9. Within the Commonwealth as a whole, the highest percentage of current smoking was reported among White, non-Hispanics at 15.5%, followed by Hispanics at 12.5%, Black non-Hispanics at 10.9% and Asians at 5.3%.

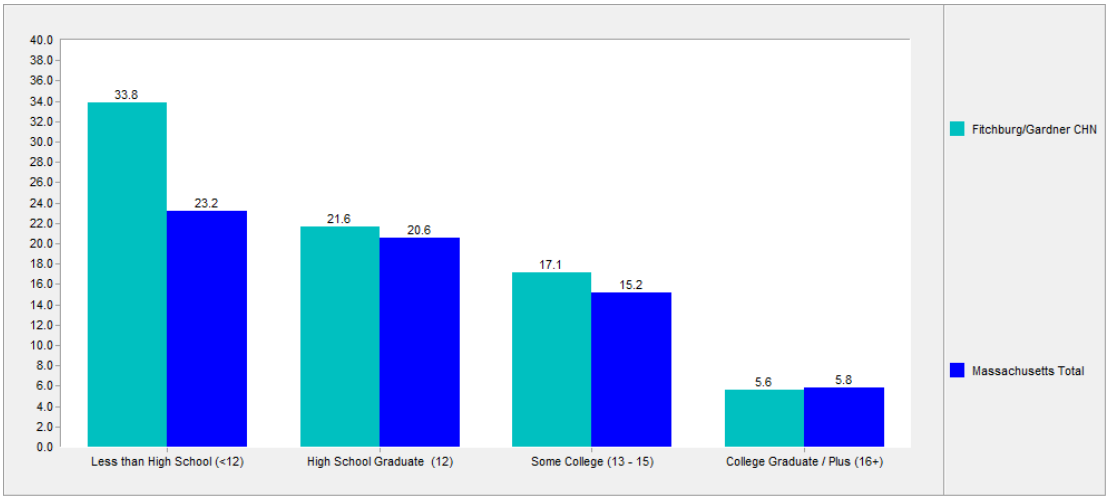
CHNA 9 had a higher percentage of smokers than the State among both adult men and adult women.

Percent of Current Smoking Among Adults by Gender (2003-2008)



Current smoking by adults with less than a high school education was much higher in CHNA 9 at 33.8% versus the State at 23.2%. CHNA 9 residents with some college were also more likely to have been current smokers that the Commonwealth. However, among other levels of education, the percentages were comparable among CHNA 9 and the Commonwealth.

Percent of Current Smoking Among Adults by Level of Education (2003 – 2008)



Smoking was a concern expressed in the qualitative data. It was most frequently identified as a concern within the General Population groups and in the Asian groups.

> *"I think we have a lot of tobacco use. People spend a lot of their income for cigarettes. I go to houses and parents are smoking with kids in the house." (General Population)*

As noted above, topics related to BRFSS data are discussed throughout this report. Please refer to the **Executive Summary**, **Mortality**, **Maternal and Child Health,** and **Primary Care Manageable Hospitalizations** sections for related quantitative and qualitative data related to smoking.

Overweight and Obesity: Adults

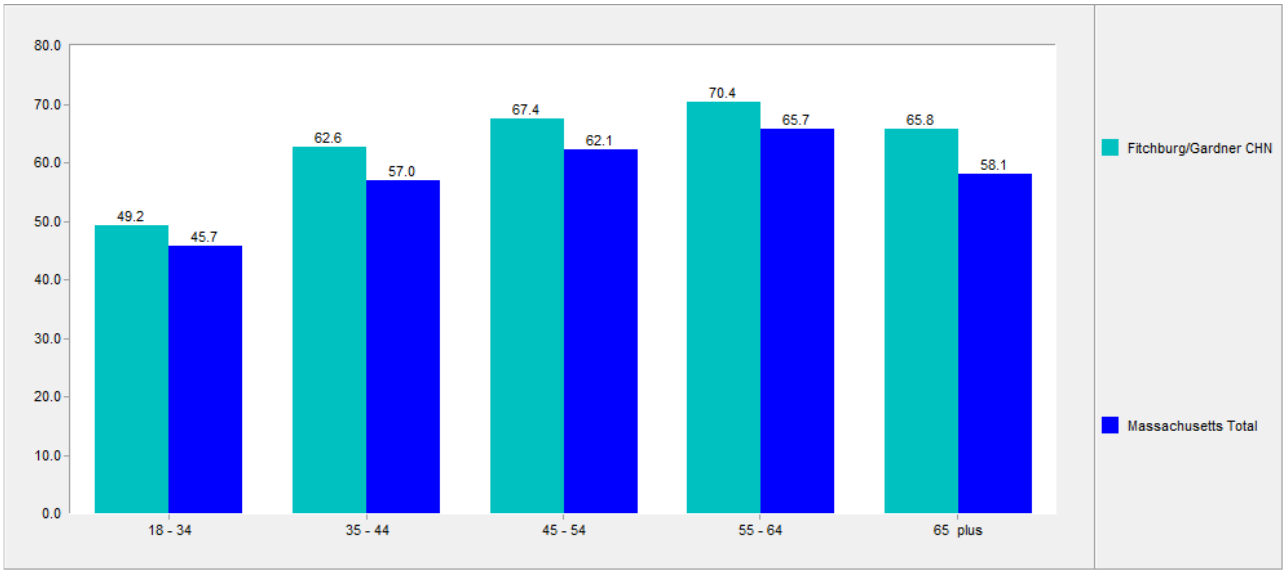
Within Massachusetts**,** 56.0% of adult respondents to the Behavioral Risk Factor Surveillance System (BRFSS) survey during the 2003 – 2008 time period reported being overweight based on having a Body Mass Index (BMI) of greater than 25. Within CHNA 9 this percentage was higher at 60.9%. When this data is broken down by age group, the percentage of CHNA 9 respondents who reported being overweight was consistently higher than within the Commonwealth as a whole for all age groups. Within the 55 – 64 age group, 70.4% of CHNA 9 respondents were overweight.

In the qualitative data, the issue of "overweight" or "obesity" was not expressed utilizing this terminology; however, community members across virtually all groups described concerns that have been established to be related to overweight and obesity. This distinction may be useful to healthcare providers for consideration in their discussions with patients about these health issues and risk factors. Community members instead discussed their concerns about the high costs of "healthy" foods, in combination with the accessibility to "fast foods". Several parents additionally noted their children's preference for "fast foods" as opposed to "healthy" options.

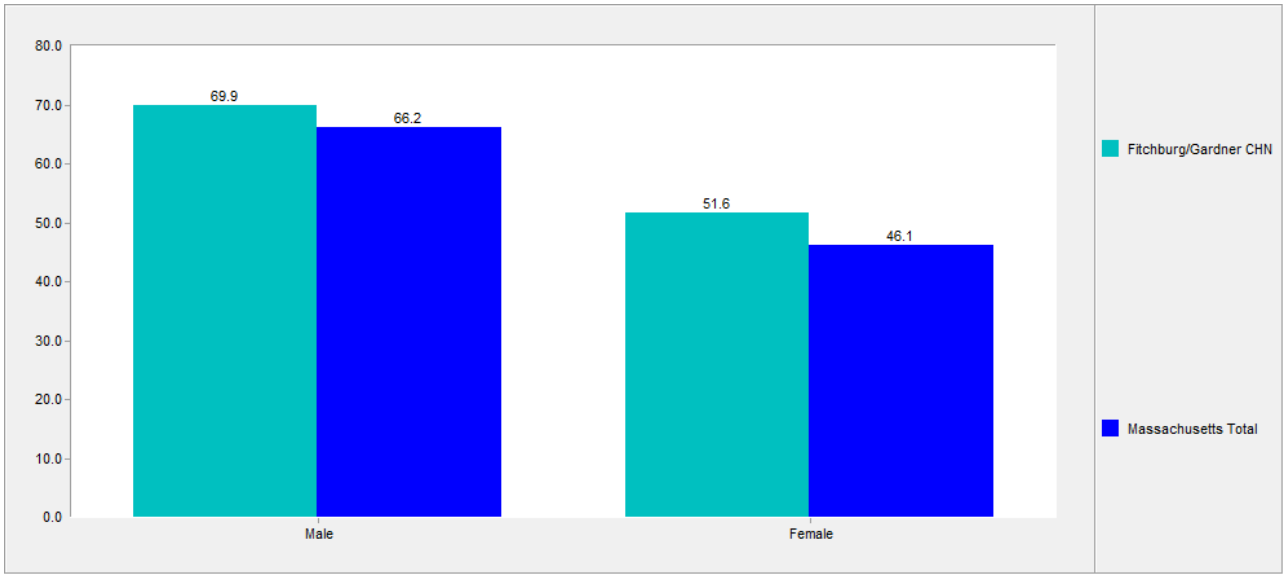
> *"Good food costs a lot more versus getting the stuff off the shelves which are full of fat that you don't really want to eat…but that is what is accessible."*
>
> *"Kids need to be conditioned to eat vegetables. Not just running to McDonalds and the fast food stuff. It's full of so many calories and greasy. Why do that?"*

In addition, the health conditions of overweight and obesity were also touched upon when community members discussed access to safe and affordable environments in which to engage in physical activity. Community members, particularly in the study's urban areas, expressed concern about safety issues. However, community members also identified community assets that the study area possesses, including those within urban areas, such as school track fields, parks, and gyms.

Percent of Overweight Adults by Age Group (2003 – 2008)



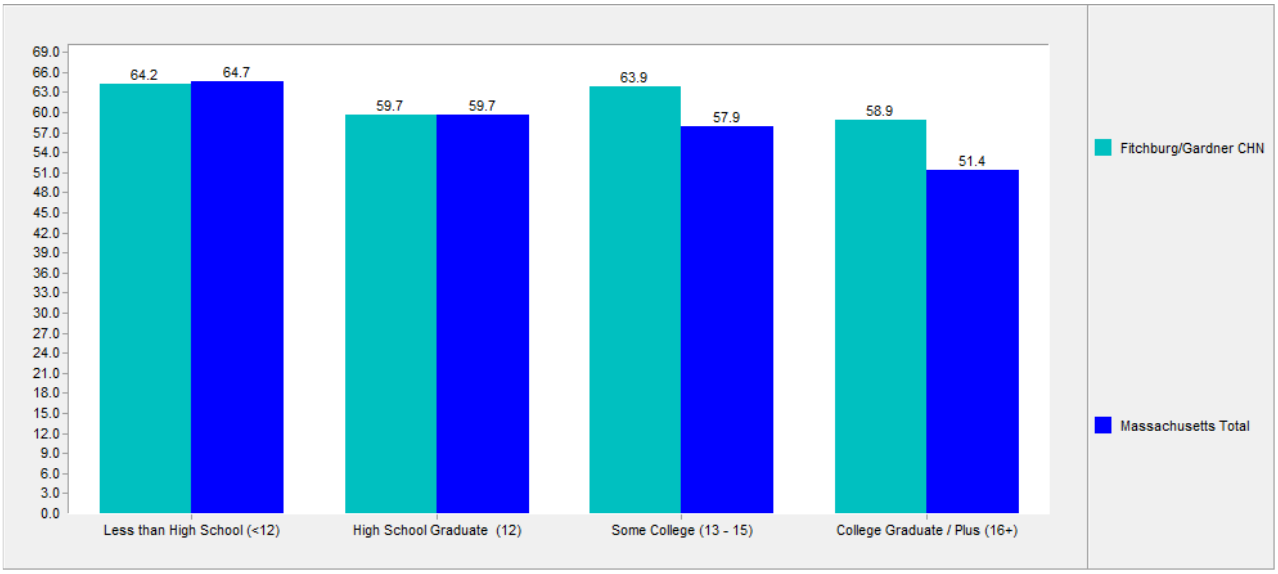
Percent of Overweight Adults by Gender (2003 – 2008)



CHNA 9 had a higher percentage of overweight adults than the Commonwealth among both men (69.9% versus 66.2% for the State) and women (51.6% versus 46.1% for the State).

