

# Health of Boston's Children

Boston Survey of Children's Health: Parent and Caregiver Perspectives



BOSTON  
PUBLIC  
HEALTH  
COMMISSION



Building a Healthy Boston

With support from



Boston  
Children's  
Hospital

Until every child is well®

## Boston Child Health Study

- Boston Survey of Children's Health
- Child Health Assessment Mapping Project
- Medicaid Claims Data Analysis

**Copyright Information:**

All material contained in this report is in the public domain and may be used and reprinted without special permission; however, citation as to the source is appropriate.

**Suggested Citation:**

Health of Boston's Children: Parent and Caregiver Perspectives  
Boston Public Health Commission, Research and Evaluation Office  
Boston, Massachusetts, 2013

# **Health of Boston's Children**

**Boston Survey of Children's Health:  
Parent and Caregiver Perspectives**

Thomas M. Menino, Mayor, City of Boston

Paula Johnson, MD, MPH, Chair  
Board of the Boston Public Health Commission

Barbara Ferrer, PhD, MPH, MEd, Executive Director  
Boston Public Health Commission

### **Acknowledgements**

This report was prepared by: Deborah Allen, ScD; Helen Ayanian, BA; Neelesh Batra, MSc; Dan Dooley, BA; Rachel Lum Ho, MPH; Diana Santiago, JD, MPH; Snehal N. Shah, MD, MPH; Phyllis Sims, MS; Rashida Taher, MPH; and Jun Zhao, PhD.

The Boston Child Health Study could not have been accomplished without financial support from the Office of Child Advocacy at Boston Children's Hospital, as well as support from Boston Children's Hospital's Center for Collaborative Community Research (C-CORE). C-CORE is a center to facilitate community-based participatory research co-founded by Boston Children's Hospital, the Boston Public Health Commission, the Boston Public Schools, and the Boston Conference of the Massachusetts League of Community Health Centers and funded by the National Institutes of Health (NIH RC4 HD066907, Mark Schuster, Principal Investigator). Special thanks to Shari Nethersole, MD; John Riordan, MCRP; Laura Bogart, PhD; and Mark Schuster, MD, PhD, of Boston Children's Hospital for their partnership throughout the design and reporting of the study. The Boston Survey of Children's Health also benefitted from input from the C-CORE Community Academic Advisory Board (CAAAB).

Special thanks also to Anisha Asundi, BA; Charity Curtis, BS; Daniella Dominguez, MPH; Anne McHugh, MS; Huy Nguyen, MD; Ramya Palacholla, MD; Margaret Reid, RN, BA; Alexander Su, MPH; and Audrey Wolfe, BS for their contributions and feedback during the preparation of this report.

Finally, we are grateful to the 2,100 Boston mothers, fathers, grandparents, and other caregivers who took the time to participate in the survey. Their contributions make this report and future reports and research based on these data possible. Without them, we would not be able to fulfill our ultimate purpose, which is to use information about our population to shape present and future child health programs, policies, and research that will improve the health of all children in Boston and beyond.

