



## Section II Statewide Data Report

### Introduction

The health outcomes for women, infants and children in Massachusetts compare favorably with those of the United States. Massachusetts has infant mortality and teen birth rates that are among the lowest in the country. However, there is still much room to improve maternal and child health as certain health indicators have not improved, and substantial disparities persist in many health outcomes.

Massachusetts has examined seventy two indicators across nine outcome domains using the most recent and relevant data available to inform the needs of maternal, infant, and early childhood home visiting programs throughout the state. This statewide data report includes legislatively mandated indicators regarding infant and child health outcomes (including premature birth, low birth weight infants, and infant mortality), poverty, crime, domestic violence, school drop-out rate, substance abuse, unemployment, and child maltreatment. Additional indicators that provide a more comprehensive profile of the maternal, infant and child health needs throughout the Commonwealth are also presented to supplement the assessment of the needs and resources of Massachusetts communities. The indicators are organized into domains corresponding to the program outcomes specified in the legislation, including: Maternal and Infant Health; Child Health and Development; Child School Readiness; Child Maltreatment and Unintentional Injuries; Parenting Stressors; Crime and Domestic Violence; Family Economic Self-sufficiency; and Access to Care. An additional domain was added to include information regarding Vulnerable Populations in the Commonwealth. Within each domain, a table is presented and the indicators are organized according to whether they were required in the federal guidance (highlighted in blue) or additional indicators included to enhance the identification of at-risk communities (not highlighted). A narrative discussion within each domain provides more information on the required indicators. Narrative discussions for the additional state indicators are presented in Appendix F. The statewide analysis provides a baseline for comparison with data from individual communities.

The statewide analysis includes several MCH indicators from Healthy People 2020. Data are examined overall for the state and compared with national data, when available, to determine whether the Commonwealth fares better, the same, or worse on each indicator. When appropriate, the statewide analysis also includes an examination of disparities in health outcomes by characteristics such as race/ethnicity, socioeconomic status, and geographic region. These indicators are also mapped to the home visiting outcome domain to which they most closely correspond. Much of the data included in the statewide analysis come from the recent Title V MCH Block Grant application submitted to HRSA/MCHB on July 15, 2010.

**Maternal and Infant Health**

In 2008, there were 1,357,864 women (20.9% of the state's 6,497,967 estimated population) aged 15-44 years residing in Massachusetts, representing the population of women of childbearing age in the state.<sup>1</sup> In 2008, the most recent year for which birth data are available, the number of births to Massachusetts residents was 76,969, down from 77,934 in 2007.<sup>2</sup> The number of births to Massachusetts residents has declined by 16.8% since 1990 when births totaled 92,461. The birth rate (the total number of births per 1,000 women aged 15-44 years) declined by 9% between 1990 and 2008 from 62.1 to 56.5.<sup>3</sup> The 2008 Massachusetts birth rate was 19% below the national fertility rate of 69.5 per 1,000 women aged 15-44 years.<sup>4</sup>

**Figure II.1**

<i>Data Indicators</i>	<i>Statewide rate</i>
<b>Percent: # live births before 37 weeks/total # live births (2004-2008)</b>	9.0% <sup>5</sup>
<b>Percent: # resident live births less than 2500 grams/ # resident live births (2004-2008)</b>	7.9% <sup>6</sup>
<b>Infant mortality rate per 1,000 live births (2004-2008)</b>	4.9 per 1,000 <sup>7</sup>
% less than adequate prenatal care * (2008)	16.5% <sup>8</sup>
% of mothers <u>not</u> intending to breastfeed * (2004-2008)	20.0% <sup>9</sup>
% women smoking during pregnancy * (2004-2008)	7.3% <sup>10</sup>
Overweight and obesity childbearing years (ages 18-44)* (2006 - 2008)	Overweight: 41.8% Obese: 17.2% <sup>11</sup>
Maternal overweight and obesity prior to pregnancy (2007/2008)*	Overweight: 21.7% Obese: 16.6% <sup>12</sup>
# admissions to substance use disorder programs for pregnant women (2008)*	753 (count) <sup>13</sup>
% women reporting binge drinking or heaving drinking ages 18-44 (2006-2008)*	Binge: 18.5% Heavy: 5.8% <sup>14</sup>
% of alcohol use or binging during the last three months of pregnancy (2007-2008)*	Any alcohol last 3 mo: 11.5% Binging last 3 mo: 0.6% <sup>15</sup>
Rate of maternal deaths per 100,000 live births (2008)*	10.3 per 100,000 <sup>16</sup>
Rate of pregnancy-associated deaths per 100,000 live births (2008)*	29.7 per 100,000 <sup>17</sup>
% short (< 12 months) inter- pregnancy intervals by maternal age (2008)*	<20 years: 49.4% 20-34 years: 17.4% 35 + years: 11.3% <sup>18</sup>
% women reporting always or often experiencing depressive symptoms in post partum period (2007-2008)*	8% <sup>19</sup>
% ER visits for mental health or related causes for women ages 15-44 (2005-2007)*	17.1% <sup>20</sup>
% ER visits for mental health or related causes for men ages 15-44	20.2% <sup>21</sup>

(2005-2007)*	
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Legislatively required indicators are shaded.

\*Additional indicators are described in Appendix F

### ***Premature births***

The prevalence of preterm delivery, a pregnancy complication defined as the delivery of an infant before 37 weeks of gestation, increased by 22.2% in Massachusetts between 1996 and 2008, from 7.2% to 8.8%, which is within 20% of the Healthy People (HP 2010) goal of 7.8%.<sup>22</sup>

- In 2008, Black, non-Hispanic mothers continued to have the highest percentage of preterm infants (10.6%) compared with Hispanics (9.4%), White, non-Hispanics (8.5%), and Asians (7.9%)<sup>23</sup>
- The percentage of late preterm births (34-36 weeks gestation) has increased approximately 3% annually in the past decade, from 5.2% in 1997 to 6.2% in 2008<sup>24</sup>
- The percentage of infants delivered very early (before 28 weeks of gestation) has remained stable since 1997 at around 0.6%
- In 2008, Black, non-Hispanic mothers had the highest proportion of infants delivered very early (1.5%), a percentage more than double that of White, non-Hispanics (0.5%) and Asians (0.4%)<sup>25</sup>

Five years of birth certificate data were examined to determine the Massachusetts communities with the highest prevalence of preterm birth. From 2004-2008, the statewide prevalence of preterm births was 9.0%. Five communities, scattered throughout the Commonwealth, were identified as being very high risk for preterm births:

1. Windsor (Berkshires): 23.3%
2. Granville (Hampden County): 18.9%
3. Otis(Berkshires): 15.5%
4. Wendel (Central): 15.4%
5. Phillipston (Central): 14.5%

### ***Low Birthweight***

Low birthweight infants (LBW, weighing less than 2,500 grams or 5.5 pounds) are at increased risk of medical problems and death compared with infants of normal weight, and are at higher risk of delayed development and poor school achievement later in life. LBW is the greatest contributing factor to infant mortality and, particularly, neonatal mortality.<sup>26</sup> As such, LBW is an infant outcome of particular concern.

LBW as a percentage of births in Massachusetts has increased substantially since 1990, but has remained stable at 7.9% since 2005. Some of the underlying contributors to the incidence of LBW and very low birthweight (VLBW, infants born weighing less than 1,500 grams or 3.3 pounds) births are well known, such as maternal race, maternal age, maternal education, maternal health status prior to pregnancy, maternal smoking, drinking, drug use, and birth order.

- In 2008, 7.8% of resident births in Massachusetts were LBW. Massachusetts ranked 24th in the nation on this indicator and was more than 25% above the HP 2010 goal of 5%<sup>27</sup>
- In 2008, the prevalence of LBW was lowest among infants born to mothers aged 25-29 (7.1%) and 30-34 years (7.1%) and highest among mothers aged < 19 years (9.1%) or 40 years and older (11.1%)

- In 2008, the prevalence of LBW was higher among infants born to Black, non-Hispanic (11.0%), Asian (8.4%) and Hispanic mothers (8.2%) compared with White, non-Hispanic mothers (7.1%)
- In 2008, the prevalence of LBW among teen mothers aged 15-17 years was 9.2% and among teen mothers aged 18-19 years was 9.1%<sup>28</sup>

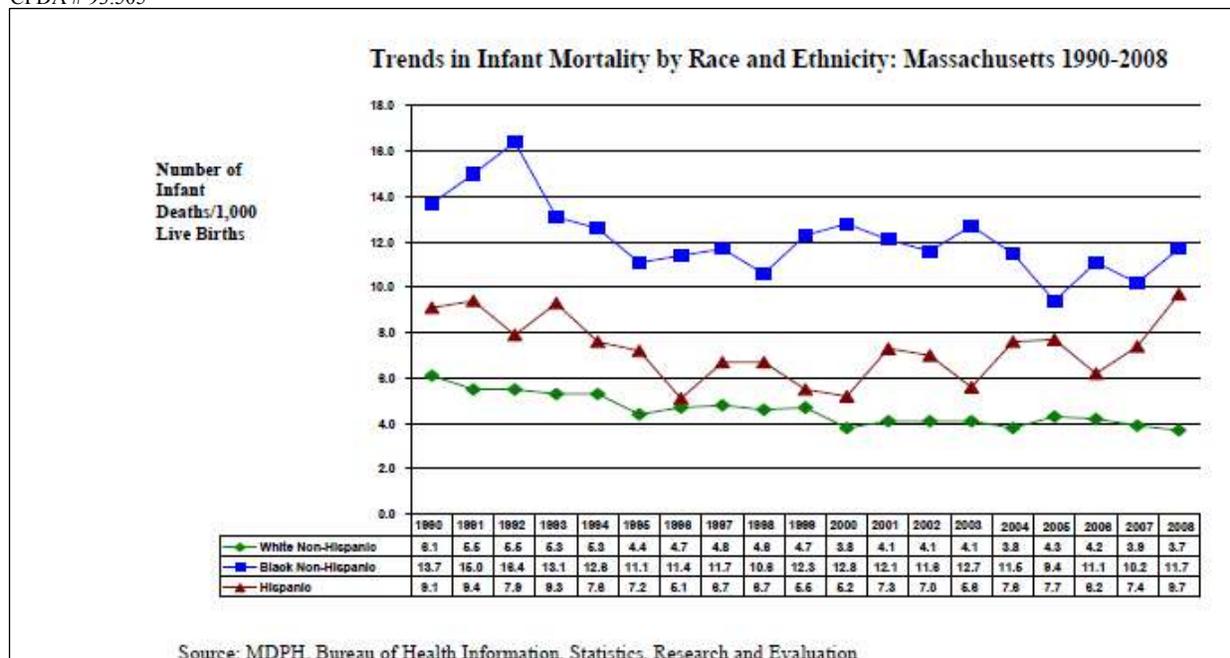
Five years of birth certificate data were examined to determine the Massachusetts towns and cities with the highest rates of LBW infants. From 2004 – 2008, statewide 7.9% of infants were born with a low birthweight. The five communities with the highest rates of LBW infants were:

1. Windsor (Berkshires): 16.7%
2. Plympton (Cape & Islands): 16.0%
3. Stockbridge (Berkshires): 14.8%
4. Wendell (Central): 12.8%
5. Wellfleet (Cape & Islands): 12.8%

### ***Infant Mortality***

Infant mortality, the death of an infant prior to age 1 year from any cause, is a very sensitive indicator of health and social well-being in any given population and is used as the best indicator to measure infant health, the health of a community, and the health of a nation. The HP 2010 objective for overall infant mortality was 4.5 per 1,000 live births; for neonatal mortality was 2.9 per 1,000 live births; and for post neonatal mortality was 1.2 per 1,000 live births. In 2008, there were 382 infant deaths in Massachusetts.

- The infant mortality rate (IMR) has decreased by 29% between 1990 and 2008, from 7.0 deaths per 1,000 live births to 5.0 deaths per 1,000 live births, with a marked decline between 1990 and 2006, but a stabilization in the past few years
- In 2008, the overall IMR was 5.0/1,000 live births, similar to the IMRs in 2007 (4.9), 2006 (4.8) and 2005 (5.1). The 2008 IMR was within 25% of the HP 2010 target of 4.5



**Figure II.2**

Significant demographic disparities in infant mortality exist across the state, as Black, non-Hispanics had a significantly higher IMR (11.7) than White, non-Hispanics (3.7) and Asians (2.7). Black, non-Hispanics did not have a significantly higher IMR than that of Hispanics (7.9), however.