Within the Commonwealth as a whole, the highest percentage of overweight adults was reported among Black, non-Hispanics at 67.5%, followed by Hispanics at 62.2%, White, non-Hispanics at 55.7% and Asians at 32.8%. The numbers of respondents by race were too few among, Black, non-Hispanics and Asians to provide meaningful data within CHNA 9. However, more White, non-Hispanics in CHNA 9 (61.2%) were overweight than White, non-Hispanics the Commonwealth (55.7%), while fewer Hispanics in CHNA 9 (61.3%) were overweight than Hispanics in the Commonwealth (62.2%).

Percent of Overweight Adults by Level of Education (2003 – 2008)



Among respondents with less than a high school education, the percentage of overweight adults was comparable among the Commonwealth and CHNA 9, as was this percentage for high school graduates. However, CHNA 9 residents with some college and CHNA 9 college graduates reported higher percentages of being overweight than the Commonwealth at 63.9% versus 57.9% and 58.9% versus 51.4%, respectively.

Obesity as a whole is also a growing national, statewide and local issue. The percentage of obese adults in CHNA 9 for the period of 2001 through 2007 was 22.1%, compared to the statewide rate of 19.4% for the same time period. The percentage of adults who were overweight (which includes those who are obese) was 61.5% as compared to a statewide rate of 55.4%.

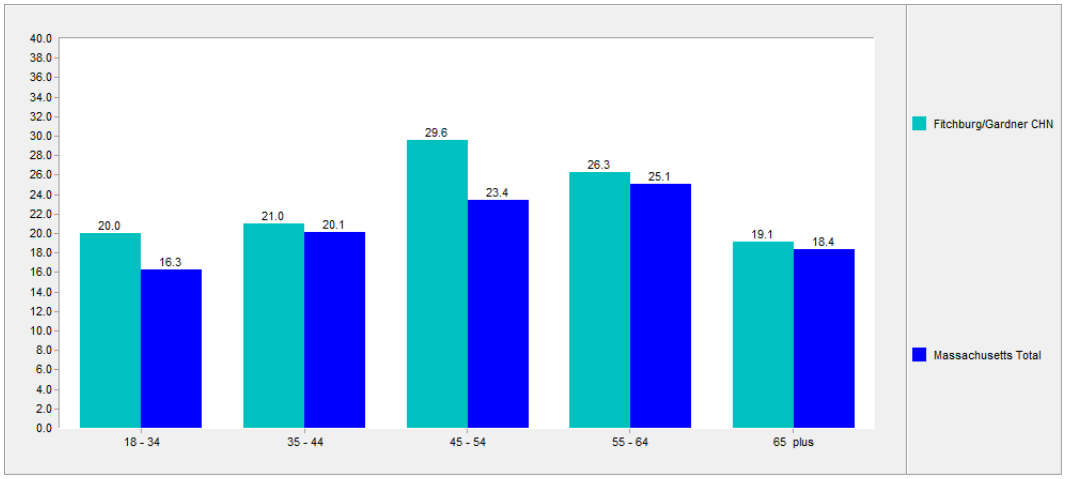
Within Massachusetts**,** 19.9% of adult respondents to the Behavioral Risk Factor Surveillance System (BRFSS) survey during the 2003 – 2008 time period reported being obese based on having a Body Mass Index (BMI) of greater than 30. Within CHNA 9 this percentage was higher at 22.6%. When this data is broken down by age group, the percentage of CHNA 9 respondents who reported being obese was consistently higher than within the Commonwealth as a whole for all age groups. Within the 45 – 54 age group, 29.6% of CHNA 9 respondents were obese, compared to 23.4% of adults in this age group within the Commonwealth. According to the *Obesity Forum Policy Brief* released in January, 2007 by the Massachusetts Health Policy Forum there are racial, ethnic, and gender health disparities in regard to overweight and obesity. The following is an excerpt from this brief.

> "Overweight and obesity have increased among all racial and ethnic groups and for people of all socio-economic status. However, there are some important differences between *(sic)* groups. Men are more likely than women to be overweight and obese, and adults aged 45 – 54 years are most likely to be overweight and obese. Among minority populations, the problem is even more severe than it is for Whites. Both Blacks and Hispanics are more likely to be both overweight and obese,

whereas Asians are the least likely to be overweight or obese. Rates of obesity are higher among low-income and less educated populations."

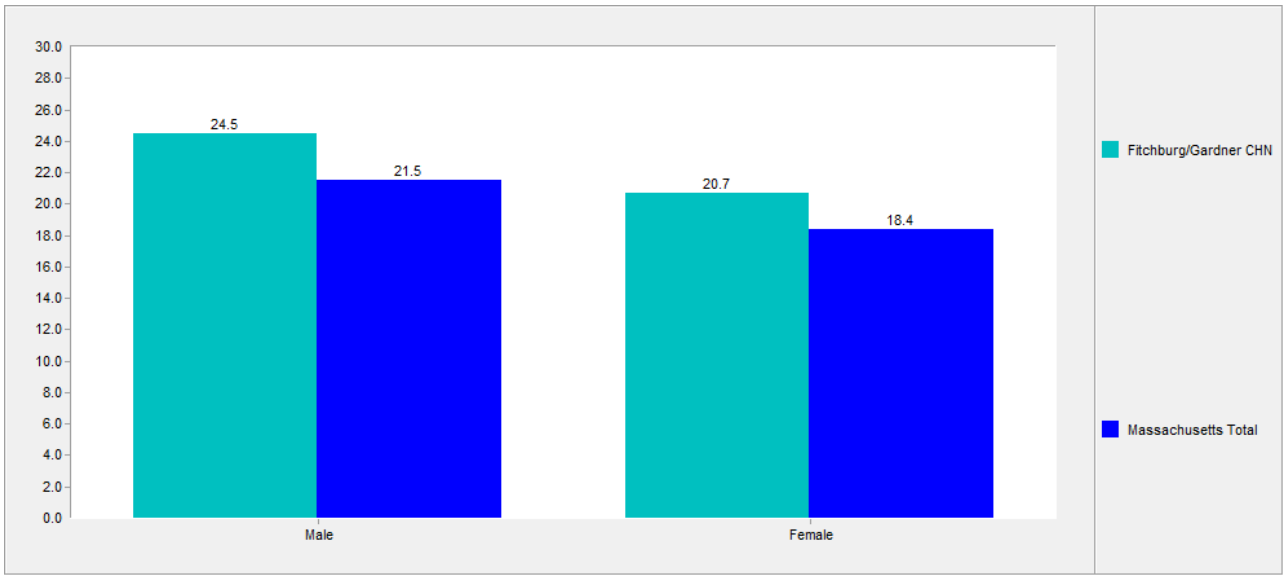
Within the Commonwealth as a whole, the highest percentage of obese adults was reported among Black, non-Hispanics at 29.4%, followed by Hispanics at 25.0%, White, non-Hispanics at 19.5% and Asians at 5.0%. The numbers of respondents by race were too few among Black, non-Hispanics and Asians to provide meaningful data within CHNA 9. However, more White, non-Hispanics in CHNA 9 (22.9%) were obese than White, non-Hispanics the Commonwealth (19.5%), while fewer Hispanics in CHNA 9 (24.2%) were obese than Hispanics in the Commonwealth (25.0%).

Percent of Obese Adults by Age Group (2003 – 2008)



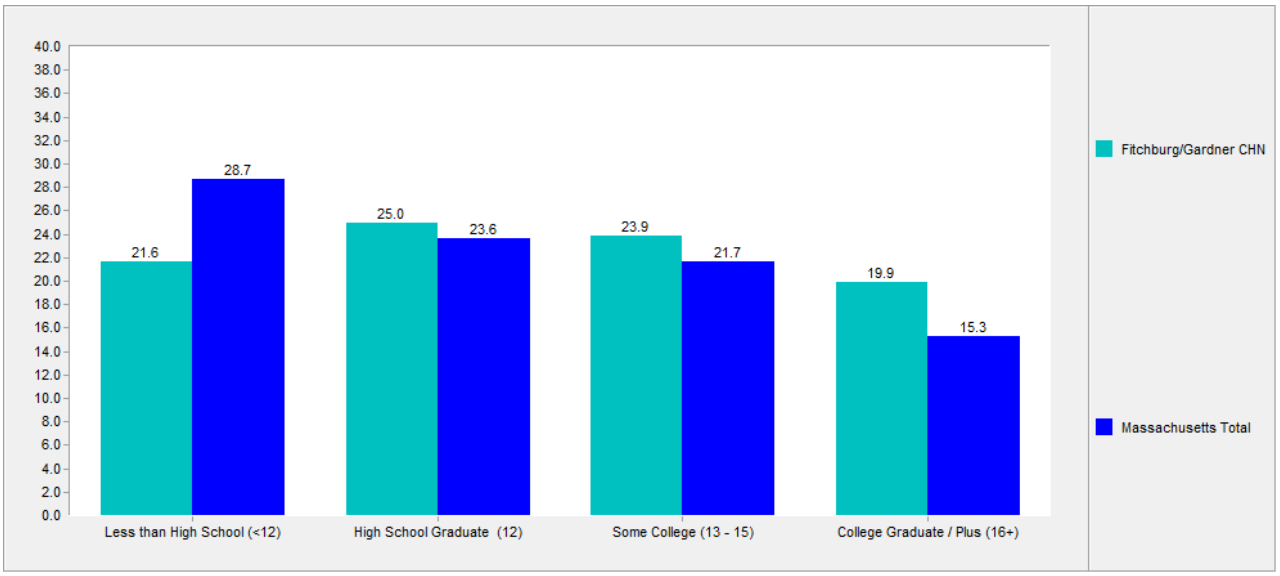
CHNA 9 had a higher percentage of obese adults than the State among both men (24.5% versus 21.5% for the State) and women (20.7% versus 18.4% for the State)

Percent of Obese Adults by Gender (2003 – 2008)



Among respondents with less than a high school education, the percentage of obese adults was much lower in CHNA 9 at 21.6% than in the State at 28.7%. However, CHNA 9 residents who were high school graduates, those who had some college and who were college graduates reported higher percentages of being obese than the State. Among college graduates in CHNA 9, the obesity percentage was 19.9% as compared with a percentage of 15.3% among college graduates in the State.