# Table of Contents

|  |     |
|--|-----|
| Introduction .....   | 6   |
| Report Overview .....  | 7   |
| Executive Summary .....  | 8   |
| Health Equity and Social Determinants of Health .....  | 14  |
| Methods .....  | 19  |
| Note to Readers .....  | 23  |
| Chapter 1: Demographic Profile of Boston's Children and Families .....                           | 27  |
| Boston's Child Population.....   | 28  |
| Household Income and Poverty .....   | 34  |
| Parent and Caregiver Education and Employment.....   | 38  |
| Chapter 2: Health and Health Services .....  | 45  |
| General Health Status among Boston Children .....  | 46  |
| Specific Health Conditions.....  | 53  |
| Pediatric Health Care Utilization .....  | 56  |
| Health Insurance and Cost of Health Care for Boston Parents and Caregivers.....                  | 61  |
| Barriers to Families Receiving Health Care for Their Child When They Need It .....               | 66  |
| Parent or Caregiver Trust in Medical Providers.....  | 68  |
| Chapter 3: Children at Home .....  | 73  |
| Family Structure and Parent or Caregiver Marital Status.....                                     | 74  |
| Housing Status and Stability among Boston Children.....  | 77  |
| Life at Home.....  | 81  |
| Infancy and Early Childhood.....   | 91  |
| Chapter 4: Children at School.....   | 101 |
| Life at School .....   | 102 |
| Parents and Caregivers and the School Environment .....  | 108 |
| Chapter 5: Children and Families in Boston Communities.....                                      | 115 |
| Child and Family Engagement with Community Resources and Physical Activity.....                  | 116 |
| Community Quality of Life.....   | 124 |
| Chapter 6: Children with Special Health Care Needs at Home, in School and in the Community ..... | 131 |
| Demographic Characteristics of Children with Special Health Care Needs in Boston .....           | 132 |
| Children with Special Health Care Needs at Home .....  | 137 |
| Children with Special Health Care Needs and the Cost of Healthcare .....                         | 141 |
| Children with Special Health Care Needs at School .....  | 142 |
| Children with Special Health Care Needs and Their Families in the Community .....                | 145 |
| Chapter 7: Parent and Caregiver Experiences Raising Children in Boston.....                      | 151 |
| Health and Well-being of Boston Parents and Caregivers.....                                      | 152 |
| Impact of Childcare on Family Employment and Participation in Public Benefit Programs.....       | 158 |
| Boston Survey of Children's Health Questions used in Health of Boston's Children Report.....     | 163 |

### Introduction

Welcome to *Health of Boston's Children: Parent and Caregiver Perspectives!* This report presents findings from the 2012 Boston Survey of Children's Health (BSCH), one part of the three-part Boston Child Health Study collaboration between the Boston Public Health Commission and Boston Children's Hospital. The study aims to provide information about child health that will inform policies and programs across the city. In addition to the BSCH, the study includes a neighborhood environmental assessment and a child health care utilization analysis. Together, the three parts of the study provide data about the health of children living in Boston, experiences of families raising children in the city, children's use of health and related services, and the environments in which children live, learn, play, and grow. The study addresses important gaps in our knowledge of Boston children's health. First, it provides data at the city level as well as for specific subpopulations such as racial and ethnic groups, gender groups, and family income level. Second, it provides information about children of all ages (from 0 to 17); past studies have focused on infancy and early childhood and on teens, but have left gaps in our knowledge about school aged children. Third, it focuses on the environments in which Boston children live. Research over the past decade makes clear that a child's environment, including his or her social environment, has tremendous influence on health status not just in childhood but across the life span [1, 2, 3]. The Boston Child Health Study embraces this understanding, providing insight upon which to build a healthier Boston.

The BSCH, which is the primary data source for this report, presents the perspectives of parents and caregivers of Boston children on a wide range of child health issues. These perspectives were gathered through a random digit dial phone survey modeled after the National Survey of Children's Health (NSCH). The National Survey of Children's Health has been implemented three times in the past 10 years by the federal Maternal and Child Health Bureau and the National Center for Health Statistics, providing national and state-level data on a wide range of issues impacting child health. By using a similar survey design that includes many questions from the NSCH, the BSCH provides data that will, for the first time, make it possible to compare outcomes for children in Boston with those for Massachusetts and the nation as a whole.

The two additional components of the Boston Child Health Study will be featured in separate reports to be issued in the future. The first, an assessment of neighborhood environment based on citywide GIS analysis and in-depth environmental scans in three Boston communities will be released in winter of 2013-2014. The final report in the series will present data on child health care utilization based on analysis of insurance data.

#### References:

1. Williams, D. R., Mohammed, S. A., Leavell, J., & Collins, C. (2010). Race, socioeconomic status, and health: complexities, ongoing challenges, and research opportunities. *Annals of the New York Academy of Sciences*, 1186(1), 69-101.
2. Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: the effects of neighborhood residence on child and adolescent outcomes. *Psychological bulletin*, 126(2), 309.
3. Muhajarine, N., Labonte, R., Williams, A., & Randall, J. (2008). Person, perception, and place: what matters to health and quality of life. *Social Indicators Research*, 85(1), 53-80.