The overall statewide 5-year IMR from 2004-2008 was 4.9. The Massachusetts communities with the highest IMRs were:

1. Gardner (Central): 10.2 per 1,000 live births
2. Rehoboth (Southeast): 9.9 per 1,000 live births
3. Dartmouth (Southeast): 9.9 per 1,000 live births
4. Ludlow (Hampden County): 9.9 per 1,000 live births
5. Southbridge (Central): 9.5 per 1,000 live births

More recent IMR data based on a 3-year IMR from 2006 – 2008 show that several of the cities and towns most at risk for poor maternal and infant health outcomes have higher IMRs when compared with the statewide 3-year IMR of 4.9 deaths per 1,000 live births. These include:

1. Worcester (Central): 10/1,000
2. Springfield (Hampden County): 9.8/1,000
3. Fall River (Southeast): 9.2/1,000
4. Brockton (Southeast): 9.0/1,000
5. New Bedford (Southeast): 8.5/1,000
6. Boston: 6.9/1,000

*Neonatal and Post Neonatal Infant Mortality*

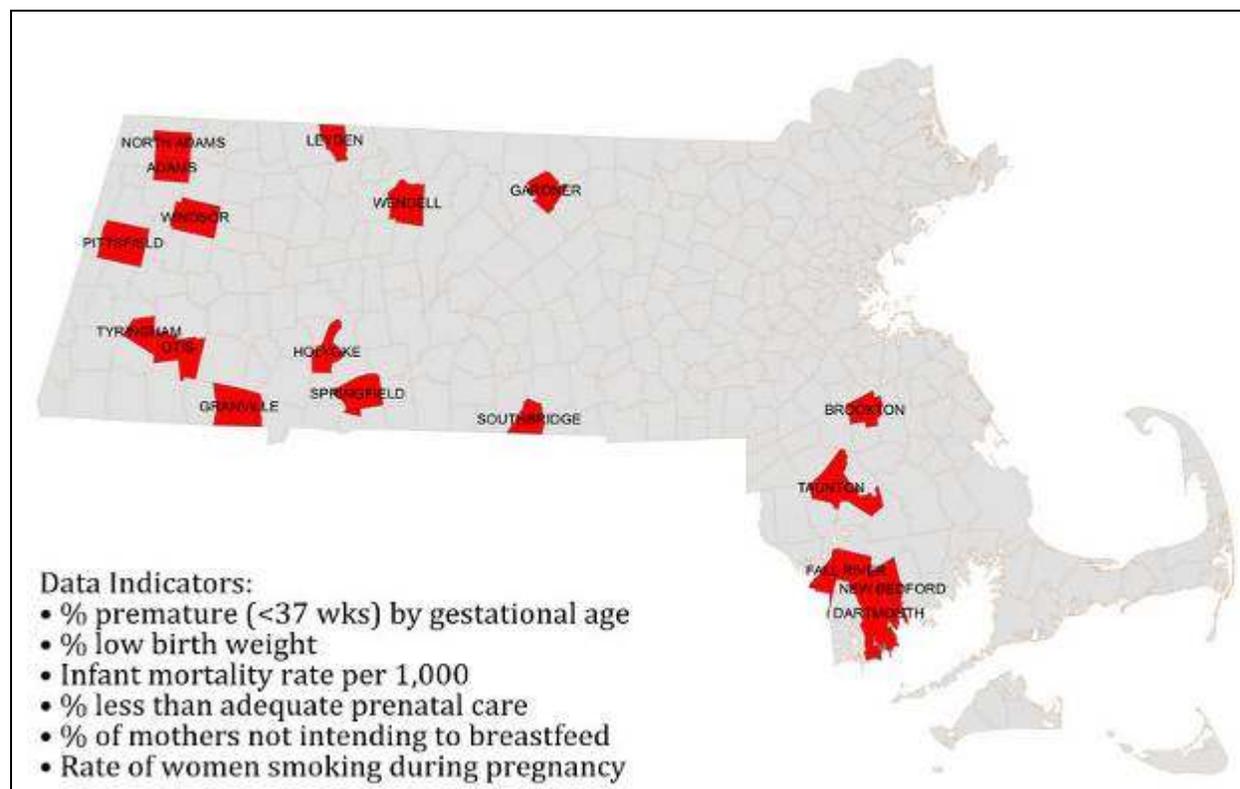
Neonatal (0 to 27 days) and post-neonatal (28 to 364 days) mortality rates among Black, non-Hispanics and Hispanics were consistently higher than the overall state rates while rates among White, non-Hispanic and Asian populations were consistently lower than that of the state.<sup>29</sup>

- In 2008, the state neonatal mortality rate was 3.8 deaths per 1,000 live births, which was 25% higher than the HP 2010 goal of 2.9
- The neonatal mortality rate was 8.6 among Black, non-Hispanics; 6.0 among Hispanics; 3.0 among White, non-Hispanics; and 1.7 among Asians
- In 2008, the state post-neonatal mortality rate was 1.2 deaths per 1,000 live births, which met the HP 2010 goal of 1.2
- The post-neonatal mortality rate was 3.2 among Black, non-Hispanics; 1.9 among Hispanics; 1.0 among Asians; and 0.8 among White, non-Hispanics

***Communities most at risk for poor maternal and infant health outcomes***

All 351 Massachusetts towns and cities were ranked on multiple maternal and infant health outcome indicators. The 18 towns and cities ranked at very high or high risk in this domain were concentrated in the Berkshires, Hampden County and Southeast Massachusetts (Figure II.3).

**Figure II.3 MATERNAL AND INFANT HEALTH**



## Child Health and Development

Among the 6,469,770 residents of Massachusetts in 2008, roughly 32.4%, or 2,096,205, were children and youth aged less than 24 years. The population breakdowns by age were as follows<sup>30</sup>:

- < 5 years: 383,568 (5.9%)
- 5-9 years: 384,444 (5.9%)
- 10-14 years: 399,518 (6.2%)
- 15-19 years: 460,398 (7.1%)
- 20-24 years: 464,984 (7.2%)

Massachusetts is a comparatively wealthy state, and the majority of children have the opportunity to attend a well-funded school, grow up in a healthy built environment, and live free from stress about food and housing security. The 2008 inflation-adjusted estimate for the median family income in Massachusetts was \$64,684, comfortably above the national figure of \$52,175. Only three states (New Jersey, Connecticut, and Maryland) ranked higher than Massachusetts on this scale.<sup>31</sup>

Family socioeconomic status (SES), including income, education level, and number of parents in the home, is positively correlated with indicators of child well-being. Massachusetts has one of the highest SES levels in the nation. In 2009, Massachusetts was the 5th best state in a composite ranking of child well-being based on ten key indicators of child health, education, poverty, and family demographics.<sup>32</sup>

Some other key demographic indicators related to children in Massachusetts include:

- In 2008, 12% of Massachusetts children aged 0-18 years lived in poverty, lower than the national average of 18.2%<sup>33</sup>
- A child born in 2006 in Massachusetts has a life expectancy of 80.2 years, as compared to 78.1 for the nation as a whole<sup>34</sup>
- In 2007, 73.3% of Massachusetts children lived in two-parent (biological or adoptive) households; 5.3% in two-parent (at least one step-parent) households; 16.9% in mother only (no father present) households; and 4.5% in households with other family structures<sup>35</sup>
- The proportion of Massachusetts children living in two-parent (biological or adoptive) households varied by race/ethnicity: 82.8% among white, non-Hispanics, significantly higher than among Hispanics (44.9%), black, non-Hispanics (28.7%), and multi-racial children (58.2%)<sup>36</sup>

As the domain of “Child Health and Development” does not include any required data indicators, a full discussion of each additional state indicator selected is included in Appendix F. However, indicators that directly impacted the domain included in the mapping of cities and towns were asthma hospitalizations per 100,000 and lead poisoning adjusted rate.

Asthma continues to be an issue for youth and young adults, especially for those of elementary school age. Asthma rates are of particular concern in Fall River (29.3 per 100,000), as well as in the Greater Boston area (25.5 per 10,000). Both these communities have higher rates of asthma-

related hospitalizations than the statewide average (14.1 per 10,000). Lead poisoning is a slightly different environmental health concern, since it affects specific communities (especially those with older structures), such as Chelsea, Lynn, New Bedford, and Springfield.

**Figure II.4**

<i>Data Indicators</i>	<i>Statewide Rate</i>
% of children < 18 with asthma (2009)*	10.3% <sup>37</sup>
rate of asthma hospitalizations & asthma related Hospitalizations per 100,000 individuals (all ages) (2008)*	158.5 per 100,000 <sup>38</sup>
% lead poisoning among children 6months- 72months of children tested (2004-2008)*	0.8% <sup>39</sup>
% childhood overweight and obesity in WIC children < age 5 (2009)*	16.9%: Overweight 14.7%: Obese <sup>40</sup>
% 4 <sup>th</sup> graders with ≥85 BMI for age percentile (2008-2009)*	35.4% <sup>41</sup>
Children’s Medical Security Plan (CMSP) caseload (count) (2010) *	14,964 <sup>42</sup>
Infant and Early Childhood Mental Health – % estimate of children 0 – 5 with one or more mental health risk factors (2008)*	26% <sup>43</sup>
% children with MassHealth screened for the Children’s Behavioral Health Initiative (CBHI) by age (2010)*	35.4%: <6 months 65.1%: 6mos- 2 yrs 70.2%: 3yrs – 6yrs 73.1%: 7yrs-12yrs 67.0%: 13yrs-17yrs 28.1% 18yrs-20yrs <sup>44</sup>

\*Additional indicators are described in Appendix F

***Communities most at-risk for poor child health and development outcomes***

All 351 Massachusetts towns and cities were ranked on two child health and development outcome indicators: asthma and lead poisoning. The 18 towns and cities ranked at very high or high risk in this domain were scattered through Central Massachusetts, in the Boston, North Shore and Northeastern regions, and in the Southeast Region of the state. (Figure II.5).



have risen sharply.<sup>51</sup> Across the United States, the total dropout rate, which represents the percentage of youth aged 16-24 years who were not enrolled in school and had not earned a high school credential, was 8.0% in 2008.<sup>52</sup> Both educational attainment and lifetime earning potential are important factors to consider in assessing the need for home visiting services in the Commonwealth.

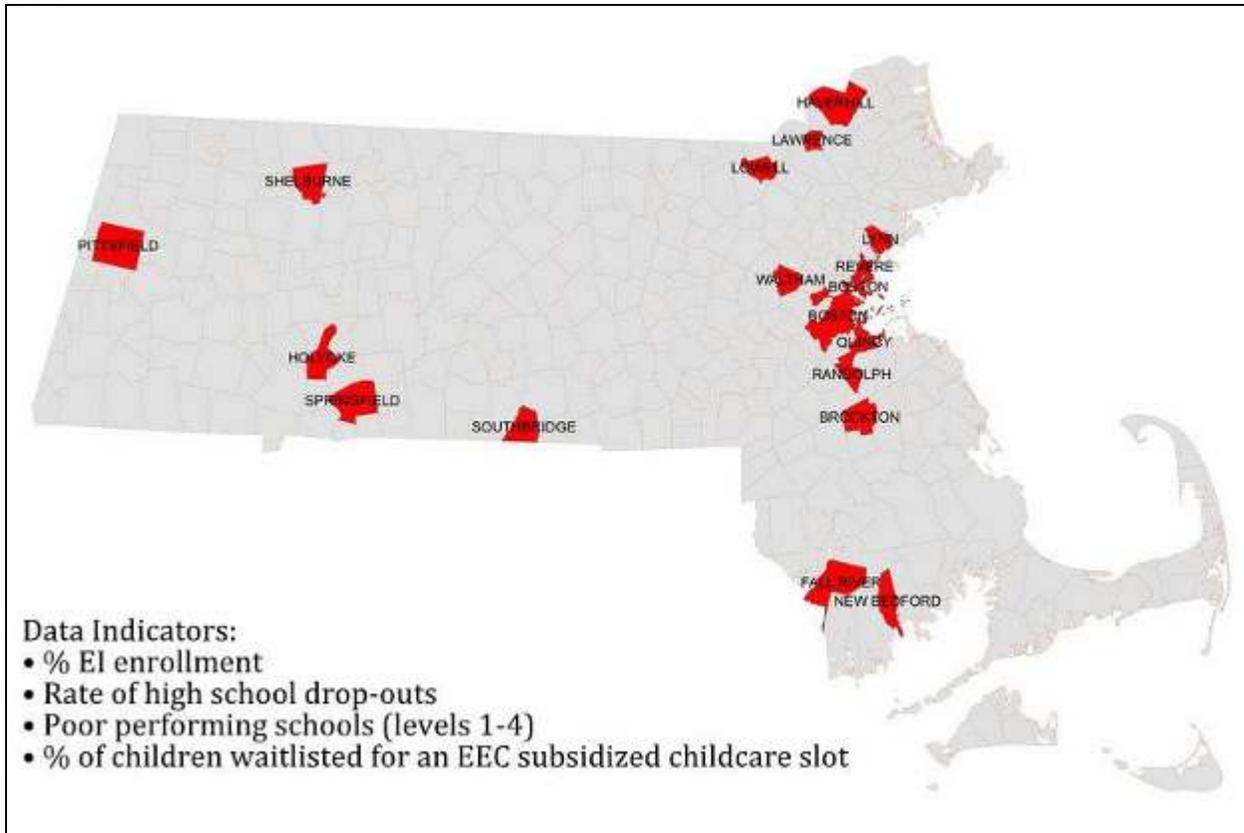
The Department of Elementary and Secondary Education tracked the percentage of students in grades 9-12 who dropped out of school between July 1 and June 30 prior to the listed year and who did not return to school by the following October 1. Dropouts are defined as students who leave school prior to graduation for reasons other than transfer to another school. Statewide, Massachusetts had a dropout rate of 2.9% during the 2008-2009 school year. However, some communities experienced much higher dropout rates:

1. Provincetown (Cape& Islands): 25.0%\*
2. Lawrence (Northeast): 10.2%
3. Holyoke (Hampden County): 9.8%
4. Springfield (Hampden County): 9.6%
5. Chelsea (North Shore): 9.4%

\*2008-09 was an anomaly for Provincetown, which has had a rate of between 0 and 2.8% since 2001-02 (these rates translate to 1 to 2 students per year).