Percent of Obese Adults by Level of Education (2003 – 2008)



As noted in the Overweight discussion section above, community members utilized alternative ways to discuss the overweight and obesity, discussing rather the related or causal factors related to overweight and obesity. The discussion of the qualitative data relating to both topics is included in the preceding section describing overweight data.

Overweight and Obesity: Children

As discussed in the prior section **Overweight Obesity: Adults**, overweight and obesity are significant health concerns nationally, in the Commonwealth, and particularly in the study region. For children, the issues of overweight and obesity are of even greater concern, since research indicates that 80% of children ages 10-15 years old who are overweight are statistically more likely to become obese adults by age 25. Nationally, the CDC has estimated that 17% of children aged 2-19 are obese. For those aged 2-5, obesity rates increased from 5 to 10.4% over the period of 1976-1980 to 2007-2008 (*Basics of Childhood Obesity,* Centers for Disease Control and Prevention, 2011: http://www.cdc.gov/obesity/childhood/basics.html).

The immediate and long term health consequences of childhood obesity are significant. Children who are obese are more likely to have the following health conditions: High blood pressure and high cholesterol (risk factors for cardiovascular disease);

Increased risk of impaired glucose tolerance, insulin resistance and type 2 diabetes[10]; sleep apnea, and, asthma.[11] [12] As noted above, obese children are more likely to become obese adults (with a more severe condition of obesity) which puts them at greater risk for heart disease, diabetes, and certain forms of cancer.

Limited data is available in Massachusetts by city and town or by race and ethnicity for childhood overweight and obesity. However, *The Status of Childhood Weight in Massachusetts, 2009: Preliminary Results from Body Mass Index Screening in 80 Essential School Health Districts, 2008-2009,* published by the MA Department of Public Health (2010), does provide us with some data on school aged children in grades 1, 4, 7, and 10 related to overweight and obesity in three of the cities and towns in the study area: Fitchburg, Gardner, and Leominster. Of these, Leominster rated slightly lower than the overall study average of 34.3% reporting 32.1% of children being overweight or obese. In contrast, Fitchburg and Gardner reported some of the highest rates of overweight and obesity of the 80 communities reviewed at 46.2% and 42.0% respectively. In the study overall, there was a range of 9.6% (in Arlington) to a high of 46.6% (in Lawrence). For those seeking additional data on these cities and towns, the authors would encourage the reader to review this report in more detail as it breaks down the data more specifically by gender and by age.

As discussed above, childhood obesity poses a higher risk for diabetes. The following chart shows rates of diabetes related inpatient hospitalizations. Diabetes-related hospitalizations for children ages 0-19 were significantly higher for CHNA 9 than in the Commonwealth as a whole at 113.3 versus the state rate of 88.6 and 52.3 versus the state rate for ages 0-9 years and 10-19 years respectively).

Diabetes Related Inpatient Hospitalizations: CHNA 9

	Area Count	Area Age Specific Rate	State Age Specific Rate
Age			
0 to 9 yrs.	**39**	**113.3**	**88.6**
10 to 19 yrs.	**20**	**52.3**	**34.4**
20 to 24 yrs.	15	105.6	98.0
25 to 44 yrs.	84	108.0	133.6

[10] Whitlock EP, Williams SB, Gold R, Smith PR, Shipman SA. Screening and interventions for childhood overweight: a summary of evidence for the US Preventive Services Task Force. *Pediatrics.* 2005;116(1):e125—144.

[11] Han JC, Lawlor DA, Kimm SY. Childhood obesity. *Lancet.* May 15 2010;375(9727):1737—1748.

[12] Sutherland ER. Obesity and asthma. *Immunol Allergy Clin North Am.* 2008;28(3):589—602, ix.

Childhood Overweight and Obesity: Interventions

According to data from the CDC, the average child now consumes 365 extra calories per day of extra sugars and 433 calories per day of solid fats for a combined total of 798 calories. It has been demonstrated that the more time children spend in front of any type of screen – whether video, television or computer—the greater the likelihood they will be overweight or obese[13].

Interventions to address the issue of both adult and childhood obesity are complex and have been initiated in some areas in the region through programs such as the *Fit in Fitchburg* program, the *Off Our Rockers* after school program in Gardner, and others. Efforts undertaken have included environmental and policy strategies such as modifying the built environment to make walking to school or going to playgrounds more accessible and safe, making school lunches healthier, supporting more community gardens, offering incentives for low-income families to purchase fresh fruits and vegetables, addressing work place health and parent education, and offering after school nutrition and activity programming. These efforts are consistent with the conclusions of the *Massachusetts Health Policy Obesity Forum Brief.*

> "The challenge, then, is to create healthy defaults, build environments that are good for adults and children alike and that promote healthy behaviors. In Massachusetts, change could begin by creating healthy school environments that provide children with nutritious foods and encourage physical activity. Outside of the school setting, policies that provide more and better health information about food choices, encourage consumption of locally grown produce, and discourage consumption of less nutritious, high fat, high calorie options should be considered. Equally important are policies that create safe spaces in all neighborhoods and promote walking and physical activity as a part of everyday life."

As focus group participants noted, it is not easy for everyone to make "healthy" food choices.

> *"Good food costs a lot more versus getting the stuff off the shelves which are full of fat that you don't really want to eat but that is what is accessible."*

Addressing the obesity issue in the current economic climate is a particularly challenging when so many people are consumed by concerns that are more immediate. Out of more than 160 focus group or interview participants, only 6 mentioned weight control as an issue. Conversely, nearly everyone talked about jobs and the economy.

As noted above, topics related to BRFSS data are discussed throughout this report. Please refer to the **Executive Summary**, **Mortality**, and Primary Care **Manageable Hospitalizations** sections for additional quantitative and qualitative data related to Overweight and Obesity.

Physical Activity

Within Massachusetts, 52.2% of the Behavioral Risk Factor Surveillance System (BRFSS) respondents in the 2003 – 2008 time period reported having been involved in regular physical

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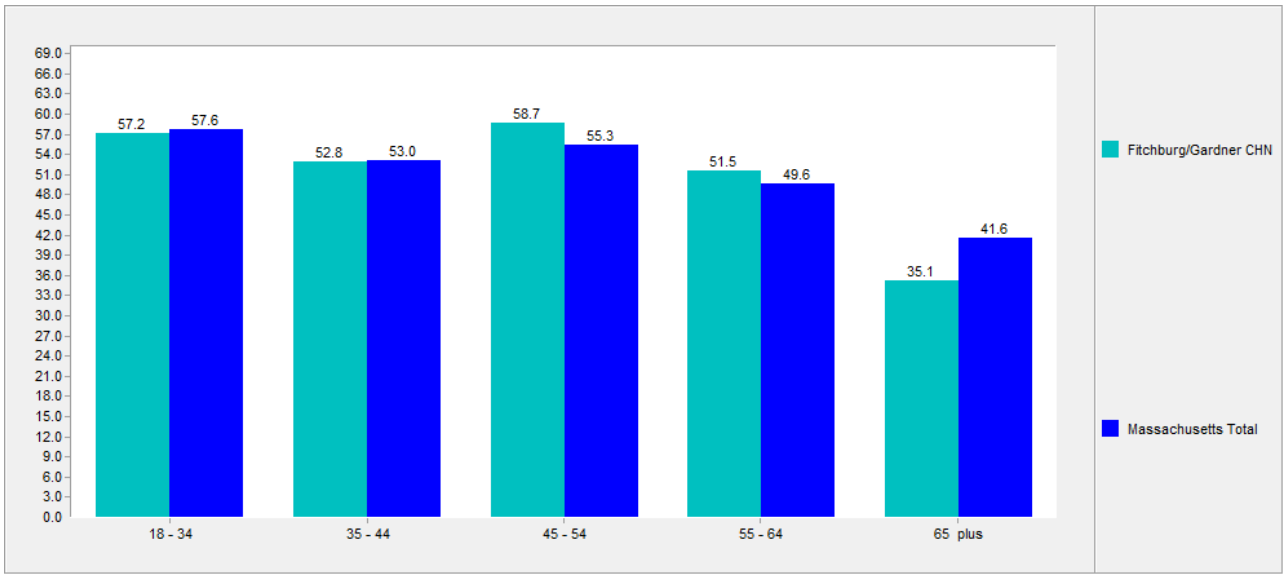
[13] Caroli, M, Argentieri, L, Cardone, M, Masi, A. Role of television in childhood obesity prevention. *International Journal of Obesity,* (2004) 28, S104–S108. doi:10.1038/sj.ijo.0802802.

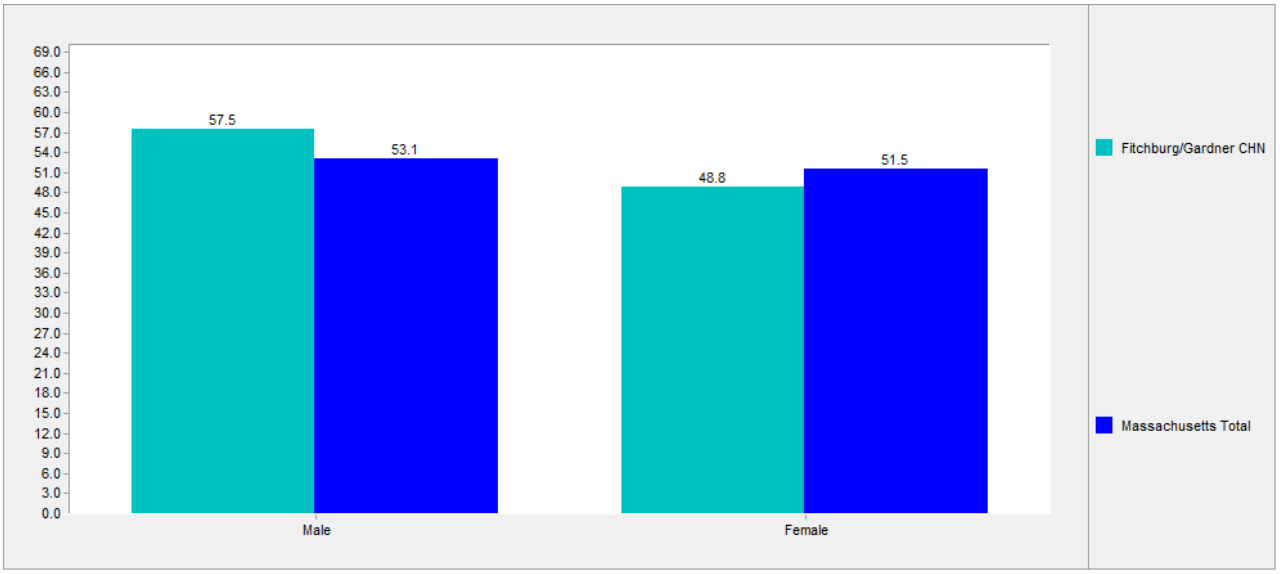
activity, defined as a 30 minute session 5 or more times per week. Within CHNA 9, this percentage was 52.8%.