## Report Overview

This report begins with an executive summary and is followed by a section on health equity and social determinants of health, which presents well-documented inequities in child health, explains the social determinants central to the persistence of these inequities, and provides context that highlights the importance of the information presented in the rest of the report. This is followed by a description of the Boston Survey of Children's Health (BSCH) methods and a section called "Note to Readers", which is a compilation of answers to questions readers may have as they review this report.

Next, Chapters 1-7 present information related to different aspects of child health. Chapter 1 presents demographic and socioeconomic information about Boston children and families; Chapter 2 provides data on health, utilization of health services, and family experiences with the health care system; Chapter 3 presents findings on health and wellness-related experiences and behaviors centered in the home; Chapter 4 provides information on child and parent or caregiver experiences centered at school; Chapter 5 presents data on community-level experiences related to health and well-being among children and parents or caregivers; Chapter 6 provides data on the health and experiences specific to Boston children with special health care needs and their families; and Chapter 7 presents findings relating to parent and caregiver health and experiences raising children in Boston.

Each chapter is divided into sections that first provide information and context from the literature about how the indicators presented in the section relate to child health and why they are important, followed by findings from the BSCH, and in some cases the U.S. Census Bureau. Findings are presented in tables and charts that show prevalence of experiences or outcomes; comparisons between Boston children and children statewide or nationally; and comparisons by different variables such as race and ethnicity, family income, gender, age, and more. Important findings and differences are highlighted in text below each table. Each chapter also ends with a summary of key messages and findings.

# **Executive Summary**

*Health of Boston's Children: Parent and Caregiver Perspectives* provides information about the health of children living in the city of Boston through parent and caregiver perceptions about their children's health, health-related resources, and quality of life. It is based on the Boston Survey of Children's Health (BSCH) – a citywide phone survey of 2,100 Boston parents and caregivers. Findings presented throughout this report for Massachusetts and the United States are based on the National Survey of Children's Health. This report does not identify causality or make policy recommendations for observed child health and social realities. Rather, the purpose of *Health of Boston's Children: Parent and Caregiver Perspectives* is to provide descriptive information about the health and related experiences of Boston children and families in order to encourage dialogue, inform policy and practice, and stimulate further research aimed at eliminating health inequities and improving the health of Boston's children. What follows is a brief summary of some of the descriptive information presented in this report.

### **Health Equity and Social Determinants of Health**

Health inequities are differences in health outcomes across social groups that are systemic, avoidable, unfair, and rooted in social and economic inequality [1]. Achieving health equity in our society requires that every person, regardless of his or her social position or socially defined circumstances, has equal opportunity to attain his or her full health potential [1]. To pursue health equity, it is crucial to first understand the persistent health inequities that exist in our communities.

Inequities between health outcomes of White children and children of other racial and ethnic groups in the United States have been well documented. For example, White children have lower rates of cerebral palsy, HIV/AIDS and spina bifida than Black children and Hispanic children [2]. White children also have fewer emergency department visits and hospitalizations for asthma and have better glycemic control with type 1 diabetes than Black children and Hispanic children [2].

Although well documented, health inequities among children may be difficult to detect in studies such as BSCH given the relatively small sample size and low prevalence of diseases in the child population. What this survey and report do provide is unprecedented information on social conditions across groups of Boston children and families that are known to contribute to health inequities. These conditions are referred to as *social determinants of health*. Social determinants of health are non-biological factors that directly impact health and well-being. For child health, these factors include the safety and stability of a child's home and community, access to healthy foods, convenient transportation, health services, and good schools, among multiple other factors [3].