### ***Communities most at risk for poor school readiness and school performance***

All 351 Massachusetts towns and cities were ranked on multiple outcome indicators for school readiness and school performance. These included indicators for younger children (% enrollment in EI and waiting lists for EEC childcare slots) and older children (poor performing school and high school dropout rates). The 18 towns and cities ranked at very high or high risk in this domain were scattered throughout the Commonwealth. (Figure II.7)



**Figure II.7 CHILD SCHOOL READINESS**

**Child Maltreatment and Unintentional Injuries**

Prevention of child maltreatment and unintentional injuries in the designated populations is a priority within the legislation, but it is also a dedicated focus of the Commonwealth. Again, the data reveal a cluster of towns in Berkshire County (Adams, Pittsfield, and North Adams) that should remain a focus of our efforts in the future.

**Figure II.8**

<i>Data Indicators</i>	<i>Statewide Rate</i>
Substantiated reports of child maltreatment for children 0 < 9 years (2009-2010)	19.5 per 1,000 <sup>53</sup>
Percent: reported substantiated maltreatment by type	
- Neglect (as % of all maltreatment)	92% (Neglect)
- Physical Abuse (as a % of all maltreatment)	13% (Physical)
- Sexual Abuse (as a % of all maltreatment) (2008)	2% (Sexual) <sup>54</sup>
Rate inpatient hospitalizations, observation stays and emergency department discharges associated with <u>unintentional injury</u> (summed), ages 0-9 (FY2008)*	10132.4 per 100,000 <sup>55</sup>

<b>Data Indicators</b>	<b>Statewide Rate</b>
% infant deaths due to SIDS/unintentional injury (preventable deaths) (2008)*	3.2%: SIDS 1.1%: Unintentional injury <sup>56</sup>

Legislatively required indicators are shaded.

\*Additional indicators are described in Appendix F

### **Child Maltreatment**

The Centers for Disease Control and Prevention defines child maltreatment as “any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child.”<sup>57</sup> Acts of commission, or child abuse, include physical abuse, sexual abuse, and psychological abuse. Acts of omission, or child neglect, include failure to provide and failure to supervise. Child maltreatment presents both social and public health problems in the United States.

In 2008, the Administration for Children and Families (ACF) reported that approximately 772,000 children in the United States were victims of child maltreatment, translating into a rate of 10.3 per 1,000 children in the population.<sup>58</sup> However, there were over 3.7 million children who received CPS investigations or assessments.<sup>59</sup> An estimated 1,460 children died because of abuse or neglect in the US in 2008.<sup>60</sup>

Prevention of child injuries and maltreatment is one of the eight outcome domains given priority in the Home Visiting Needs Assessment. The Massachusetts Department of Children and Families (DCF) provides data to establish a baseline for the current status of child abuse and neglect throughout the Commonwealth by tracking reports of children who have been alleged to have been abused or neglected, investigations on those children where appropriate, and Support decisions where DCF determines maltreatment has occurred.

From June 2009 – May 2010, the Department of Children and Families (DCF) reported that the statewide rate of supported/substantiated child maltreatment was 19.5 per 1000 for children ages 0 – < 9 years. Stratified by cities and towns from June 2009 – May 2010 the following towns/cities had the highest rates of child maltreatment:

1. North Adams (Berkshires): 74.3/1,000
2. Erving (Central MA): 69.2/1,000
3. Pittsfield (Berkshires): 66.8/1,000
4. New Bedford (Southeast): 64.5/1,000
5. Adams (Berkshires): 59.2/1,000

From 2007 to 2008, the number of children with supported/substantiated allegations of neglect rose 10% statewide. Over the same period, physically abused children increased 12% and sexually abused children rose 16%.

Annual changes in the numbers of victimized children within DCF Regions mask fluctuations at the 29 DCF area-offices. These fluctuations can appear to be significant and very concerning particularly with supported allegations of physical and sexual abuse. This is due to these two

types of abuse involving smaller numbers of children and annual numbers when they change, upward or downward, can appear dramatic.

Neglect, physical abuse, and sexual abuse as a percentage of all maltreatment were highest in the DCF areas presented below. For each DCF office, the table shows how common a particular form of maltreatment is relative to other types of maltreatment<sup>61</sup>:

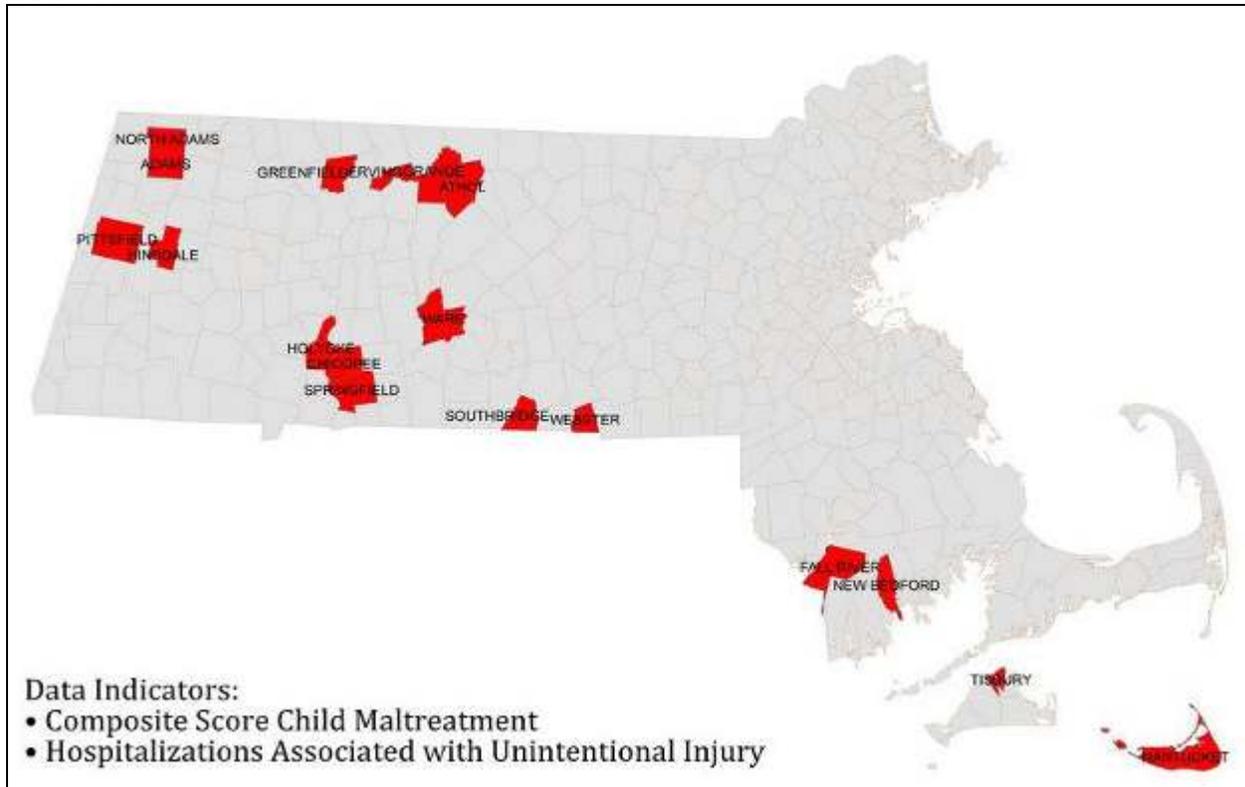
<b>Type of Allegation Supported as a Percentage of All Maltreatment Supported at DCF Areas</b>					
<i>Neglect</i>		<i>Physical Abuse</i>		<i>Sexual Abuse</i>	
Greenfield	99%	North Central	26%	Worcester East	4%
Pittsfield	97%	Lawrence	25%	11 Other Areas	3%
Van Wart	96%	Dimock Street	20%		
Haverhill	96%	Park Street	19%		
Framingham	96%	Harbor	18%		
3 Other Areas	95%	Hyde Park	18%		
Statewide	92%	Statewide	13%	Statewide	2%

**Figure II.9<sup>62</sup>**

Neglect was the predominant form of maltreatment throughout the area offices (92% statewide). Physical and sexual abuse accounted for 13% and 2% of all children with supported allegations, respectively. Ranking area offices within each maltreatment category revealed that neglect was prominent throughout the area offices (ranged from 82% in Lawrence to 99% in Greenfield). Physical abuse was most prevalent in the North Central and Lawrence Area Offices. Finally, sexual abuse was equally common among the area offices, ranging from 1% in both the Haverhill and Coastal Offices to 4% in the Worcester East Office.

***Communities with highest ranking of at-risk for child maltreatment and unintentional injuries***

All 351 Massachusetts towns and cities were ranked on two child maltreatment and unintentional injuries outcome indicators: rates of substantiated child abuse and neglect reports for children aged 0 - <9 years and rates of hospitalizations for unintentional injuries. The 18 towns and cities ranked at very high or high risk in this domain were mainly clustered in Boston, North Shore and Northeast as well as in Hampden County. (Figure II.10)



**Figure II.10: CHILD MALTREATMENT AND UNINTENTIONAL INJURIES**

**Parenting Stressors**

Many factors can impact parenting due to increased stressors. Parents who may experience higher levels of stress include those with substance use disorders, those who are single parents, parents with low levels of education, teen parents, and parents who have been incarcerated and possibly separated from their children. All these indicators were reviewed, and compiled into a map of communities with higher rates of parents living with multiple stressors.

**Figure II.11**

<i>Data Indicators</i>	<i>Statewide Rate</i>
<b>Substance Use</b> - <b>Prevalence rate: Binge alcohol use in past month<sup>1</sup></b> - <b>Prevalence rate: Marijuana use in past month</b> - <b>Prevalence rate: Nonmedical use of prescription drugs in past month</b> - <b>Prevalence rate: Use of illicit drugs, excluding Marijuana, in past month</b>	26.6% (Alcohol) 8.1% (Marijuana) 5.7% (Non-prescription medications) 4.1% (Illicit drugs) <sup>63</sup>
rate substance use disorder admissions per 100,000 (2008)*	1621.6 per 100,000 <sup>64</sup>

<sup>1</sup> *Binge drinking*: five or more drinks on the same occasion- or within a couple of hours of each other- on at least 1 day in the past 30 days

% of children ages 0-11 living in single parent households (Census 2000)*	21.6% <sup>65</sup>
% of infants born to mothers with less than a high school degree (2008)*	10.6% <sup>66</sup>
# of births to females ages 15-19 (2008)*	20.1 / 1,000 <sup>67</sup>
% incarcerated parents (2010)*	54.0% <sup>68</sup>

Legislatively required indicators are shaded.

\*Additional indicators are described in Appendix F

### ***Substance Abuse***

Individuals with substance use disorders represent a significant burden on the state's health, human service and corrections systems. It is estimated that over 660,000 individuals of the 1.1 million who are served by state agencies other than MDPH experience the impact of substance use and addictions<sup>69</sup>. At a glance, the statistics on the Commonwealth illustrate the need for evidence-based prevention, intervention and treatment programs, while also describing the demography and need for services in different communities.

Behavioral Risk Factor Surveillance System (BRFSS) data provided the following statistics about the prevalence of binge alcohol use in the past month (defined as the consumption of 5 or more drinks on the same occasion- or within a couple of hours of each other- on at least 1 day in the past 30 days) among women of childbearing age:

- Among women aged 18-44 years nationally, 14.7% reported binge drinking<sup>70</sup>
- Among women aged 18-44 years in Massachusetts, 19.5% reported binge drinking<sup>71</sup>

The 2006-2008 National Surveys on Drug Use and Health (NSDUH) Sub-State Treatment Planning Data Reports found that binge alcohol use in the past month was reported nationally by 23.3% of persons aged 12 years or older during 2006-2008. Specifically, data from the 2006-2008 NSDUH indicate the following regarding the prevalence rate of binge alcohol use in the past month among persons aged 12 years or older in Massachusetts<sup>72</sup>:

- Massachusetts: 26.6 (24.6 - 28.8)
- Boston: 29.4 (25.3 - 33.8)
- Central: 28.3 (24.4 - 32.6)
- Metrowest: 24.46 (21.4 - 27.8)
- Northeast: 26.2 (22.8 - 30.0)
- Southeast: 25.9 (22.2 - 29.9)
- Western: 28.0 (24.1 - 32.1)

Marijuana is the most commonly used illicit drug, and the national rate of past month marijuana use was 6.0% in 2006-2008. Specifically, the 2006-2008 NSDUH found the following regarding the prevalence rate of marijuana use in the past month among persons aged 12 or older in Massachusetts<sup>73</sup>:

- Massachusetts: 8.1 (7.0 - 9.4)
- Boston: 9.9 (7.5 - 13.1)
- Central: 8.2 (6.1 - 10.9)
- Metrowest: 7.0 (5.4 - 8.9)

- Northeast 7.0 (5.4 - 9.2)
- Southeast 8.3 (6.4 - 10.8)
- Western 9.7 (7.4 - 12.5)

MDPH used a related measure from the 2006-2008 NSDUH on the prevalence rate of illicit drug use in the past month. The prevalence was 5.0% nationally, and was the following in Massachusetts<sup>74</sup>:

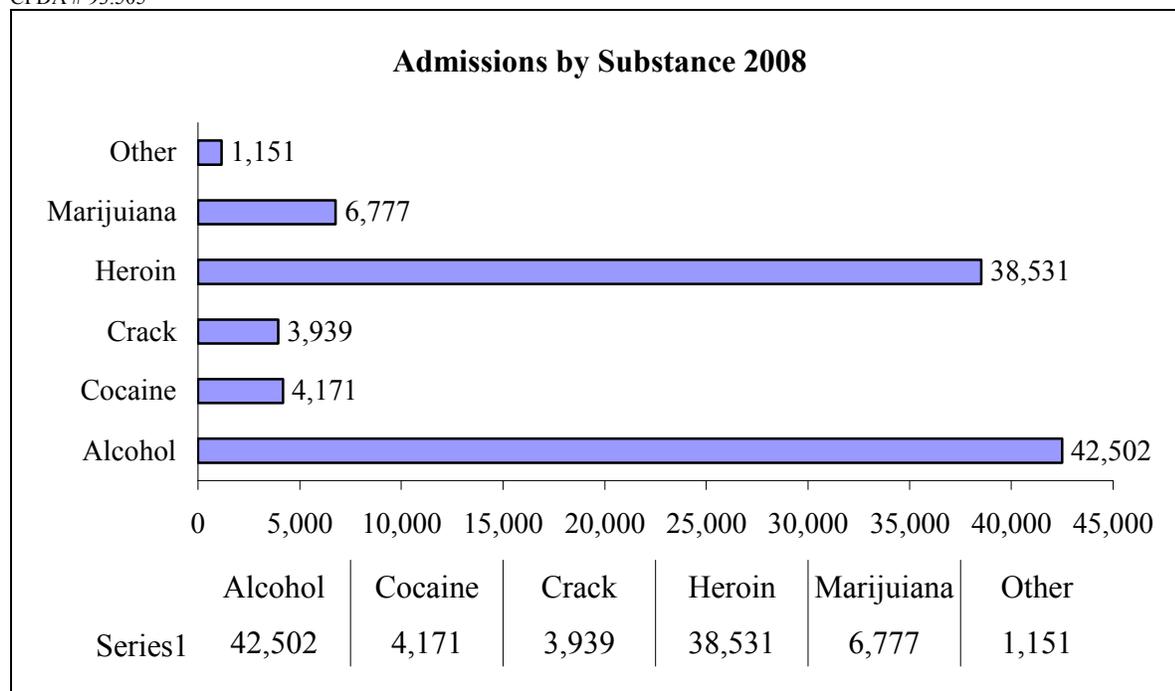
- Massachusetts 4.1 (3.3 - 5.1)
- Boston 4.5 (3.2 - 6.4)
- Central 4.1 (2.9 - 5.8)
- Metrowest 3.4 (2.5 - 4.7)
- Northeast 4.2 (3.0 - 5.9)
- Southeast 4.4 (3.2 - 6.1)
- Western 4.5 (3.2 - 6.2)

A fourth required indicator is the prevalence of non-medical use of prescription drugs in the past month. In Massachusetts, MDPH used a 2006-2008 NSDUH indicator measuring the prevalence of nonmedical use of pain relievers in the past year (not available for just the past month, as required in the legislation) among persons aged 12 years or older. The prevalence was 5.0% nationally, and was the following in Massachusetts<sup>75</sup>:

- Massachusetts 5.7 (4.8 - 6.8)
- Boston 5.5 (4.1 - 7.4)
- Central 5.8 (4.4 - 7.8)
- Metrowest 5.1 (3.9 - 6.6)
- Northeast 5.3 (4.0 - 6.9)
- Southeast 6.5 (4.9 - 8.5)
- Western 6.3 (4.9 - 8.2)

MDPH also included an additional statewide indicator for substance abuse – admissions per 100,000 into state-supported treatment facilities. In 2008, program utilization data from the Bureau of Substance Abuse Services (BSAS) at MDPH demonstrate that there were a total of 105,371 admissions for substance abuse:

- 42,502 were **alcohol**-related admissions
- 38,531 were **heroin/opiate**-related admissions
- 6,777 were **marijuana**-related admissions
- 4,171 were **cocaine**-related admissions
- 3,939 were **crack**-related admissions
- 1,151 were admissions classified as ‘**other** substances’



**Figure II.12**<sup>76</sup>

Based on a crude rate of substance abuse admissions per 100,000 people in 2008, the 10 most at-risk cities/towns in terms of substance abuse in Massachusetts are the following (compared to the statewide crude rate of 1,621.60 per 100,000):

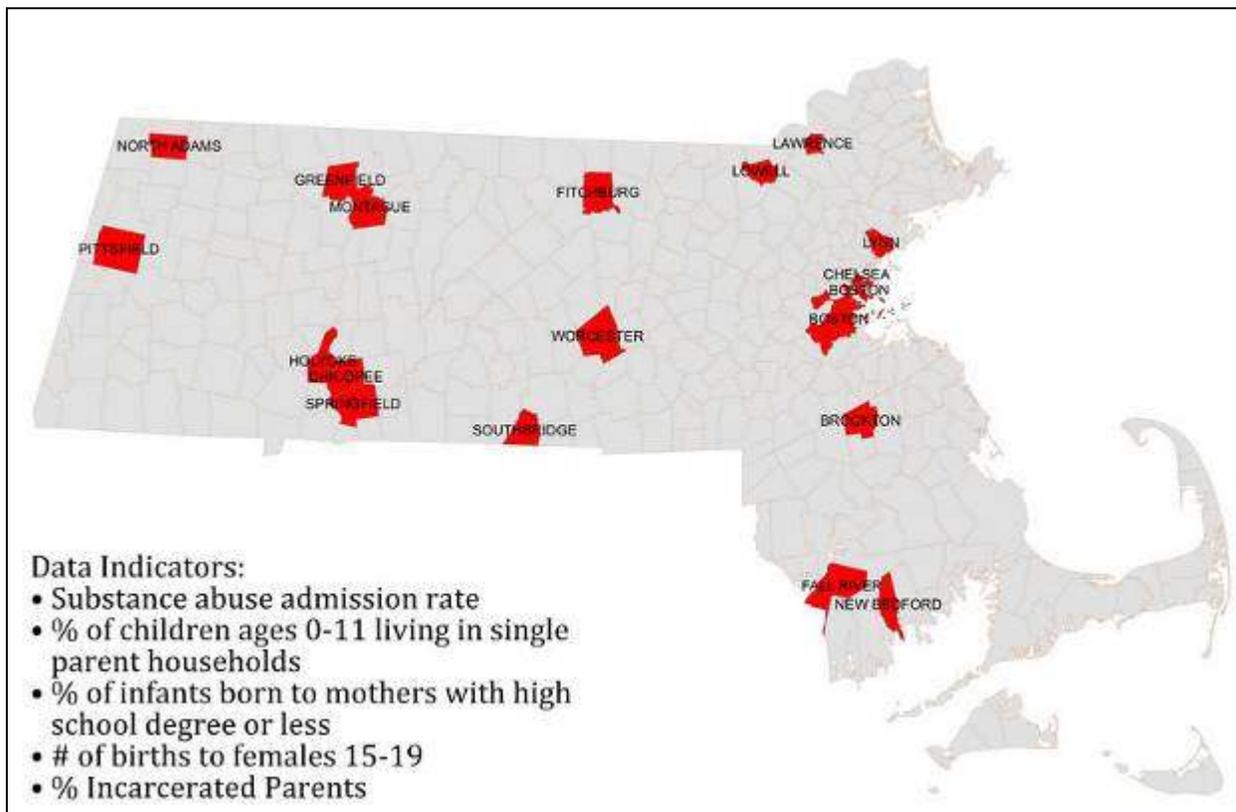
1. Alford (Berkshires): 5,751.06 (population 400)
2. Pittsfield (Berkshires): 4,127.47 (population 43,949)
3. Fall River (Southeast): 4,023.16 (population 92,117)
4. Saugus (Northeast): 4,012.41 (population 26,867)
5. Falmouth (Southeast): 3,497.89 (population 33,620)

Additionally, other communities not listed here but included in the top 18 communities at risk for substance abuse include Holyoke, Springfield, and Boston. These individual communities will be discussed in more detail in the community data reports

***Communities most at-risk for compromised parenting***

All 351 Massachusetts towns and cities were ranked on multiple indicators that could impact parenting: substance abuse rates, single parents, mothers with a low educational attainment and teen mothers. The 18 towns and cities ranked at very high or high risk in this domain were scattered throughout the state. (Figure II.13)

**Figure II.13: PARENTING STRESSORS**



**Crime and Domestic Violence**

**Figure II.14**

<i>Data Indicators</i>	<i>Statewide Rate</i>
Violent crime crude rate per 100,000 (2008)	449 / 100,000 <sup>77</sup>
# crime arrests ages 0-18 years/100,000 juveniles age 0-18 years (2005)	Part I: 79 per 100,000 Part II: 223 per 100,000 <sup>78</sup>
Domestic Violence % abuse prevention filings (restraining orders) by district court (2009)	5.5% <sup>79</sup>

Legislatively required indicators are shaded.

**Violent Crimes**

According to the U.S. Department of Justice, Federal Bureau of Investigation, violent crime is composed of four offenses: murder and non-negligent manslaughter, forcible rape, robbery, and

aggravated assault.<sup>80</sup> Reducing violent crime is a national priority as indicated by the proposed objectives in Injury and Violence Prevention of Healthy People 2020:

- IVP HP2020-2: Reduce homicides
- IVP HP2020-3: Reduce firearm-related deaths
- IVP HP2020-12: Reduce physical assault
- IVP HP2020-31: Reduce violence by current or former intimate partners
- IVP HP2020-32: Reduce sexual violence<sup>81</sup>

In Massachusetts, the overall rate of violent crime in the state for 2008 was 449/100,000. The five cities and towns with the highest rates of violent crime for 2008 were:

1. Chelsea (North Shore): (1732/100,000)
2. New Bedford (Southeast): (1302/100,000)
3. Springfield (Hampden County): (1255/100,000)
4. Fall River(Southeast): (1199/100,000)
5. Holyoke (Hampden County): (1135/100,000)

### ***Juvenile Crimes***

In Massachusetts, youth aged <18 years who are arrested for alleged crimes are considered juveniles. Their cases are handled predominately through the juvenile court system. Those youth found to be guilty may be committed to the custody of the Department of Youth Services (DYS) or, for less serious offenses, may be referred directly to probation. Typically, they are released from commitment or probationary supervision upon reaching age 18 years.

### ***Part I Crime Arrests***

Part I crimes are also referred to as index crimes and are categorized as violent crimes or property crimes. Part I violent crimes include offenses of murder, forcible rape, robbery, and aggravated assault. Part I property crimes include offenses of burglary, larceny-theft, motor vehicle theft, and arson. The juvenile arrest rates are based on a calculation of the total population reporting (adult and juvenile), not just the juvenile population.

- For at least the past fourteen years, Massachusetts has had lower Part I juvenile arrest rates than the United States as a whole. In 2005, for every 100,000 individuals in the United States there were 175 Part I juvenile arrests; whereas, for every 100,000 individuals in Massachusetts there were only 79 Part I juvenile arrests.<sup>82</sup>
- Over time, the Part I juvenile arrest rate has decreased significantly in both the United States and in Massachusetts. From 1995 to 2005, the Part I juvenile arrest rate in Massachusetts has decreased by 52% and in the United States by 50%.
- For every 100,000 persons in Massachusetts in 2005, there were 52 Part I arrests of individuals aged <18 years for property crimes and 27 for violent crimes. The 2005 Massachusetts juvenile property crime arrest rate represents a 20-year low, while the Massachusetts juvenile violent crime arrest rate represents a 54% decrease since its high of 58 in 1994 and 1995.