Percent of Adults Reporting Regular Physical Activity by Age Group (2003 – 2008)



When this data is broken down by age group, the percentage of CHNA 9 respondents who reported being regularly physically active was comparable to the Commonwealth for 18 – 34 and 35 – 44 year olds. However, The percentage of regularly physically active adults in the 45 – 54 and 55 – 64 age groups in CHNA 9 was higher than within the Commonwealth as a whole at 58.7% versus 55.3% and 51.5% versus 49.6%, respectively. In the 65 plus age group, CHNA 9 fared worse than the Commonwealth overall, with only 35.1% of respondents in this age group being regularly physically active versus 41.6% in the Commonwealth.

Percent of Adults Reporting Regular Physical Activity by Gender (2003 – 2008)

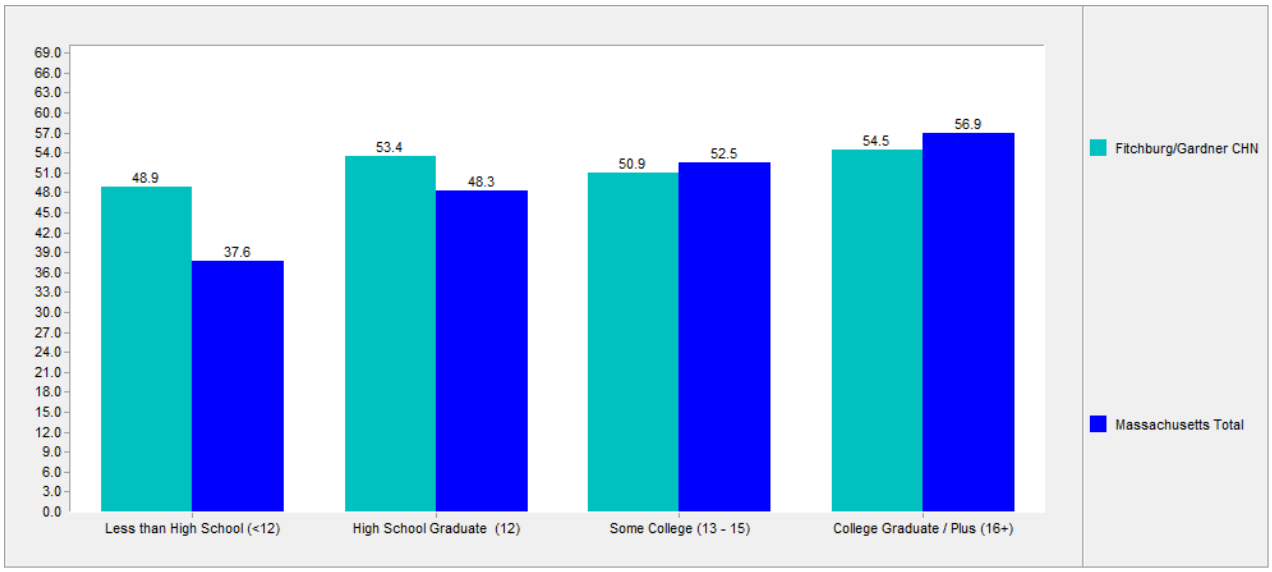


A higher percentage of adult men in CHNA 9 were involved in regular physical activity at 57.5% than adult men in the Commonwealth at 53.1%. However, the percentage of adult women in CHNA 9 who were involved in regular physical activity was lower at 48.8% than the State at 51.5%.

The numbers of respondents by race were too few to provide meaningful data within CHNA 9. Within the Commonwealth as a whole, the highest percentage of respondents who had regular physical activity was reported among White, non-Hispanics at 54.0%, followed by Asians at 43.2%, Black non-Hispanics at 42.4%, and Hispanics at 41.7%.

Among CHNA 9 respondents with less than a high school education and those who were high school graduates, regular physical activity was higher than among similar respondents within the Commonwealth at 48.9% versus 37.6% and 53.4% versus 48.3%, respectively. However, CHNA 9 residents who had some college and who were college graduates reported lower percentages of regular physical activity than among similar respondents within the Commonwealth.

Percent of Adults Reporting Regular Physical Activity by Level of Education (2003 – 2008)



Diabetes

Within Massachusetts, 6.5% of the Behavioral Risk Factor Surveillance System (BRFSS) respondents in the 2003 – 2008 time period reported that they had or currently have diabetes. Within CHNA 9, this percentage was less at 5.8%.

When this data is broken down by age group, the percentage of CHNA 9 respondents who had or have diabetes was slightly lower than the Commonwealth for the 55 – 64 age group. However, the percentage of respondents with diabetes was slightly higher in CHNA 9 for the 35 – 44 age group and much higher in CHNA 9 for the 65 plus age group as compared to the Commonwealth. Among the 18– 34 age group, the numbers were too small to provide meaningful data in CHNA 9.

Diabetes is such a concern in this report as diabetes significantly increases the chances of having a range of additional serious health problems such as high blood pressure, high cholesterol,

coronary artery disease, and stroke. (CDC, *National Diabetes Fact Sheet, 201:* http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf).

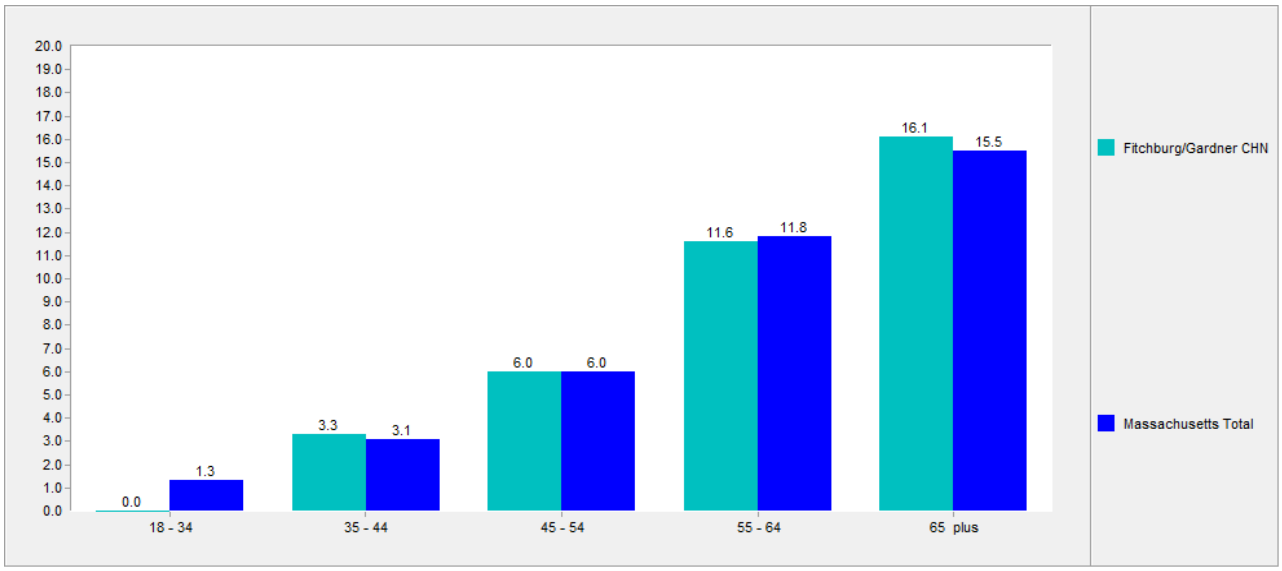
As outlined in the following table, for example, a person with diabetes is more than twice as likely to also have high blood pressure (59.3% as opposed to 21.4% for a person without diabetes). Similarly, a person with diabetes is more than three times more likely to have cardiovascular disease than a person without diabetes (i.e., 31.3% versus 9.5% respectively).

Why is Diabetes Such a Concern:
Risk factors among people with and without Diabetes

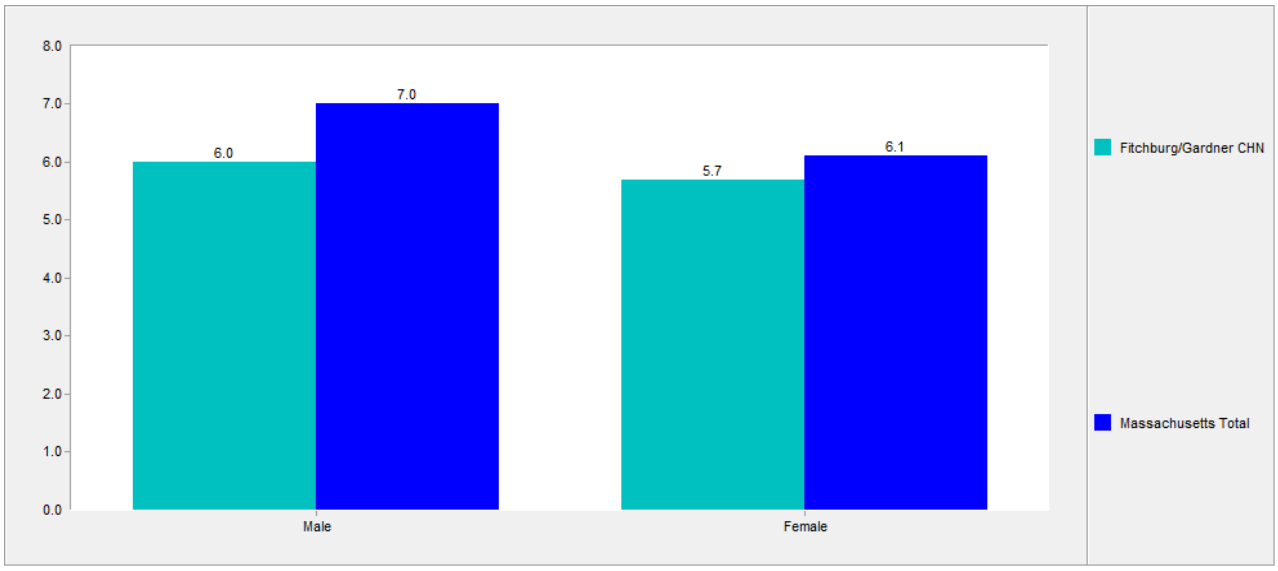
	State 3 year Percent (Massachusetts)	
	Persons with Diabetes	Persons without Diabetes
High Blood Pressure	**59.3**	**21.4**
High Cholesterol	**54.5**	**30.4**
Cardiovascular: Had a Stroke	**8.9**	**2.4**
Cardiovascular: Had or have Angina, or Coronary Disease	**17.7**	**4.6**
Cardiovascular: Had or have Heart Disease	**31.3**	**9.5**
Overweight	**79.9**	**52.5**
Obese	**42.8**	**16.6**
Low Physical Activity	**64.6**	**46.9**
Less than 5 servings of fruits and vegetables	**71.8**	**70.7**
Smokes Regularly	**14.4**	**14.2**
Have Health Insurance	**97.2**	**92.3**
Have a disability	**47.1**	**19.4**

Consistent with the quantitative data presented in this section, diabetes was a major concern for all focus groups conducted. As noted in the **Diabetes Mortality** section of this report, across groups Latino participants most frequently cited diabetes as a significant health concern.