In the United States, racism creates and perpetuates health inequities among children and adults. Many of the social inequities discussed above have origins in discriminatory laws, policies, and practices that have historically denied people of color the right to earn income, own property, and accumulate wealth [4]. Racism continues to drive health inequities today, as people of color are faced with discrimination in virtually every aspect of life, including employment, access to healthy foods and encounters with the criminal justice system [3, 4, 5, 6]. Research suggests that in addition to limiting people of color's ability to access health promoting resources such as health care, high quality housing, neighborhoods and schools, experiences with pervasive racial discrimination may result in stress that can be harmful to health [4, 7]. Understanding the multi-layered impact of racism on all aspects of society, including socioeconomic status, health behaviors, neighborhood environment, and individual experiences of racism and stress, is essential to addressing racial health inequities. The effects of racism and discrimination on child health are even more complex, given that children's experiences with racism and their responses are affected by stage of cognitive and social development, as well as family and caregiver experiences with racism [7].

### Demographic Profile of Boston Children and Families

This chapter provides context for subsequent chapters by presenting demographic and socioeconomic information relevant to child health and well-being.

Key demographic findings presented in this chapter:

- Family households (with and without children) account for 46.0% of all households in Boston. Twenty-three percent of households were family households with children ages 0-17. The overall Boston population of children under age 18 was 116,559 in the year 2000 and 103,710 in 2010, a decrease of about 11% over the 10 years.
- Black and Latino children make up the highest percentages of Boston children at 33.2% and 30.1% respectively.
- About 92% of Boston children were born in the United States. Higher percentages of Asian and Latino children were born outside the United States than White children. The percentage for Black children born outside the United States was similar to White children.
- English was the primary language most widely spoken in Boston children's homes (77.7%) followed by Spanish (16.2%). The BSCH was only conducted in English and Spanish; thus, children who primarily speak other languages at home may be underrepresented.

Key findings related to socioeconomic status:

- More than a quarter of families with children lived in poverty. North Dorchester and Roxbury have significantly higher percentages of families with children living in poverty than the city overall (39.2% and 46.0% respectively).
- Higher percentages of White children lived in households with higher incomes and families and in which a parent or caregiver had at least a bachelor's degree than Asian, Black, and Latino children.

### Child Health Status and Utilization of Health Services

Data presented in this chapter about child health and health care utilization can be used to address the health of children in Boston, improve systems of care for children and families, and identify paths for future research.

Key survey findings related to health status from this chapter include:

- Lower percentages of Boston children were in very good or excellent general health and very good or excellent dental health than Massachusetts children.
- Higher percentages of White children and children who lived in households with higher family incomes and increased parent or caregiver educational attainment had good or better general and dental health than Black and Latino children, children who lived in households with lower family incomes, and children whose parents and caregivers had less educational attainment respectively.
- A higher percentage of Boston children were overweight or obese than children in Massachusetts and the United States.
- A higher percentage of children living in households with family income below the federal poverty level (FPL) were born prematurely than children living in households with income 400% or more of FPL.

## **Health of Boston's Children**

Key findings related to the utilization of health services include:

- Almost 93% of Boston children had at least one usual place of care, and for most children this was a community health center, doctor's office, and/or hospital outpatient department. A higher percentage of Black children went to the emergency room for care than White children.
- A higher percentage of Boston children received preventive medical care than children living in the United States. Higher percentages of White children, children who lived in higher-income households, and children who had health insurance other than MassHealth/Medicaid received preventive medical care than Black and Latino children, children in lower-income families, and children with MassHealth/Medicaid.
- Insurance coverage for Boston children was higher than the national average, but lower than the statewide percentage for Massachusetts.
- Major problems encountered by parents or caregivers when their children needed medical care in the past year included the inability to take time off from work and inadequate health insurance. Higher percentages of children in lower-income families and Black and Latino children had parents or caregivers who reported problems paying their child's medical bills in the past year than children in higher-income families and White children respectively.
- A higher percentage of children who lived in lower-income households had parents or caregivers who frequently felt that doctors did not do everything they should for their child's medical care.