### MA & United States Part I Juvenile Arrest Rates Per 100,000 Persons, 1993-2005

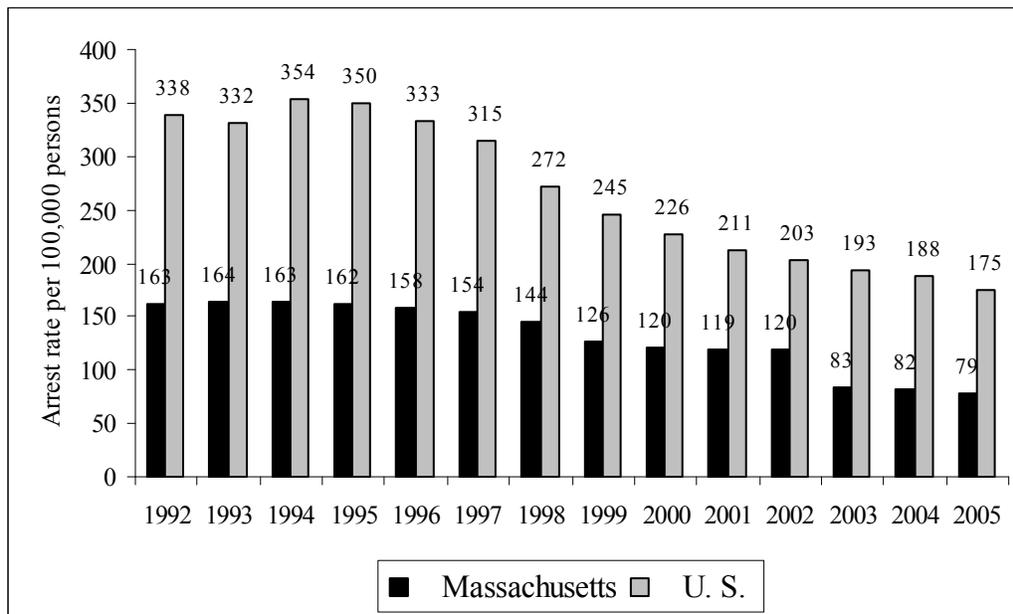


Figure II.15<sup>83</sup>

### Part I Juvenile Arrest Rate (Per 100,000 Persons)\* by Type of Arrest, MA, 1986–2005

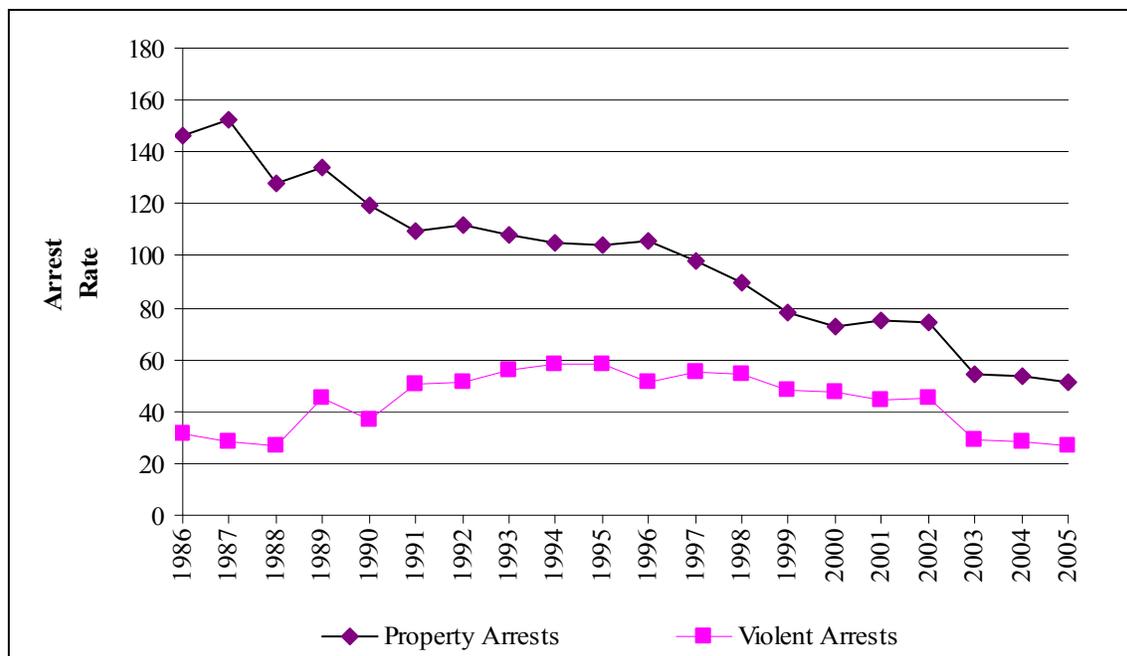


Figure II.16<sup>84</sup>

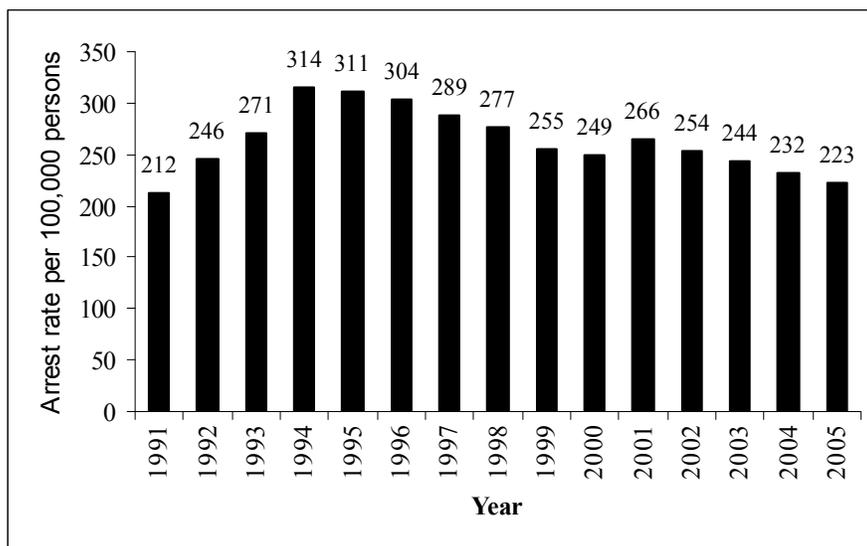
\*Rate is based on total Massachusetts population (adult and juvenile). For this arrest data, juveniles are youth aged less than 18 years.

*Part II Crime Arrests*

Part II crimes include other assaults, forgery and counterfeiting, fraud, embezzlement, buying/possessing stolen property, vandalism, weapons carrying/possessing, prostitution, sex offenses (except forcible rape), drug abuse violations, gambling, offenses against family/children, driving under the influence, liquor law violations, drunkenness, disorderly conduct, vagrancy and all other offenses (Siegel, 1995). They also include suspicion, curfew/loitering law violations, and runaways, which are status offenses.

- In 2005, there were 223 Part II juvenile arrests per 100,000 individuals in the general Massachusetts population (Federal Bureau of Investigation, 2005) (See figure below). The Massachusetts Part II juvenile arrest rate has decreased 16% since the most recent high in 2001 and is now at its lowest since 1991.
- Over the past decade, there has been a decrease in arrest rates for certain Part II crimes and an increase in others. For example, from 1995 to 2005, the arrest rates for the following crimes decreased: buying, receiving or possessing stolen property (78% decrease); weapon carrying (45%); runaways (76%); disorderly conduct (41%); vandalism (23%); drunkenness (45%); liquor laws violation (41%); and drug abuse violations (40%). Over the same time period, the arrest rate for other assaults increased 27% and the arrest rate for “all other offenses” increased 8%.

**Part II Arrest Rates — Massachusetts, 1991–2005**



**Figure II.17<sup>85</sup>**

***Domestic Violence***

Intimate partner violence (IPV) and domestic violence (DV) refer to behavior that physically hurts, arouses fear, or prevents a victim from doing what he/she wishes.<sup>86</sup> Since 2003, in Massachusetts, domestic violence female homicide has fluctuated, experiencing the highest spike in 2007 when there were 28 deaths. In 2008 and 2009 the number of deaths has declined to 18 and 14 deaths, respectively.<sup>87</sup> IPV is estimated to affect 1 in 4 women in their lifetime. In the

most extreme circumstances IPV can lead to death. Between 2003 and 2007, there were 125 IPV-related homicides in Massachusetts.<sup>88</sup>

Although IPV homicide is mostly directed at the victim, it can also result in the death or harm of people close to the victim including one or more children.<sup>89</sup> Pregnant women may be at higher risk of IPV.<sup>90</sup> Young mothers and mothers with unplanned pregnancies face an increased risk of IPV. More than 25% of adolescent mothers experience abuse before, during, or just after pregnancy.<sup>91</sup> IPV during pregnancy can have lasting effects on women and their infants, and has been associated with preterm birth, low birth-weight, smoking during pregnancy, hospitalization prior to birth, high blood pressure, kidney or urinary tract infections, STDs, complications including vaginal bleeding and infection, and poor physical/mental health post-partum.<sup>92 93</sup>

In 2009, 5% of families enrolled in Massachusetts Head Start / Early Head Start programs received domestic violence services. In addition, according to 2007/2008 MA PRAMS data:

- 3.3% reported IPV in the 12 months pre-pregnancy
- 2.6% reported IPV during pregnancy
- 4.3% reported IPV in 12 months prior to or during pregnancy
  - Women living in poverty were almost 6 times more likely (12.5% vs. 2.2%) to report experiencing abuse prior to or during pregnancy than those not in poverty

In 2009, the Massachusetts Coalition Against Domestic Violence reported that:

- In one day, 2,018 victims were served by 49 domestic violence shelters
- In one day, the domestic violence hotline answered, on average, about 32 calls an hour, equaling 763 hotline calls for the 24 our period
- There was a total 12,198 domestic violence calls to domestic violence shelters or hotlines, with about 49% of calls coming directly from the victims/survivors

Immigrants living in Massachusetts account for a disproportionately high percentage of domestic violence homicides. Although immigrants only comprise 14% the total population, immigrants accounted for 26% (47) of the 180 domestic violence deaths from 1997-2006. The majority of these victims were women and children.<sup>94</sup>

### ***Abuse Prevention***

In Massachusetts, victims of harassment, physical or emotional abuse, and those being verbally threatened have a number of options available to protect them from further harassment or abuse. A restraining or harassment prevention order is one option available to protect persons from further harassment or abuse. Research indicates that women with permanent protection orders in effect are less likely to be physically assaulted than those without orders but more likely to be psychologically abused.<sup>95</sup> Women who file orders are more likely to be employed, pregnant, married, over 24 years of age, and less likely to be involved with the perpetrator at the index incident than those who do not file restraining orders.<sup>96</sup>

Massachusetts data from 2009 regarding where restraining orders were filed were analyzed by the number of filings of abuse prevention/restraining orders out of all filings in each court. Statewide, among 569,938 total filings in Massachusetts courts, 31,452 (5.5%) were restraining orders. The following courts had higher percentages of restraining orders out of all filings:

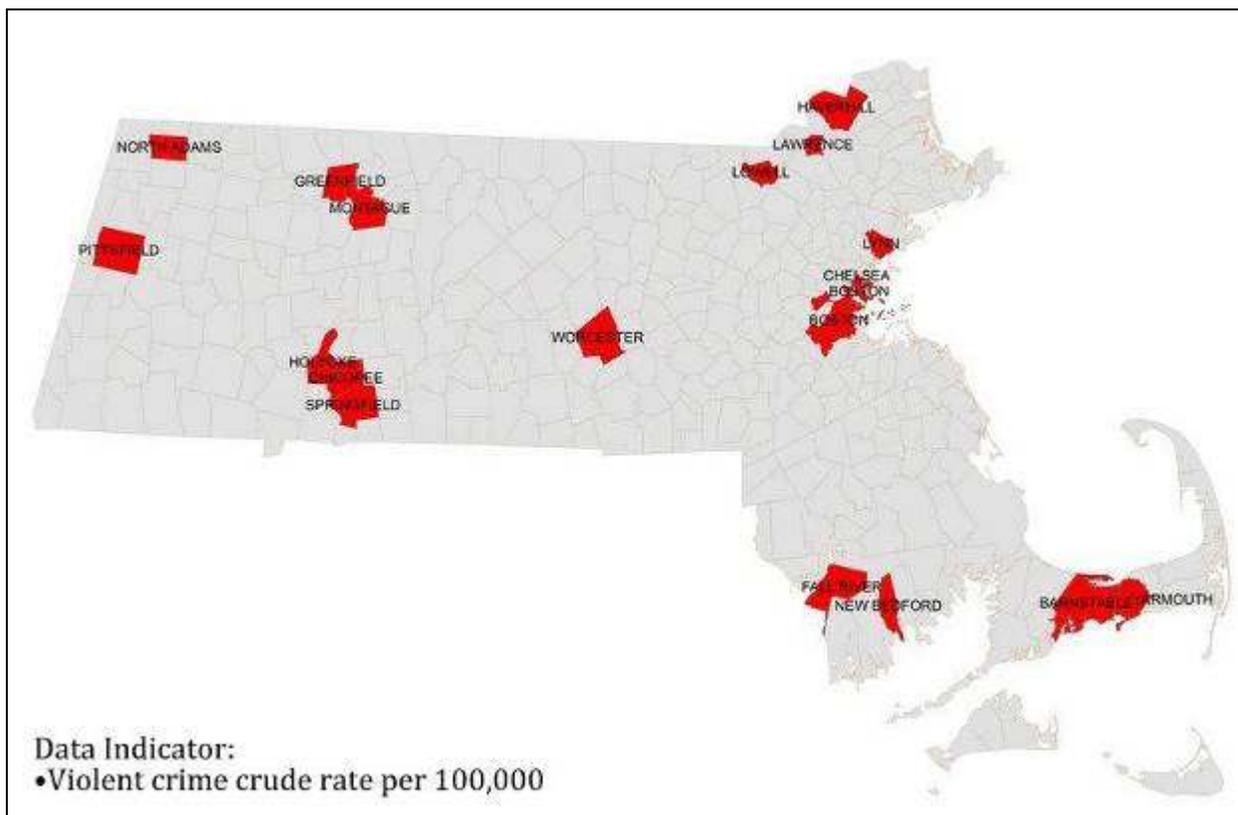
1. Holyoke District Court (Hampden County): 13.2%

2. Winchendon District Court (Central): 10.9%
3. Gardner District Court (Central): 10.8%
4. Haverhill District Court (Northeast): 10.6%
5. Chicopee District Court (Hampden County): 10.6%.

***Communities most at-risk for violent crimes***

All 351 Massachusetts towns and cities were ranked by the rates of violent crimes in their communities. The 18 towns and cities ranked at very high or high risk on this indicator in the Berkshires, Central Massachusetts and Hampden County. (Figure II.18)

**Figure II.18: RATES OF VIOLENT CRIMES**



**Family Economic Self-Sufficiency**

**Figure II.19**

<i>Data Indicators</i>	<i>Statewide Rate</i>
<b>% of residents living below 100% FPL (Census 2000)</b>	9.3% <sup>97</sup>
<b>% unemployed individuals in labor force (2010)</b>	8.5% <sup>98</sup>
% children ages 0-5 yrs old living below 185% FPL (Census 2000)*	26.4% <sup>99</sup>
% women giving birth receiving publically financed health care (2004-2008)*	33.1% <sup>100</sup>
# homeless children aged 0 – 12 (count) (2009) *	4,853 <sup>101</sup>
# families requesting emergency shelter (count) (FY2010)*	11,147 <sup>102</sup>
# families placed in emergency shelters (count) (FY2010)*	42,094 <sup>103</sup>
# of children residing in emergency assistance temporary shelters (0-18 yrs) (July 2010)*	6,331 <sup>104</sup>
% of students receiving Food Stamps (FY2009)*	8.0% <sup>105</sup>
% of students participating in the Free Lunch Program (FY2009)*	27.4% <sup>106</sup>
% of homeless children ages 0-12 receiving childcare (FY2009)*	10.0% <sup>107</sup>
% students receiving Reduced School Lunch (2009-2010)*	5.6% <sup>108</sup>
% families on TAFDC (2009)*	6.6% <sup>109</sup>

Legislatively required indicators are shaded.