Percent of Adults Who Had or Have Diabetes by Age (2003 – 2008)



Percent of Adults Who Had or Have Diabetes by Gender (2003 – 2008)



Within both CHNA 9 and the Commonwealth a higher percentage of adult men have or had diabetes than adult women. The percent of adults with diabetes in CHNA 9 was lower for both men and women than the corresponding percent of men and women with diabetes in the Commonwealth.

Although the numbers of respondents by race were too few to provide meaningful data within CHNA 9 through the MassCHIP data sources available at the time of the study, it has been well

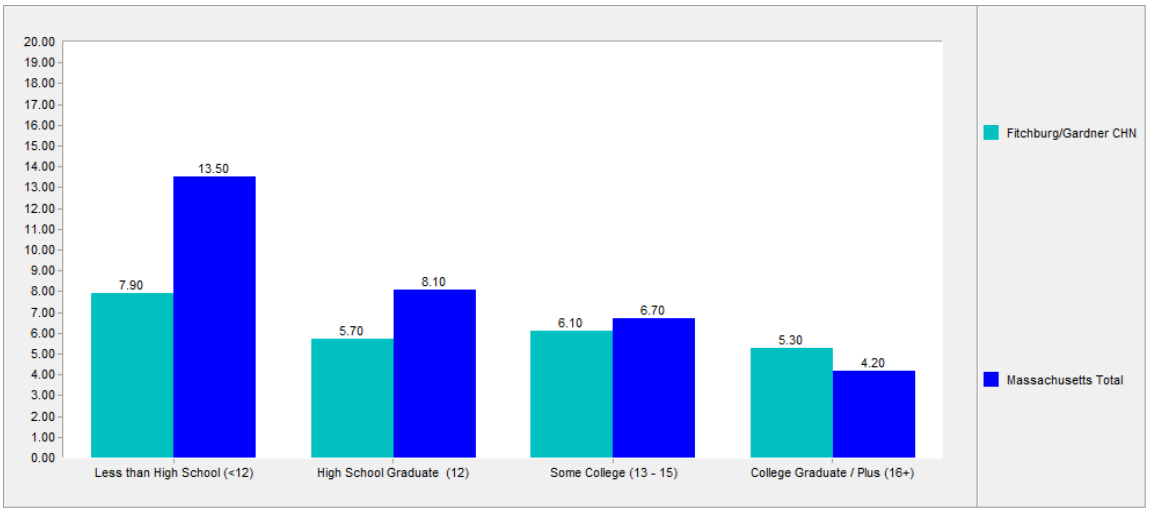
established that most communities of color suffer significant disparities in rates of diabetes and of diabetes related complications and mortality (CDC, *National Diabetes Fact Sheet, 201:* http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf). Within the Commonwealth as a whole, the highest percentage of respondents who had or have diabetes was reported among Black, non-Hispanics at 9.6%, followed by Hispanics at 8.5%, White, non-Hispanics at 6.2%, and Asians at 4.5%. The numbers of respondents by race were too few to provide meaningful data within CHNA 9. There is, however, data by race, related to diabetes hospitalizations in CHNA 9. As reflected in the following chart, Black, non-Hispanics have a rate of diabetes related hospitalizations that is three times that on White, non-Hispanics (i.e., at 952.0 versus 314.7 respectively).

Diabetes Related In-Patient Hospitalizations: CHNA 9

	Area Count	Area Age Specific Rate	State Age Specific Rate
Total	956	386.7	383.4
Race			
White, Non-Hispanic	**785**	**338.4**	**314.7**
Black, Non-Hispanic	**37**	**1025.3**	**952.0**
Asian Pacific Islander, Non-Hispanic	**N/A**	**N/A**	**179.5**
Hispanic.	**38**	**452.8**	**486.7**

Similarly, as noted in the **Mortality** section of this report, within the Commonwealth as a whole, the highest percentage of respondents who had or have diabetes was reported among Black, non-Hispanics at 9.6%, followed by Hispanics at 8.5%, White, non-Hispanics at 6.2% and Asians at 4.5%. It is of note that not only was diabetes identified by the large majority of focus groups as a major health condition, in the groups with Latino participants; it was listed by almost all of the Latino participants in each group.

Percent of Adults Who Had or Have Diabetes by Level of Education (2003 – 2008)



Among CHNA 9 respondents with less than a high school education the percentage of respondents who had or have diabetes was much lower that reported among respondents with less than a high school education in the Commonwealth. The CHNA 9 percentages were also lower for respondents who were high school graduates and respondents who had some college. However, among college graduates, there was a higher percentage of adults with diabetes in CHNA 9 than that reported in the Commonwealth.

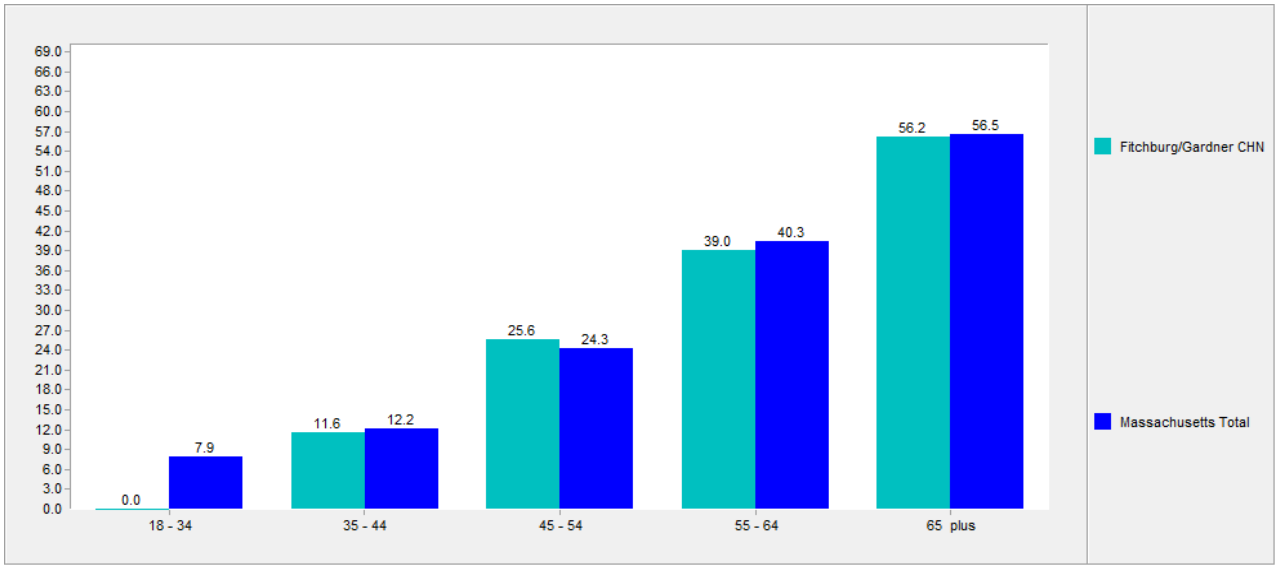
As noted throughout this section, topics related to BRFSS data are discussed throughout this report. Please refer to the **Executive Summary**, **Mortality**, and **Primary Care Manageable Hospitalizations** sections for additional quantitative and qualitative data related to diabetes.

HIGH BLOOD PRESSURE

Within Massachusetts, 25% of the Behavioral Risk Factor Surveillance System (BRFSS) respondents in the 2003 – 2008 time period reported that they had been diagnosed with high blood pressure in their lifetimes. Within CHNA 9, this percentage was comparable at 23.5%.

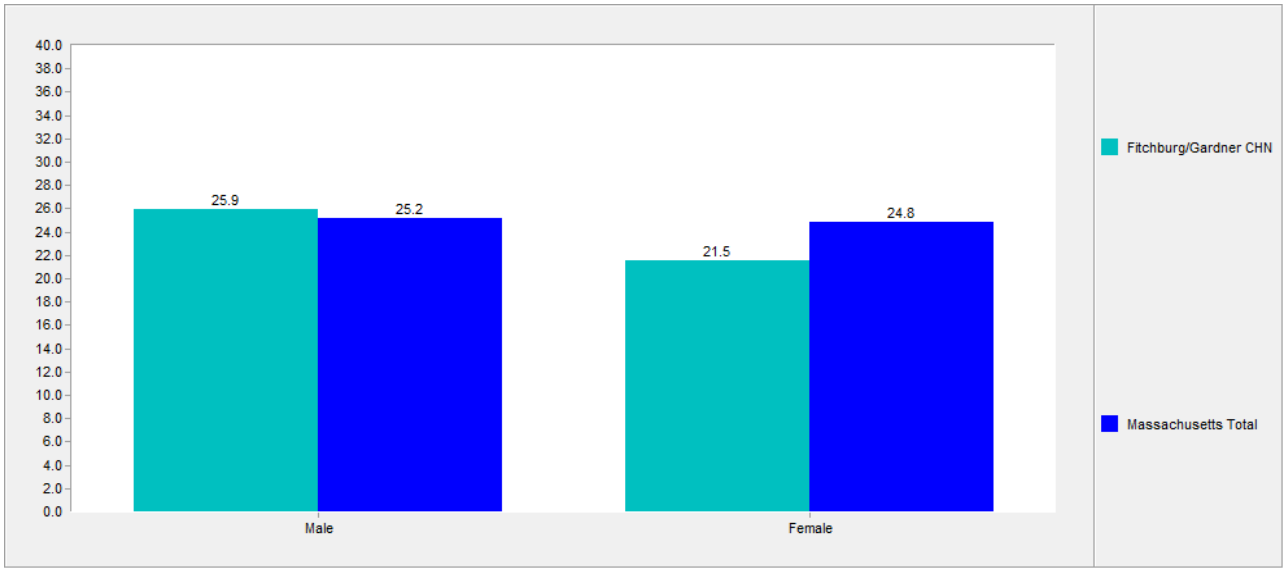
When this data is broken down by age group, the percentage of CHNA 9 respondents who were diagnosed with high blood pressure was slightly higher than the State for the 45 – 54 age group. However, the percentage of respondents who were diagnosed with high blood pressure was slightly lower in CHNA 9 for all other age groups. Among the 18– 34 age group, the numbers were too small to provide meaningful data in CHNA 9.