### **Children at Home**

Family structure and parent or caregiver marital status can impact family dynamics and children's experiences at home. BSCH results reveal that:

- The most common family structures are two-parent biological or adoptive families (47.3%) and mother-only (no father present) families (39.4%). Higher percentages of Black and Latino children and children living in lower-income households lived in families headed by single mothers than White children and children from higher-income households respectively.
- About 55% of Boston children lived with parents or caregivers who were currently married.

The home is the largest asset for most families and homeownership is associated with residential stability. Key findings from this section include:

- Forty-two percent of Boston children lived in homes owned by their parents or caregivers. Higher percentages of White children and children with married parents or caregivers live in owned homes than Asian, Black, or Latino children and children with unmarried parents or caregivers.
- Higher percentages of Black and Latino children and children in fair or poor general health had changed residence more than twice than White children and children in good or better general health.
- Children in fair or poor health were disproportionately represented in public housing and households that receive rental assistance.

Positive experiences at home can promote resilience in children while negative experiences increase vulnerability. Key findings about Boston children's experiences in the home include:

- A lower percentage of Boston children had meals with their family on a regular basis than children in Massachusetts and the United States.

- Higher percentages of children in public housing or in households that received rental assistance lived with smokers than children whose families did not receive governmental housing assistance.
- Nine percent of Boston children had been exposed to three or more ACEs (Adverse Childhood Experiences), which is similar to percentages for Massachusetts and the United States.

Experiences in infancy and early childhood can shape future health and development and are often centered in the home. The BSCH found that:

- A majority of Boston children (81.2%) were given breast milk for some period of time with similar percentages across racial and ethnic groups. A lower percentage of children with special health care needs were ever fed breast milk than children without special health care needs.
- Percentages of children whose parents participated in infant home-visiting programs were similar across racial and ethnic groups and parent or caregiver educational attainment.
- The percentage of children who received 10 or more hours of childcare per week from a non-relative was higher in Boston than in the United States overall but similar to Massachusetts.

### **Children at School**

Experiences with school, including parent or caregiver perceptions of the school environment, can affect children's present health and well-being and influence their aspirations and opportunities for the future. Main findings from this chapter include:

- About 70% of Boston school-aged children were enrolled in public school. Higher percentages of Black and Latino children were enrolled in public school than White children, and a higher percentage of White children were enrolled in private or parochial school than Black and Latino children. A higher percentage of children whose parents or caregivers had higher educational attainment attended private or parochial school or were home-schooled than children whose parents or caregivers had less education.
- A higher percentage of Latino children in Boston had repeated a grade in school since starting kindergarten than White children. A higher percentage of children in fair or poor health had repeated a grade in school since starting kindergarten than children in good or better health.
- There were no differences in school attendance by racial and ethnic group or by child's general health status.
- Parents' and caregivers' satisfaction with the quality of their child's education did not differ by child's racial and ethnic group or type of school, but a higher percentage of children in good or better general health had parents or caregivers who were satisfied with the quality of their child's education than children in fair or poor health.
- Over one-quarter (27.1%) of Boston school-aged children were bullied in the past year.

### **Children and Families in Boston Communities**

Encounters that children and families have within their communities influence child health, well-being, and quality of life. Data presented in this chapter show that:

- A lower percentage of children in Boston participated in afterschool activities or had used community recreation centers, parks, and playgrounds than children in Massachusetts and the United States overall.

## **Health of Boston's Children**

- A higher percentage of White children than Black or Latino children had been to a park or playground in the past year.
- Higher percentages of White children engaged in vigorous physical activity outside the school setting than Black and Latino children.
- Almost 16% of Boston children had witnessed violence in their neighborhoods. Nearly twenty percent of both Black and Latino children reported witnessing violence compared to 5% of White children.

### **Children with Special Health Care Needs at Home, in School, and in the Community**

Children with special health care needs (CSHCN) are a diverse population in terms of demographics and experiences with the health care system, at home, and in the community.