\*Additional indicators are described in Appendix F

***Residents Living in Poverty***

According to the National Center for Children in Poverty there are 14 million children living in families with incomes below the federal poverty level (FPL, \$22,050 for a family of four in 2009).<sup>110</sup> Yet, even at 200% FPL, families experience similar hardships of food insecurity, inadequate housing, and insufficient health care as those below the FPL.<sup>111</sup> In 2007, nearly 29 million children (or 39% of children in the US) lived in low income families, defined as at or below 200% FPL. Healthy People 2020 emphasizes the need to reduce barriers to accessing to health care services in the proposed objective [AHS HP2020-7](#): Reduce the proportion of individuals that experience difficulties or delays in obtaining necessary medical care, dental care, or prescription medicines.<sup>112</sup> Additionally, Healthy People 2020 plans to incorporate an overarching objective of addressing social determinants of health.<sup>113</sup>

Using 2000 census data, Massachusetts examined the percentage of residents living at <100% of FPL. Statewide, Massachusetts documents 9.3% of residents living <100% poverty. The 5 cities

and towns with the highest percentages of low income residents were: Holyoke (26.4%), Lawrence (24.3%), Gosnold (23.5%), Chelsea (23.3%), and Springfield (23.1%).

### ***Unemployment***

The most recent figures from the Department of Labor, Bureau of Labor Statistics, state that the national unemployment rate was 9.5% in July 2010.<sup>114</sup>

In Massachusetts, the Division of Unemployment Assistance (DUA) administers the Unemployment Insurance program, providing temporary assistance to unemployed Massachusetts workers. Claimants are currently eligible for up to 99 weeks of benefits, including up to 26 weeks of regular unemployment insurance, up to 53 weeks of federal Emergency Unemployment Compensation, and up to 20 weeks of federal-state Extended Benefits.<sup>115</sup>

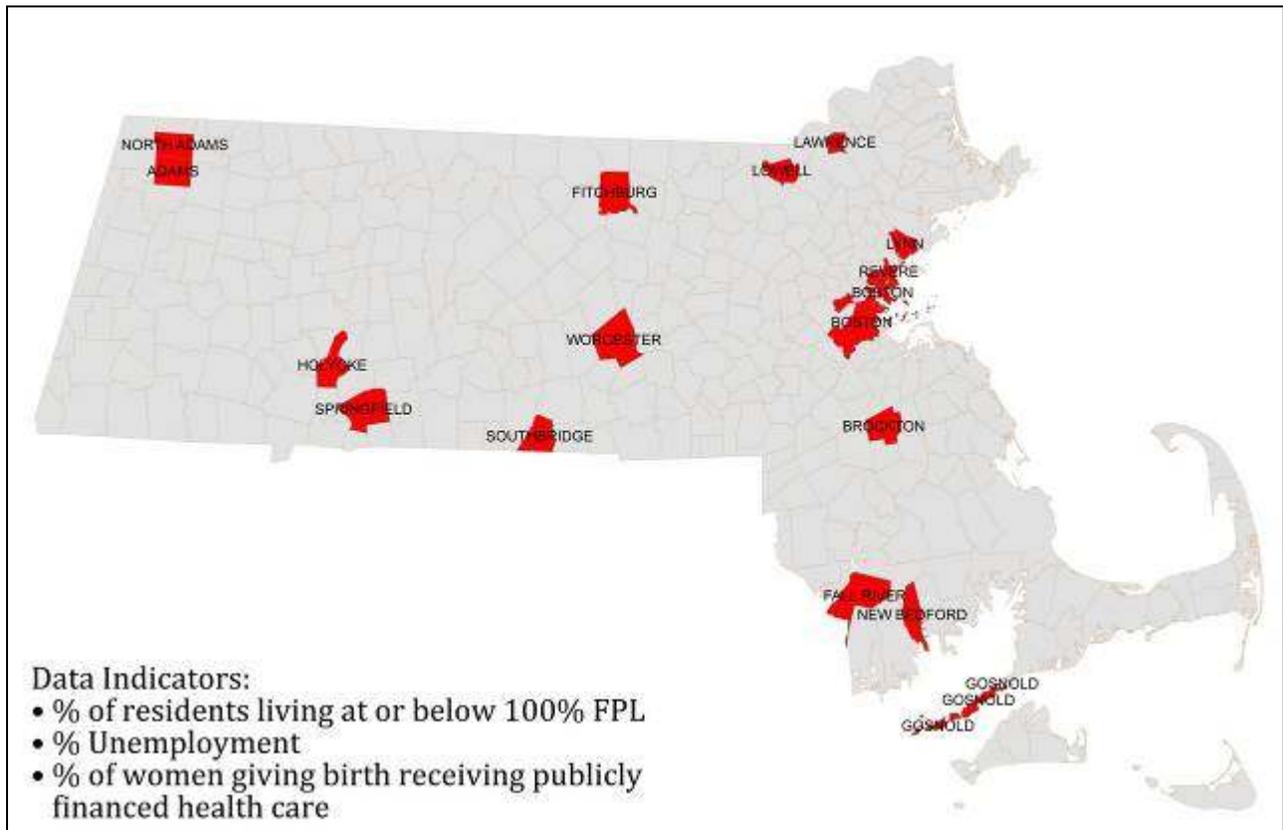
For each city and town in the Commonwealth, the most recently available data in 2010 on unemployed citizens were analyzed to obtain the unemployment percentages. The statewide unemployment average was 8.5%, and the five cities and towns with the highest unemployment percentages were:

1. Adams (Berkshires): 10.3%
2. Methuen (Northeast): 9.7%
3. Merrimac (Northeast): 9.5%
4. Mendon (Southeast): 9.4%
5. Hubbardston (Central): 9.2%

### ***Communities most at-risk for economic stressors***

All 351 Massachusetts towns and cities were ranked by the percentage of residents at < 100 FPL, rates of unemployment, and women giving birth on public assistance. Communities at highest risk for experiencing economic stressors were scattered through out the Commonwealth spanning Berkshires, Hampden County, Central Massachusetts, Northeastern Massachusetts, the North Shore, Boston and the Southeast. (Figure II.20)

**Figure II.20: FAMILY ECONOMIC SELF-SUFFICIENCY**



### Access to Care

One of the eight domains that the Massachusetts Evidence-based Home Visiting Program intends to address is improving a system of coordinated referrals to community resources and supports for pregnant and parenting families in Massachusetts. One outcome measure within this domain is how well families access health care. In 2007, Massachusetts overhauled its health system to reduce the number of uninsured residents. While Massachusetts healthcare reform improved health care coverage for families (the percentage of children with no health insurance dropped from 4.5% in 1998 to 1.2% in 2008); access to care and affordable health insurance remain a challenge for many. To assess the need in Massachusetts for a coordinated system of health care, MDPH mapped health care shortage areas including areas with primary health care, dental care and mental health care shortages.

**Figure II.21**

<i><b>Data Indicators</b></i>	<i><b>Statewide Rate</b></i>
Health Professional Shortage Areas (2009)	N/A
% children under 18 who receive care in a medical home (2005-2006)*	66.2% <sup>116</sup>
# Community Service Agencies (CSA) for children with disabilities (2010)*	26 <sup>117</sup>

\*Additional indicators are described in Appendix F

### ***Health Professional Shortage Areas (HPSAs)***

As of May 2009, Massachusetts had designated 44 Health Professional Shortage Areas (HPSAs) across the state with an additional 108 auto-designated HPSAs (36 in each of primary care, mental health, and dental care).

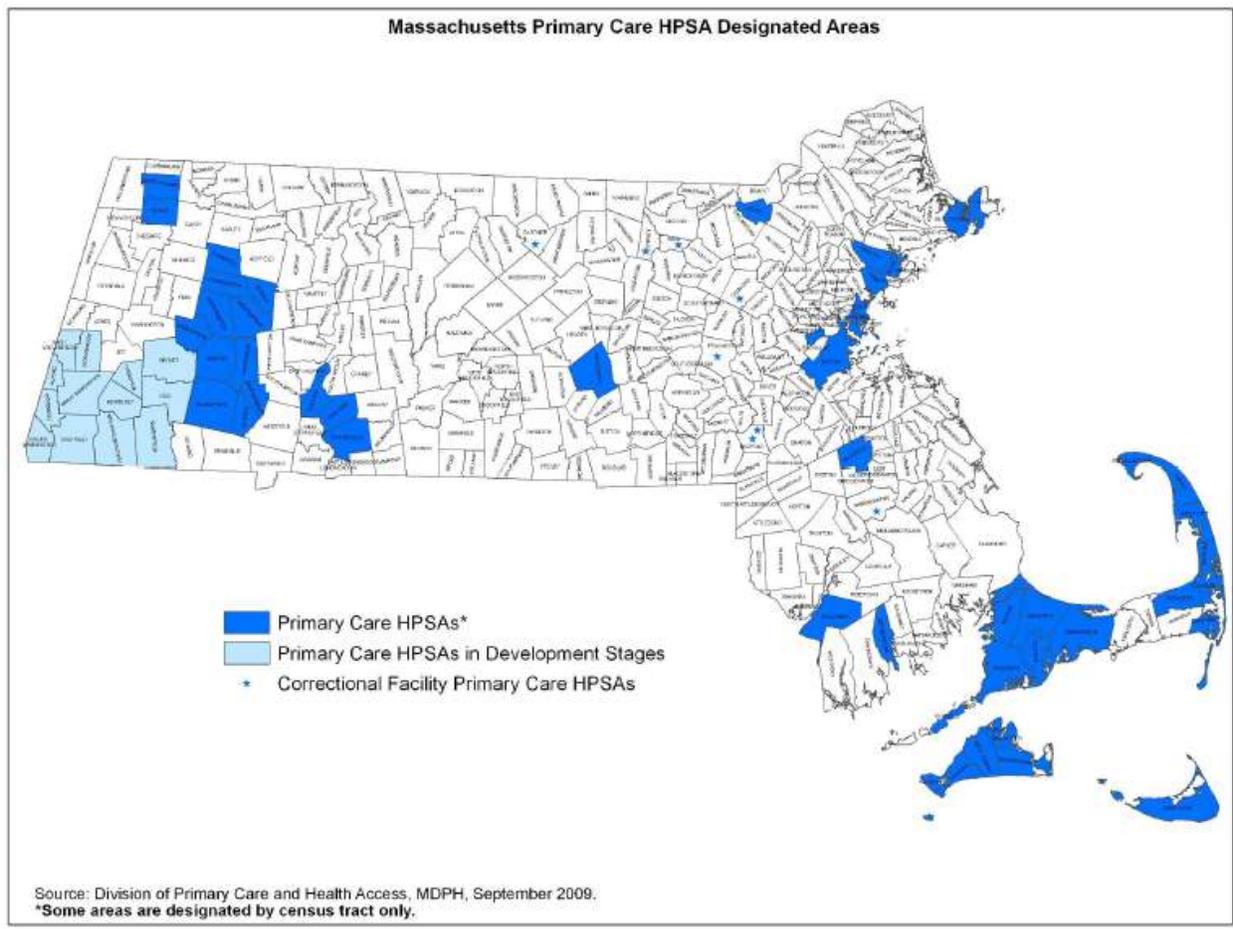
#### *Primary Care Providers*

In certain regions of the state, the number of primary care providers (PCPs) is insufficient to care for the population adequately, and many PCPs are not accepting new patients.<sup>118</sup> There are also substantial regional disparities in access to specialty care (e.g., Ob/GYN in western Massachusetts) and widespread problems with access to culturally competent care, especially for non-English speakers.

Access to physicians is an on-going challenge with the number of newly insured individuals seeking primary care exceeding the availability of PCPs. In some cases, this lack of PCPs has led to reduced access for those that had a PCP before health care reform.

- Western Massachusetts has a lower supply of providers versus demand than the rest of the state
- Follow-up care further increases the demand for primary care for those newly insured
- Some providers are not accepting some new insurance types including new Commonwealth Care plans, just as some providers were not accepting Medicaid plans pre-reform.