Percent of Adults Diagnosed with High Blood Pressure in their Lifetime by Age (2003 – 2008)



A slightly higher percentage of adult men in CHNA 9 were diagnosed with high blood pressure at 29.9% than adult men in the Commonwealth at 25.2%. However, the percentage of adult women in CHNA 9 who were diagnosed with high blood pressure was lower at 21.5% than the State at 24.8%.

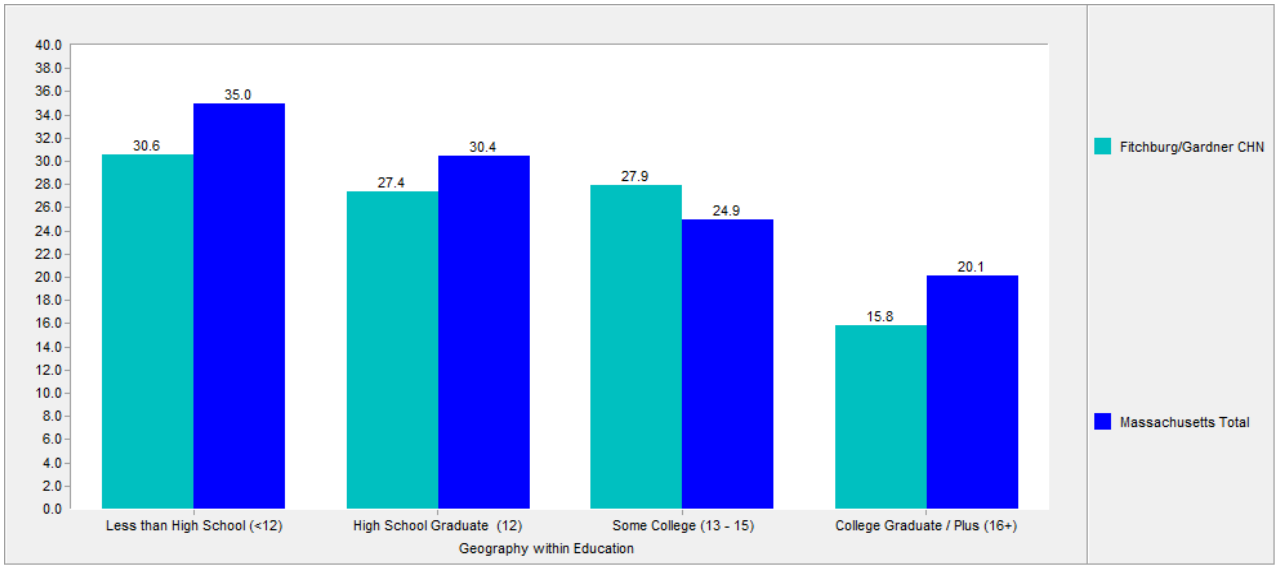
Percent of Adults Diagnosed with High Blood Pressure in their Lifetime by Gender (2003 – 2008)



The numbers of respondents by race were too few to provide meaningful data within CHNA 9. Within the Commonwealth as a whole, the highest percentage of respondents who were diagnosed with high blood pressure was reported among Black, non-Hispanics at 29.6%, followed by White, non-Hispanics at 25.9%, Hispanics at 20.7%, and Asians at 6.8%.

Among CHNA 9 respondents with less than a high school education, who were high school graduates and who were college graduates, the percentage of respondents who were diagnosed with high blood pressure was much lower than that reported among respondents with the corresponding level of education in the Commonwealth. However, among CHNA 9 residents with some college, there was a higher percentage of adults who were diagnosed with high blood pressure than that reported in the Commonwealth among residents with some college.

Percent of Adults Diagnosed with High Blood Pressure in their Lifetime by Level of Education (2003 – 2008)



The high rates of Cardiovascular Disease mortality (CVD) reflected in the quantitative data in this section were also reflected in the concerns identified in the community focus groups. CVD was identified by all focus groups as a health condition which participants and/or family members face. When identifying CVD as a health concern, community members utilized the following terms in describing their conditions: stroke, heart disease, heart attack, high blood pressure, heart murmurs, congestive heart failure, "having a pacemaker", and enlarged heart. Community members also listed the related conditions and risk factors such as high cholesterol and high blood pressure.

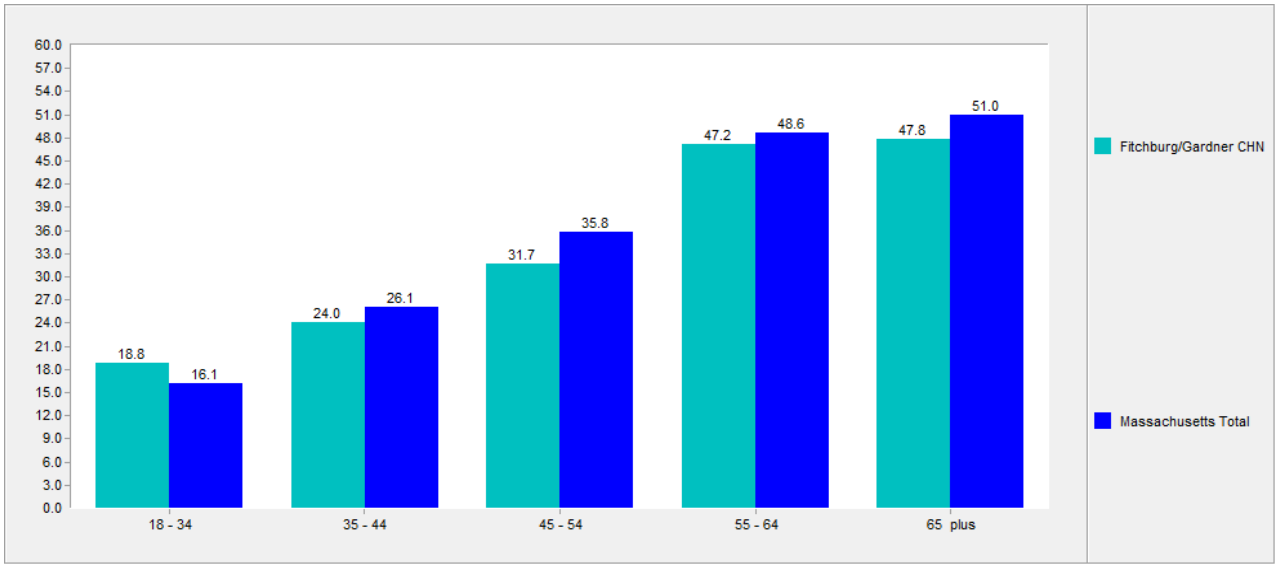
As noted above, topics related to BRFSS data are discussed throughout this report. Please refer to the **Executive Summary**, **Mortality**, **and Primary Care Manageable Hospitalizations** sections for additional quantitative and qualitative data related to high blood pressure and cardiovascular disease.

High Cholesterol

Within Massachusetts, 34.6% of the Behavioral Risk Factor Surveillance System (BRFSS) respondents in the 2003 – 2008 time period reported that they had been diagnosed with high cholesterol in their lifetimes. Within CHNA 9, this percentage was comparable at 32.8%.

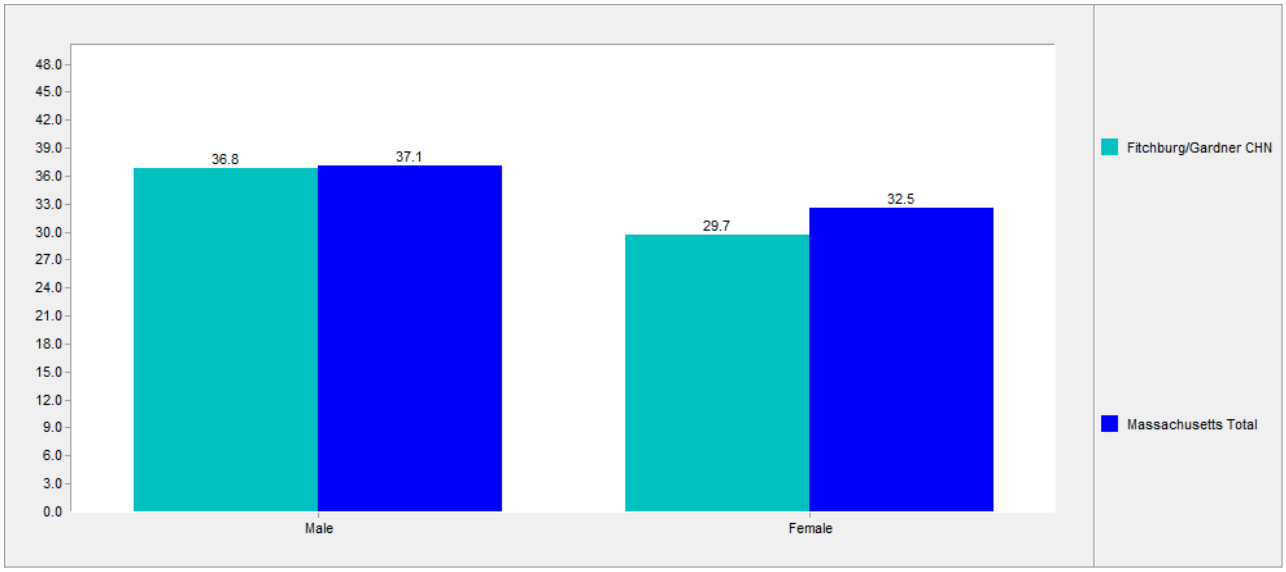
High cholesterol was frequently identified as a concern by focus groups participants.

Percent of Adults Diagnosed with High Cholesterol in their Lifetime by Age (2003 – 2008)



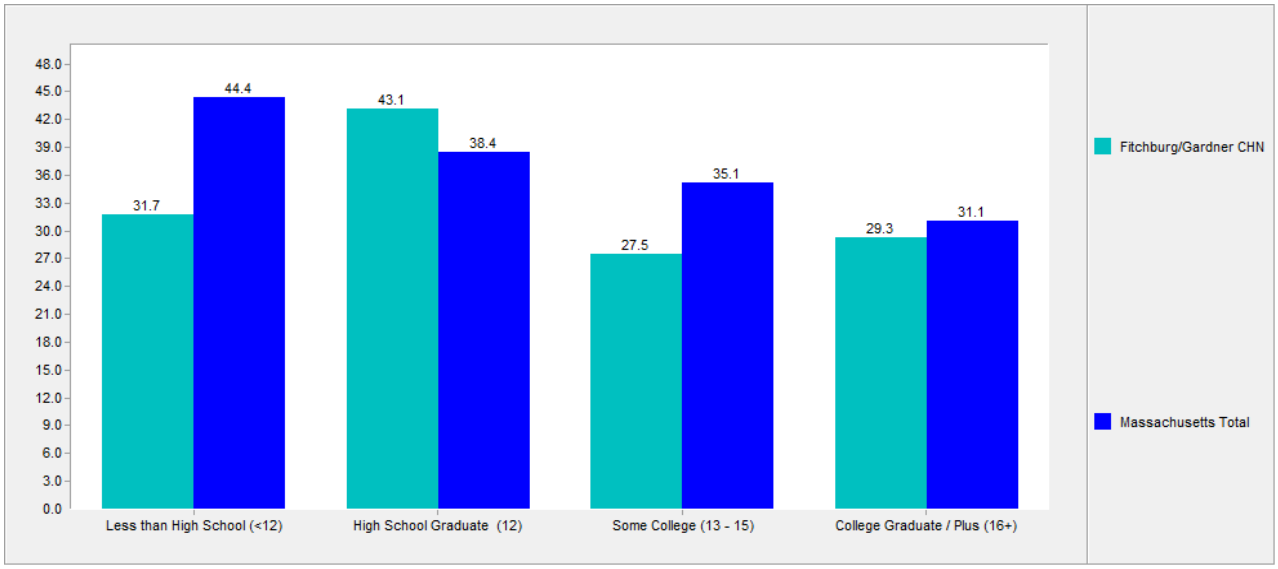
When this data is broken down by age group, the percentage of CHNA 9 respondents who were diagnosed with high cholesterol was lower than the State for all age groups except the 18-34 age group.

Percent of Adults Diagnosed with High Cholesterol in their Lifetime by Gender (2003 – 2008)



Within both CHNA 9 and the Commonwealth a higher percentage of adult men have been diagnosed with high cholesterol than adult women. The percent of adults with high cholesterol in CHNA 9 was lower for both men and women than the corresponding percent of men and women with high cholesterol in the Commonwealth.

Percent of Adults Diagnosed with High Cholesterol in their Lifetime by Level of Education (2003 – 2008)



Among CHNA 9 respondents with less than a high school education and those who had some college, the percentage of respondents who were diagnosed with high cholesterol was much lower than that reported among respondents with the corresponding level of education in the Commonwealth. Among college graduates, the percentage was also lower in CHNA 9 than the State. However, among CHNA 9 residents who were high school graduates, there was a higher

percentage of adults who were diagnosed with high cholesterol than that reported in the Commonwealth among residents who were high school graduates.

The numbers of respondents by race were too few to provide meaningful data within CHNA 9. Within the Commonwealth as a whole, the highest percentage of adults diagnosed with high cholesterol in their lifetime was reported among White, non-Hispanics at 35.5%, followed by Hispanics at 33.1%, Black non-Hispanics at 27.6%, and Asians at 23.8%.

As described in the **Cardiovascular Disease (CVD) Mortality Rates** section earlier in this report, cardiovascular disease was identified as one of the top three concerns identified across focus groups. As noted, CVD was described by community members to range a variety of health concerns (and related risk factors including**:** stroke, heart disease, heart attack, high blood pressure, heart murmurs, congestive heart failure, "having a pacemaker", and enlarged heart).

As noted in this section, topics related to BRFSS data are discussed throughout this report. Please refer to the **Executive Summary**, **Mortality**, **and Primary Care Manageable Hospitalizations** sections for additional quantitative and qualitative data related to high cholesterol.

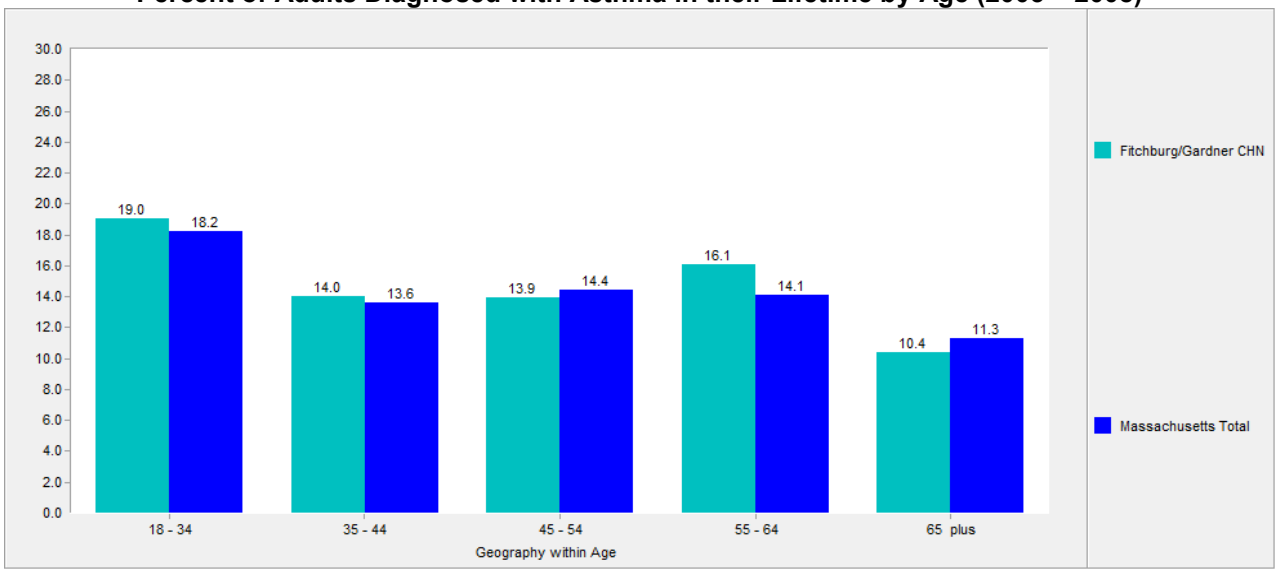
Asthma

Within Massachusetts, 14.7% of the Behavioral Risk Factor Surveillance System (BRFSS) respondents in the 2003 – 2008 time period reported that they had been diagnosed with asthma in their lifetimes. Within CHNA 9, this percentage was comparable at 15.2%.

When this data is broken down by age group, the percentage of CHNA 9 respondents who were diagnosed with asthma was higher than the State for all age groups except the 45-54 and 65 plus age groups.

As noted earlier in the **Asthma Mortality Rate** section, the qualitative data identified asthma as a major health concern. Asthma was mentioned most often in the Latino and Laotian communities.

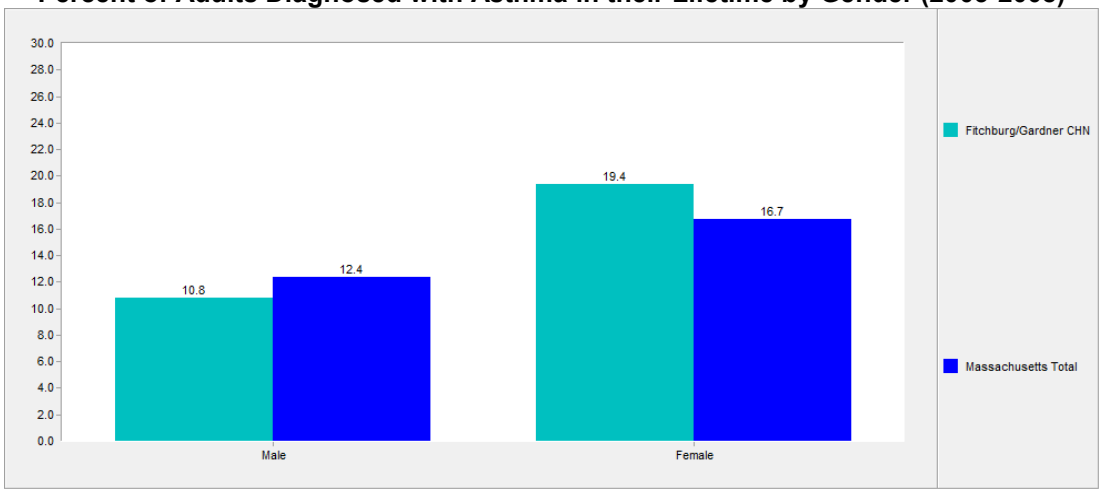
Percent of Adults Diagnosed with Asthma in their Lifetime by Age (2003 – 2008)



Within both CHNA 9 and the State, a much higher percentage of adult women have been diagnosed with asthma than adult men. The percent of adult women with asthma was higher in

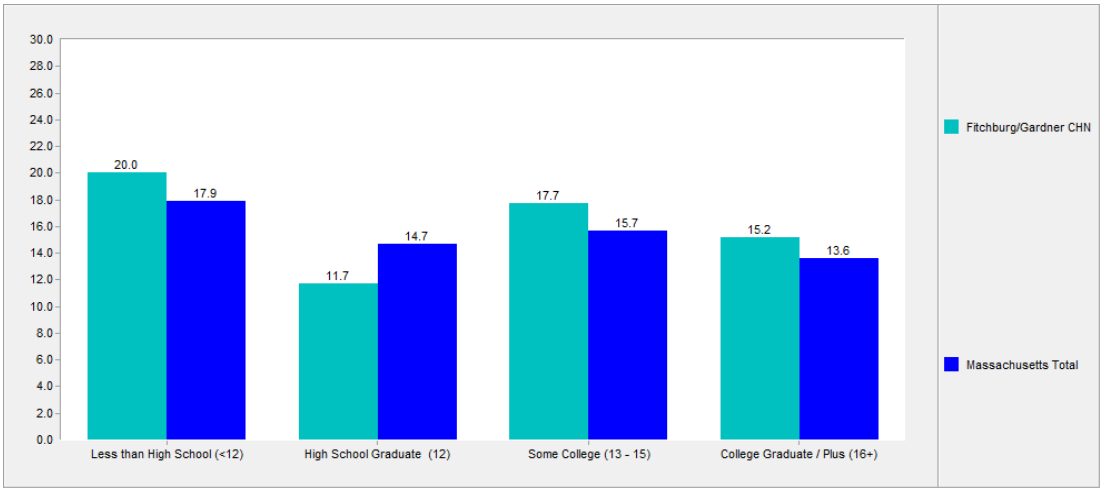
CHNA 9 at 19.4% than in the Commonwealth at 16.7%. However, among adult men, CHNA 9 had a lower percent of asthma diagnoses at 10.8% versus the State at 12.4%.