**Figure II.22: Massachusetts Primary Care HPSA Designated Areas:**



### *Dental Care Providers*

Oral health care continues to be a critical need and access for all families, especially those on Medicaid since there is a lack of providers who accept Mass Health (state Medicaid insurance). Currently, there are 5,522 fully licensed dentists with a Massachusetts address and 367 limited license dentists to serve about 6,449,755 residents, for a dentist-to-population ratio of 1 to 1,095, compared to a 1 to 1,700 dentist-to-population ratio nationally. Though these ratios suggest convenient access to dental care for every resident, the distribution of dentists is uneven, with a significantly higher concentration of dentists in the eastern third of the state. Massachusetts has 24 Dental Health Professional Shortage Area (DHPSA) designations that cover 53 communities and approximately 1.3 million residents. (See Map in Appendix F)

### *Mental Health Providers*

Several behavioral health policy changes are designed to improve the provision of screening and treatment services. These include the Children's Behavioral Health Initiative (CBHI) and the Mental Health Parity Act. However, while these initiatives focus on the identification and screening of individuals, gaps persist in the availability of mental health treatment, especially for state-funded services and bilingual providers. (See Map of Mental Health Professional Shortage Areas in Appendix F)

**Vulnerable Populations**

Within all Massachusetts towns and cities, there are disparities in health and educational outcomes. Some populations at higher risk for poor outcomes include racial and ethnic minorities, students who do not speak English as their first language or have limited English proficiency, those who are foreign-born including immigrants, refugees, asylees and undocumented persons, and those serving in the armed forces or civilian veterans. Within any community, reviewing outcomes for the entire community can mask some of the disparities that are of concern for the vulnerable populations. To address these disparities, MDPH has identified populations at risk across the state, and, will examine these disparities more closely within communities in which home visiting programs may be implemented.

**Figure II.23**

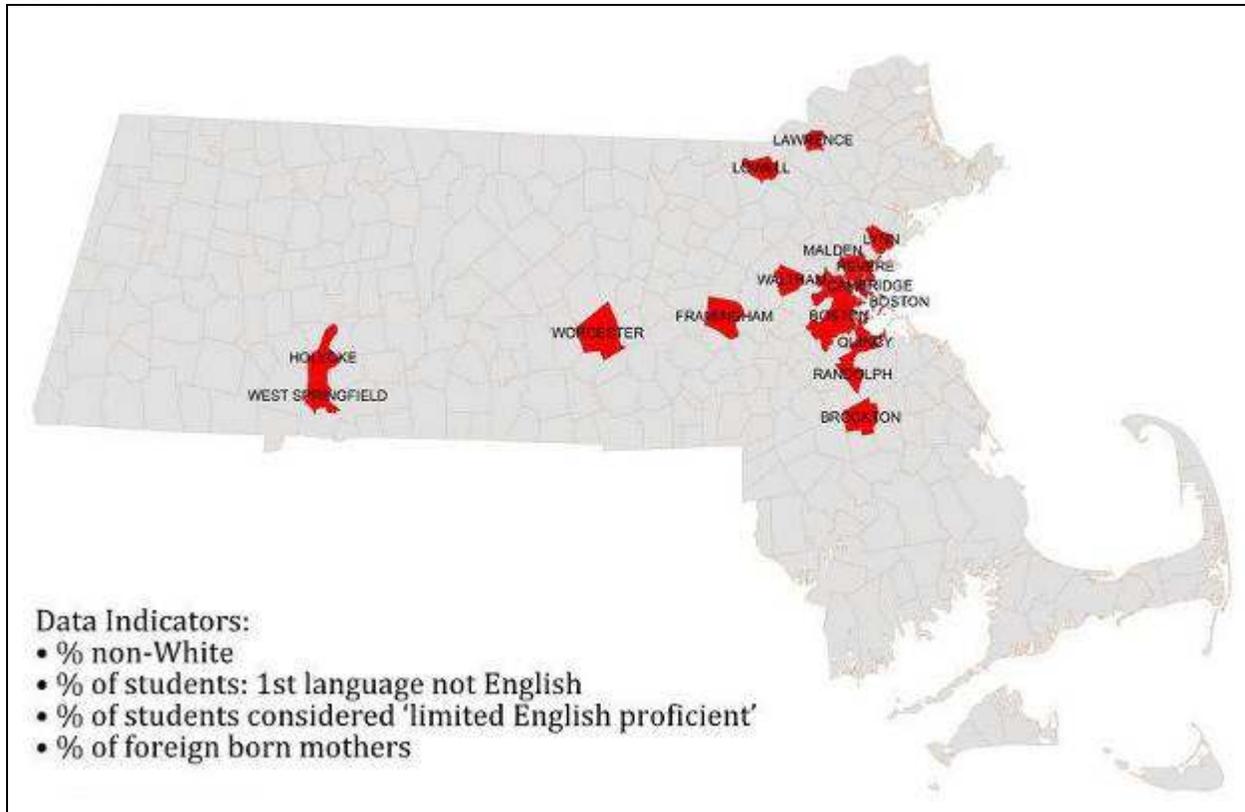
<i>Data Indicators</i>	<i>Statewide Rate</i>
% residents non-White (2005)*	19.0% <sup>119</sup>
% students first language not English (2009-2010)*	15.6% <sup>120</sup>
% students considered ‘limited English proficient’ (2009-2010)*	6.2% <sup>121</sup>
% mothers giving birth who are foreign born (2008)*	27.7% <sup>122</sup>
Immigrants population in Massachusetts (2008)* - % residents foreign-born # of undocumented immigrants	14.2% <sup>123</sup> 160,000, <sup>124</sup>
# refugees and asylees arrivals in Massachusetts (2005 – 2009)*	7,459 <sup>125</sup>
Healthy Start program caseload - total enrollment on (6/30/2010) (count)*	3,890 <sup>126</sup>
% residents in the Armed Forces (Census 2000)*	0.1% <sup>127</sup>
% residents who are civilian veterans (Census 2000)*	11.5% <sup>128</sup>
Rate civilians aged 18+ who are female veterans (2005)*	5.9/1,000 <sup>129</sup>

\*Additional indicators are described in Appendix F

***Communities with highest percentages of minority, non-English speaking and foreign born residents giving birth***

All 351 Massachusetts towns and cities were ranked by the percentage of residents who were non-White; students who did not speak English as their first language or had limited English proficiency; and foreign-born women giving birth. Within the Commonwealth, communities with the highest rankings in these categories were in Hampden County, Northeastern Massachusetts, Boston are and the North Shore. (Figure II.24).

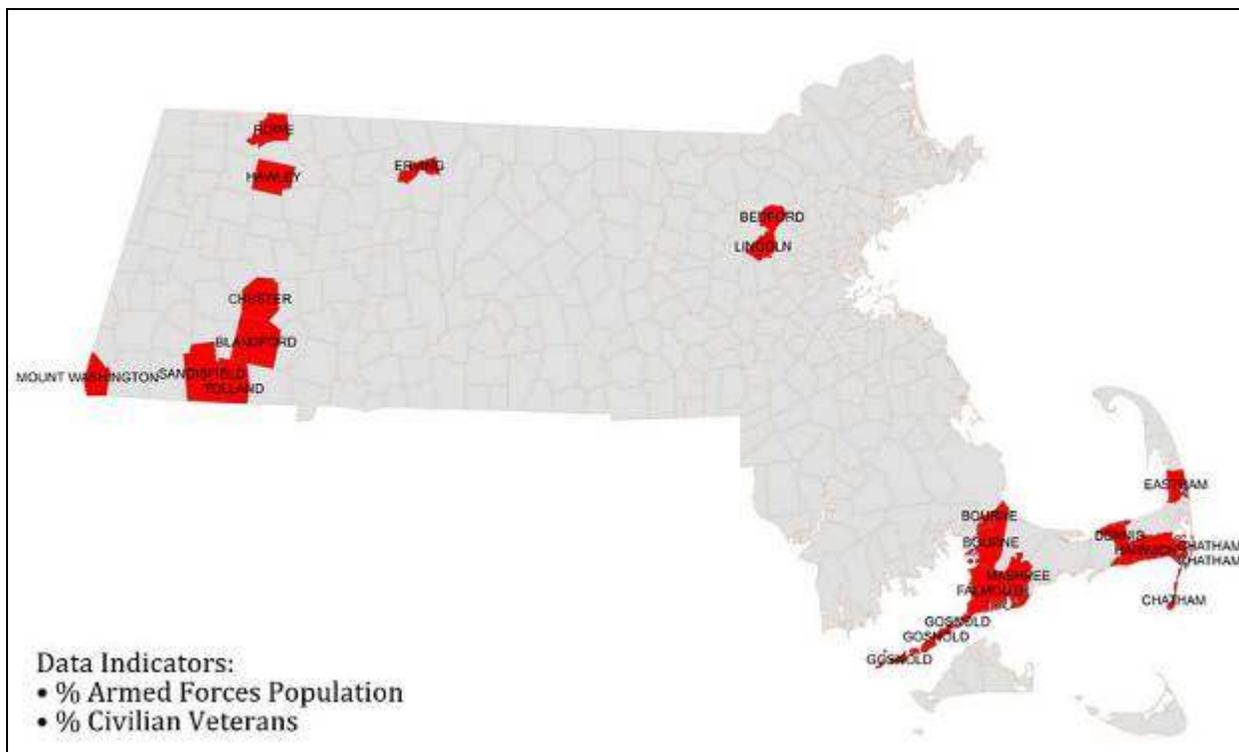
**Figure II.24: MINORITY AND FOREIGN BORN POPULATIONS**



***Communities with highest percentages of residents who have or are serving in the armed forces***

All 351 Massachusetts towns and cities were ranked by the percentage of residents who were either in the active armed forces or were civilian veterans. Within the Commonwealth, communities with the highest rankings in these categories were predominantly in the Berkshires and on Cape Cod. (Figure II.25)

**Figure II.25: COMMUNITIES WITH RESIDENTS WHO HAVE OR ARE SERVING IN THE ARMED FORCES**



## References

- 1 U.S. Census Bureau, Accessed Nov 2009 via <http://factfinder.census.gov>
- 2 Massachusetts Births 2008. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research, and Evaluation, Massachusetts Department of Public Health. March 2010. Note: Unless otherwise noted, all Massachusetts 2008 birth data as well as comparable 1990 to 2007 Massachusetts and 2007 national figures are from this source.
- 3 Massachusetts Births 2008. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research, and Evaluation, Massachusetts Department of Public Health. March 2010. Note: Unless otherwise noted, all Massachusetts 2008 birth data as well as comparable 1990 to 2007 Massachusetts and 2007 national figures are from this source.
- 4 Hamilton BE, Martin JA, Sutton PD, and Ventura SJ. Births: Preliminary Data for 2007. National Center for Health Statistics. Reports;Vol 57 No 12. Hyattsville, MD: National Center for Health Statistics. 2009.
- 5 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. (2008). Percentage of premature births (Vital Records) ICD 10. Retrieved from <http://www.mass.gov/dph/masschip>
- 6 Ibid
- 7 Ibid
- 8 Ibid
- 9 Ibid
- 10 Ibid
- 11 Massachusetts Department of Public Health, Health Survey Program, Bureau for Health Information, Statistics, Research and Evaluation, 2006 – 2008, Behavioral Risk Factor Surveillance System (BFRSS) data, accessed July 2010
- 12 Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS). Draft 2007/2008 Surveillance Report
- 13 Bureau of Substance Abuse Services, 2008 Statistics. Massachusetts Department of Public Health
- 14 Massachusetts Department of Public Health, Health Survey Program, Bureau for Health Information, Statistics, Research and Evaluation, 2006 – 2008, Behavioral Risk Factor Surveillance System (BFRSS) data, accessed July 2010

- 15 Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS). Draft 2007/2008 Surveillance Report
- 16 Massachusetts Births 2008. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research, and Evaluation, Massachusetts Department of Public Health. March 2010. Note: Unless otherwise noted, all Massachusetts 2008 birth data as well as comparable 1990 to 2007 Massachusetts and 2007 national figures are from this source.
- 17 Ibid
- 18 Pregnancy to Early Life Longitudinal Data – 2008 Birth Data, Massachusetts Dept of Public Health, Office of Data Translation, Data run 2010
- 19 Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS). Draft 2007/2008 Surveillance Report
- 20 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. (2008). Percentage of premature births (Vital Records) ICD 10. Retrieved from <http://www.mass.gov/dph/masschip>
- 21 ibid
- 22 Massachusetts Births 2008. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research, and Evaluation, Massachusetts Department of Public Health. March 2010. Note: Unless otherwise noted, all Massachusetts 2008 birth data as well as comparable 1990 to 2007 Massachusetts and 2007 national figures are from this source.
- 23 Massachusetts Births 2007. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research and Evaluation, Massachusetts Department of Public Health. February 2009.
- 24 National Center for Health Statistics, Final Natality Data: Accessed October 2009 via: <http://www.marchofdimes.com/peristats/tlanding.aspx?reg=25&top=4&lev=0&slev=4>.
- 25 Massachusetts Births 2008. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research, and Evaluation, Massachusetts Department of Public Health. March 2010. Note: Unless otherwise noted, all Massachusetts 2008 birth data as well as comparable 1990 to 2007 Massachusetts and 2007 national figures are from this source.
- 26 MacDorman MF, Martin JA, Mathews TJ, et al. Explaining the 2001-02 infant mortality increase: Data from the linked birth/infant death data set. National vital statistic reports; 53 (12). Hyattsville, Maryland: National Center for Health Statistics. 2005.
- 27 Massachusetts Births 2008. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research, and Evaluation, Massachusetts Department of Public Health. March 2010. Note: Unless otherwise noted, all Massachusetts 2008 birth data as well as comparable 1990 to 2007 Massachusetts and 2007 national figures are from this source.
- 28 Massachusetts Births 2008. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research, and Evaluation, Massachusetts Department of Public Health. March 2010. Note: Unless otherwise noted, all Massachusetts 2008 birth data as well as comparable 1990 to 2007 Massachusetts and 2007 national figures are from this source.
- 29 Massachusetts Births 2008. Boston, MA: Division of Research and Epidemiology, Bureau of Health Information, Statistics, Research, and Evaluation, Massachusetts Department of Public Health. March 2010. Note: Unless otherwise noted, all Massachusetts 2008 birth data as well as comparable 1990 to 2007 Massachusetts and 2007 national figures are from this source.
- 30 US Census Bureau, Population Estimates Program
- 31 U.S. Census Bureau, 2008 American Community Survey Fact Sheet
- 32 Annie E. Casey Foundation, Kids Count Data Book Online, 2009
- 33 U.S. Census Bureau, 2008 American Community Survey, Table R1704
- 34 Annie E. Casey Foundation Kids Count Data Center: <http://datacenter.kidscount.org/data/bystate/StateLanding.aspx?state=MA>
- 35 NSCH, 2007
- 36 NSCH, 2007
- 37 Burden of Asthma in Massachusetts. Massachusetts Department of Public Health, Asthma Prevention and Control Program, April 2009.
- 38 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. Hospitalizations due to Asthma, Hospital Discharges (UHDD). (2008). Retrieved from <http://www.mass.gov/dph/masschip>
- 39 CDC MA Lead Data, Statistics, and Surveillance, 2006
- 40 2009, Pediatric Nutrition Surveillance System (PedNSS)
- 41 Division of Primary Care and Health Access (School Health), Bureau of Community Health Access and Promotion. (2010). Essential School Health Services Program 2008-2009. Boston, MA: MA Department of Public Health.
- 42 The Children's Medical Security Plan (CMSP) is a program that provides certain uninsured children and adolescents with primary and preventive medical and dental coverage. Caseload data was provided by MassHealth (Massachusetts Medicaid) and is comprised of enrollment data as of June 30, 2010.
- 43 2010, Massachusetts Early Childhood Taskforce.
- 44 (2010). SFY 11 Massachusetts State Plan Update: Children's Behavioral Health Initiative Screening Rates.. Boston, MA: Massachusetts Department of Mental Health.
- 45 2009 Data Report, Massachusetts Department of Elementary and Secondary Education
- 46 2009 Data Report, Massachusetts Department of Elementary and Secondary Education
- 47 Planning, Research, Evaluation & Accountability Reporting Group. (2010). Poor performing schools, 2008 Level 4 Schools: Information for Parents and the Public. Boston, MA: MA Department of Elementary and Secondary Education.
- 48 (2010). Percentage of children (0-11) waitlisted for an EEC subsidized childcare slot (custom report). Boston, MA: MA Department of Early Education and Care.
- 49 FY2009 Early Intervention Program Report
- 50 2009 Data Report, Massachusetts Department of Elementary and Secondary Education

- 51 Heckman JJ, LaFontaine PA. The American high school graduation rate: Trends and levels. *Rev.Econ.Stat.* 2010;92(2):244-262.
- 52 U.S. Department of Education, National Center for Education Statistics. (2010). The Condition of Education 2010 (NCES 2010-028), Table A-19-2.
- 53 2010, Massachusetts Department of Children and Families, Annual Total – June 1, 2009 – May 31, 2010
- 54 *ibid*
- 55 Massachusetts Department of Public Health, Division of Domestic Violence and Injury Prevention, accessed July 2010, MassCHIP v. 3.00r323
- 56 MA Division of Health Care Finance & Policy, Registry of Vital Records and Statistics. MA Department of Children and Families. 2007 Child Fatality Report (MA Inpatient Hospital and Emergency Department Discharge Database). Boston, MA: MA Department of Public Health
- 57 Leeb RT, Paulozzi L, Melanson C, Simon T, Arias I. Child maltreatment surveillance: uniform definitions for public health and recommended data elements, version 1.0. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control 2008.
- 58 U.S. Department of Health and Human Services, Administration on Children, Youth and Families. *Child Maltreatment* 2008. 2010.
- 59 *ibid*
- 60 *ibid*
- 61 *ibid*
- 62 *ibid*
- 63 Substance Abuse, DPH Funded Program Utilization (2008). Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]
- 64 *ibid*
- 65 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. Census 2000: Living Arrangements, Children <18: Own Child of Single Male Householder and Own Child of Single Female Householder. 2000. Census 2000 Data. Children<18 Living in Households, Selector Value 0-11.
- 66 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. Natality (Vital Records). Births: Total Births Residence, Less than High School (<12). 2004-2008. Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. Natality (Vital Records). Births: Total Births Residence. 2004-2008
- 67 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. Births (Vital Records) ICD 10 (2008), Teen Birth Rate. Population File: Census Counts 1990, Inter-censal and Post-censal Estimates (2005).
- 68 MA Department of Corrections Inmate Management System, as of May 24, 2010. Report of “Male and Female Criminally Sentenced Inmates Self-Reporting Children and a Last Known Address in Massachusetts”
- 69 See Commonwealth of Massachusetts, Substance Abuse Strategic Plan, 2005 at <http://www.mass.gov/Agov3/docs/Substance%20Abuse%20Strategic%20Plan.ppt>
- 70 Behavioral Risk Factor Surveillance System (BRFSS): 2006-2008. Boston, MA: Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Public Health.
- 71 *ibid*
- 72 Substate Estimates from the 2006-2008 National Surveys on Drug Use and Health. U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, Substance Abuse and Mental Health Services Administration, Office of Applied Studies. 2008.
- 73 *ibid*
- 74 *ibid*
- 75 *ibid*
- 76 Substance Abuse, DPH Funded Program Utilization (2008). Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]
- 77 U.S. Department of Justice. Uniform Crime Report, 2006. <http://www.fbi.gov/ucr/cius2006/documents/violentcrimemain.pdf>. (Accessed 8/2010)
- 78 A Shared Vision for Massachusetts Youth and Young Adults, Massachusetts Department of Public Health, 2008
- 79 2010, Massachusetts Court Filings, available on [mass.gov](http://mass.gov), total court filings for 2009
- 80 U.S. Department of Justice. Uniform Crime Report, 2006. <http://www.fbi.gov/ucr/cius2006/documents/violentcrimemain.pdf>. (Accessed 8/2010)
- 81 Healthy People 2020 Proposed Objectives, Injury and Violence Prevention, 2010. <http://www.healthypeople.gov/hp2020/Objectives/TopicArea.aspx?id=31&TopicArea=Injury+and+Violence+Prevention> (Accessed 8/2010).
- 82 Federal Bureau of Investigation, Uniform Crime Reports, Crime in the United States, Persons Arrested. Table 69 and Table 41.
- 83 Federal Bureau of Investigation, Uniform Crime Reports, Crime in the United States, Persons Arrested.
- 84 FBI Uniform Crime Reports. Crime in the United States, 1986–2005. Persons Arrested.
- 85 Uniform Crime Reports, Crime in the United States, Persons Arrested.
- 86 Department of Public Health. Health of Massachusetts. Boston, MA; April 2010.
- 87 Domestic Violence Homicides in Massachusetts Tracking Analysis 2003-2009 (as of 10/1/09). Accessed October 30 2009 via <http://www.JaneDoe.org>.
- 88 Massachusetts Violent Death Reporting System (MAVDRS), DPH
- 89 Department of Public Health. Health of Massachusetts. Boston, MA; April 2010.
- 90 Massachusetts Department of Public Health, Bureau of Family Health and Nutrition, Office of Data Translation. Massachusetts Pregnancy Risk Assessment Monitoring System, (PRAMS) 2008.
- 91 The Facts on Reproductive Health and Violence Against Women. Family Violence Prevention Fund. Accessed October 2009 via <http://www.endabuse.org>

- 92 Massachusetts Department of Public Health, Bureau of Family Health and Nutrition, Office of Data Translation. Massachusetts Pregnancy Risk Assessment Monitoring System, (PRAMS) 2008.
- 93 Silverman JG, Decker MR, Reed E, Raj A. Intimate partner violence victimization prior to and during pregnancy among women residing in 26 U.S. states: Associations with maternal and neonatal health American Journal of Obstetrics and Gynecology July 2006;195(1): 140-148.
- 94 Jane Doe Inc. Facts and Stats 2009. Domestic Violence Awareness Month.
- 95 Holt VL, Kernic MA, Lumley T, Wolf ME, Rivara FP. Civil protection orders and risk of subsequent police-reported violence. JAMA 2002;288(5):589.
- 96 Wolf ME, Holt VL, Kernic MA, Rivara FP. Who gets protection orders for intimate partner violence? Am.J.Prev.Med. 2000;19(4):286-291.
- 97 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. US Census 2000 (SF3): Income and Poverty Status of families living at below 185% FPL. (2000). Retrieved from <http://www.mass.gov/dph/masschip>
- 98 Division of Unemployment Assistance. (2010). Labor force, employment and unemployment in Massachusetts (custom report). Boston, MA: MA Executive Office of Labor and Workforce Development
- 99 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software] US Census 2000 (SF3): Income and Poverty Status of individuals 0-5 living below 185% FPL. (2000). Retrieved from <http://www.mass.gov/dph/masschip>
- 100 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. (2008). Percentage of premature births (Vital Records) ICD 10. Retrieved from <http://www.mass.gov/dph/masschip>
- 101 Housing Unit (2009-2010).Number of families seeking information and/or EA benefit at DHCD offices (FY11) (custom report. Boston, MA: MA Department of Housing and Community Development.
- 102 ibid
- 103 Housing Unit (2009-2010).Number of families seeking information and/or EA benefit at DHCD offices (FY11) (custom report. Boston, MA: MA Department of Housing and Community Development
- 104 ibid
- 105 (2007). Percentage of children (0-12) receiving food stamps (custom report). Boston, MA: MA Department of Transitional Assistance MA
- 106 2009-2010 School and District Profiles. Boston, MA: MA Department of Elementary and Secondary Education.
- 107 (2009). Percentage of homeless children ages 0-12 receiving childcare (custom report). Boston, MA: MA Department of Early Education and Care.
- 108 2009-2010 School and District Profiles. Boston, MA: MA Department of Elementary and Secondary Education
- 109 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software] Department of Transitional Assistance (DTA): Recipients of Temporary Assistance to Families with Dependent Children (TAFDC). (2009). Retrieved from <http://www.mass.gov/dph/masschip>
- 110 Wight, VR., Thampi, K and Briggs, J. Who Are America's Poor Children? Examining Food Insecurity Among Children in the United States. August 2010.
- 111 Wight, VR., Thampi, K and Briggs, J. Who Are America's Poor Children? Examining Food Insecurity Among Children in the United States. August 2010.
- 112 U.S. Department of Health and Human Services. Developing Healthy People 2020. Access to Health Services Proposed Objectives. <http://www.healthypeople.gov/hp2020/Objectives/TopicArea.aspx?id=10&TopicArea=Access+to+Health+Services> (Accessed 8/2010).
- 113 U.S. Department of Health and Human Services. Developing Healthy People 2020. Social Determinants of Health. <http://www.healthypeople.gov/hp2020/Objectives/TopicArea.aspx?id=44&TopicArea=Social+Determinants+of+Health> (Accessed 8/2010).
- 114 Department of Labor, Bureau of Labor Statistics. The Unemployment Situation—July 2010. <http://www.bls.gov/news.release/pdf/empst.pdf> (Accessed 8/2010).
- 115 Division of Unemployment Assistance, Massachusetts.
- [http://www.mass.gov/?pageID=elwdagencylanding&L=4&L0=Home&L1=Government&L2=Departments+and+Divisions+\(EOLWD\)&L3=Division+of+Unemployment+Assistance&sid=Elwd](http://www.mass.gov/?pageID=elwdagencylanding&L=4&L0=Home&L1=Government&L2=Departments+and+Divisions+(EOLWD)&L3=Division+of+Unemployment+Assistance&sid=Elwd) (Accessed 8/2010).
- 116 Health Resources and Services Administration, Maternal and Child Health Bureau. (2008). The National Survey of Children with Special Health Care Needs Chartbook 2005–2006. Rockville, Maryland: U.S. Department of Health and Human Services
- 117 Massachusetts Executive Office of Health and Human Services, 2010
- 118 U.S. Department of Agriculture, Economic Research report, No. 83, 2009. <http://www.ers.usda.gov/StateFacts/MA.htm>
- 119 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0)
- 120 2009-2010 School and District Profiles. Boston, MA: MA Department of Elementary and Secondary Education.
- 121 ibid
- 122 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. Natality (Vital Records) (2008).Total Birth Residence of mothers in Massachusetts (Birthplace of mother). Retrieved from <http://www.mass.gov/dph/masschip>
- 123 Massachusetts Department of Early and Secondary Education (DESE), State Profile, 2008.
- 124 Passel, Jeffrey S. and D'Vera Cohn. 2010. Unauthorized Immigration Flows Are Down Sharply since Mid-Decade. Washington, DC: Pew Hispanic Center. (September 1, 2010) <http://pewhispanic.org/files/reports/126.pdf>
- 125 Refugee and Immigrant Health Program. (2005-2009). Refugee arrivals in MA by country of origin. Boston, MA: MA Department of Public Health.
- 126 (2010). Healthy Start program caseload (custom report). Boston, MA: Massachusetts Department of Mental Health
- 127 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. Natality (Vital Records) (2000). Percentage of Armed Forces. Retrieved from <http://www.mass.gov/dph/masschip>
- 128 Massachusetts Community Health Information Profile (MassCHIP): Massachusetts Department of Public Health (Version 3.0) [Software]. Population File: Percentage of civilian Veterans. (2000). Retrieved from <http://www.mass.gov/dph/masschip>