Percent of Adults Diagnosed with Asthma in their Lifetime by Gender (2003-2008)



Within the Commonwealth as a whole, the highest percentage of adults diagnosed with asthma in their lifetime was reported among Hispanics at 16.7%. Within CHNA 9, the highest percentage of adults with asthma was also reported among Hispanics at 16.8%. Asthma was reported among 14.6% of White, non-Hispanics in the Commonwealth and 15.1% of White, non-Hispanics in CHNA 9. Asthma percentages in the Commonwealth were 15.6% for Black non-Hispanics and 8.7% for Asians. The numbers of respondents by race were too few to provide meaningful data within CHNA 9 for Black, non-Hispanics or Asians.

Percent of Adults Diagnosed with Asthma in their Lifetime by Level of Education 2003-2008)



Among CHNA 9 respondents at all levels of education except high school graduates, the percentage of respondents who were diagnosed with asthma was higher than that reported among respondents with the corresponding level of education in the Commonwealth. However, among high school graduates, the asthma percentage was lower in CHNA 9 than the State.

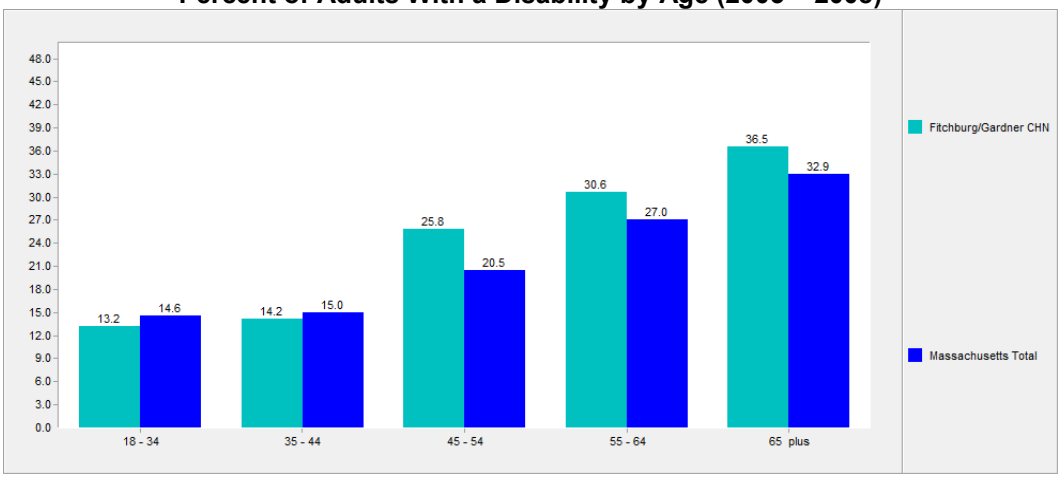
As noted above, topics related to BRFSS data are discussed throughout this report. Please refer to the **Executive Summary**, **Mortality**, **and Primary Care Manageable Hospitalizations** sections for additional quantitative and qualitative data related to asthma.

Disability

Within Massachusetts, 20.7% of the Behavioral Risk Factor Surveillance System (BRFSS) respondents in the 2003 – 2008 time period reported having a disability. Within CHNA 9, this percentage was comparable at 21.7%.

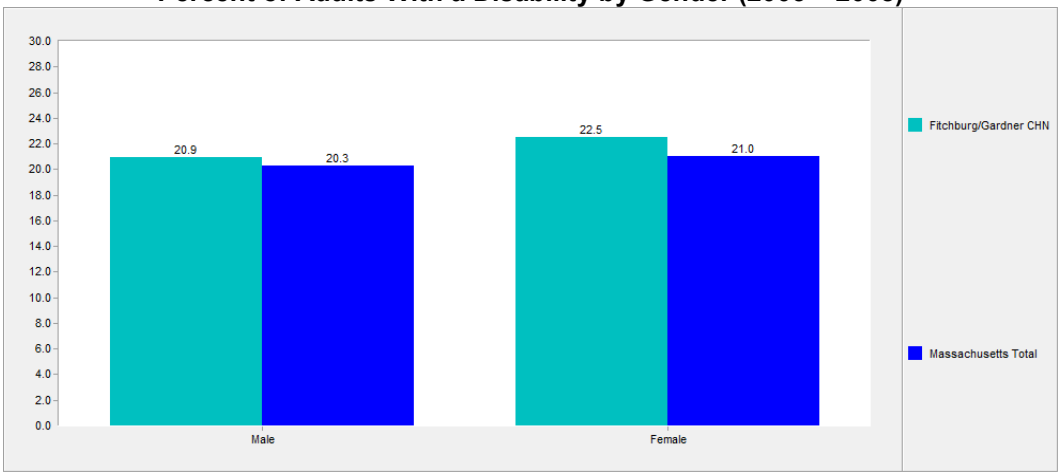
When this data is broken down by age group, the percentage of CHNA 9 respondents who had a disability was lower than the State for the younger age groups (18 – 34 and 35 -44)., but higher than the State for the older age groups (45 – 54, 55 – 64 and 65 plus).

Percent of Adults With a Disability by Age (2003 – 2008)



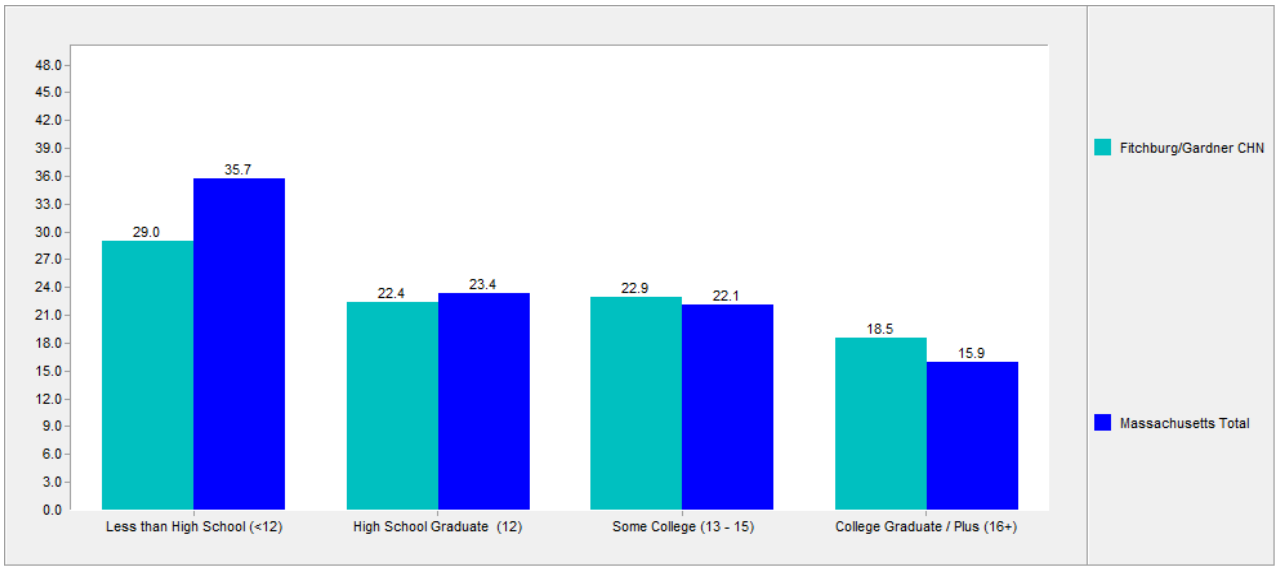
Within CHNA 9 a slightly higher percentage of men reported having a disability at 20.9% than men in the Commonwealth overall at 20.3%. Among women the percentage reporting a disability within CHNA 9 was 22.5%, higher than that reported by women in the Commonwealth overall at 21%.

Percent of Adults With a Disability by Gender (2003 – 2008)



The numbers of respondents by race were too few to provide meaningful data within CHNA 9. Within the Commonwealth as a whole, the highest percentage of adults reporting a disability was among White, non-Hispanics at 21.1%, followed by Hispanics at 20.1%, Black non-Hispanics at 18.9%, and Asians at 6.9%.

Percent of Adults With a Disability by Level of Education (2003 – 2008)



Among CHNA 9 respondents with less than a high school education, the percent of adults reporting a disability was much lower at 29% than adults in the Commonwealth overall with less than a high school education at 35.7%. The percent of respondents with a disability was also lower for high school graduates in CHNA 9 as compared with the Commonwealth. However, for those with some college and for college graduates, the percent of respondents who reported a disability was higher in CHNA 9 than in the Commonwealth overall at 22.9% versus, 22.1% and 18.5% versus 15.9%, respectively.

In the Qualitative data, community members and stakeholders did not utilize the term “disability” with any frequency. However, “disabling” medical, physical and psychiatric conditions (discussed in prior sections of this report) that might otherwise be considered “disabilities” were discussed.

Summary Comments

As discussed throughout this report, *The Community Health Assessment of North Central Massachusetts* has been a multi-year partnership involving numerous groups, community members, and stakeholders examining the health challenges and strengths of the region. The authors of this report recognize that this document is voluminous; however, hope that the range, detail, and cross referencing of data will be useful in the planning and development of systemic strategies to address these complex issues. Recognizing that readers may review the entire document or refer exclusively to sections that address the specific health issues they are examining, the authors purposefully cross referenced (and repeated, when relevant) information across sections. Regardless of the reader's particular health interest or perspective, the authors encourage all readers to, at a minimum, read the **Executive Summary** section of this report for an overview of the unique partnerships, methodology, focus on health disparities, and overall data summary contained in this report.

As highlighted in this report, many of the health concerns that residents of North Central Massachusetts face are considered ***preventable chronic conditions*** that could be prevented with changes to specific risk factors and health behaviors. This indicates that there are interventions and initiatives that we, as community members and agencies, can undertake in our own lives and with our clients and employees, which can lead to improved health for our region. In addition, research has shown that preventable chronic diseases are greatly impacted and exacerbated by sociodemographics and social determinants, and health and economic conditions. In difficult economic times, such as those we are currently facing, health behavior changes are difficult to initiate and sustain. Racial and ethnic minorities bear the additional burden of racism and language barriers which compound these challenges.

As a region, we must focus on assisting our families, our clients, and our employees, to live healthier lives. We can learn from the successful systemic initiatives like the Massachusetts' anti-tobacco campaign, and come together as a community, with participation from all sectors, to improve access not just to health care, but to other basic goods and services which enable residents to make healthier lifestyle choices. It is also essential that we recognize and utilize the many strengths and resources of our communities.

It is important to note that prior *Community Health Assessments* have served as catalysts to the creation of community resources and the development of creative responses to complex health issues. We encourage readers of this report, from all sectors of the community, to utilize this document to continue to enhance the health of the region.