- The percentage of CSHCN in Boston (19.3%) was similar to the percentage for Massachusetts and the United States.
- A lower percentage of CSHCN lived in two-parent families than non-CSHCN and a higher percentage of CSHCN lived in households receiving public rental assistance than non-CSHCN.
- A higher percentage of CSHCN had been exposed to three or more ACEs (Adverse Childhood Experiences) than non-CSHCN.
- Among children ages six to seventeen, a higher percentage of non-CSHCN participated in a sport or club activity than CSHCN. There was no difference in participation of children with and without special health care needs at a community or recreation center in the past year.

### **Parent and Caregiver Experiences Raising Children in Boston**

Parents and caregivers are among the most influential people in children's lives. As such, their experiences and their health and well-being are important to consider among the factors that shape child health. Key findings from this chapter include:

- Over 60% of Boston children had parents or caregivers in excellent or very good general and mental health. A higher percentage of children in good or better health had a parent or caregiver in good or better health, and a higher percentage of children in fair or poor health had a parent or caregiver in fair or poor health. A higher percentage of White children had parents or caregivers in good or better general health and mental health than Black and Latino children.
- About 64% of Boston children had parents or caregivers who reported they were coping very well with the demands of parenthood, a percentage higher than in Massachusetts overall but similar to the percentage nationally. A lower percentage of Boston children had parents who reported that they never or rarely felt angry with their child recently compared to Massachusetts and the United States overall.
- Sixteen percent of Boston children had parents or caregivers who encountered employment-related difficulties due to issues with childcare.

## Executive Summary

### References:

1. Boston Public Health Commission Center for Health Equity and Social Justice (2013). What is Health Equity?. *The Center for Health Equity and Social Justice*. Retrieved August 13, 2013 from <http://www.bphc.org/chesj/about/Pages/WhatisHealthEquityDisparities.aspx>
2. Berry, J. G., Bloom, S., Foley, S., & Palfrey, J. S. (2010). Health inequity in children and youth with chronic health conditions. *Pediatrics*, 126(Supplement 3), S111-S119.
3. Williams, D. R., Mohammed, S. A., Leavell, J., & Collins, C. (2010). Race, socioeconomic status, and health: complexities, ongoing challenges, and research opportunities. *Annals of the New York Academy of Sciences*, 1186(1), 69-101.
4. Coll, C. G., Crnic, K., Lamberty, G., Wasik, B. H., Jenkins, R., Garcia, H. V., & McAdoo, H. P. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development*, 67(5), 1891-1914.
5. Bertrand, M., & Mullainathan, S. (2003). *Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination* (No. w9873). National Bureau of Economic Research.
6. Poe-Yamagata, E. & Jones, M.A., Nat'l Council on Crime & Delinquency, (2000). *And Justice for Some*.
7. Pachter, L. M., & Coll, C. G. (2009). Racism and child health: a review of the literature and future directions. *Journal of Developmental and Behavioral Pediatrics: JDBP*, 30(3), 255

The entire *Health of Boston's Children: Parent and Caregiver Perspectives* report will be available on the Boston Public Health Commission's website at [www.bphc.org](http://www.bphc.org).

# Health Equity and Social Determinants of Health

Achieving health equity in our society requires that every person, regardless of his or her social position or socially defined circumstances, has equal opportunity to attain his or her full health potential [1]. To pursue health equity, it is crucial to first understand the persistent health inequities that exist in our communities.

Health inequities are differences in health outcomes across social groups that are systemic, avoidable, unfair, and rooted in social and economic inequality [1]. Not all group differences in health outcomes are inequitable, of course. For example, people over the age of 60 have high rates of chronic disease compared with younger people because of changes that occur as the human body ages. However, if a sub-population of people over the age of 30 had the same rate of chronic disease as is typical for people over the age of 60, this difference would be considered a health inequity because it suggests that social conditions, rather than biological factors, limited this sub-population's ability to attain optimal health.

Inequities between health outcomes of White children and children of other racial groups in the United States have been well documented. For example, White children have lower rates of cerebral palsy, HIV/AIDS, and spina bifida than Black children and Hispanic children [2]. White children also have fewer emergency department visits and hospitalizations for asthma and have better glycemic control with type 1 diabetes than Black children and Hispanic children [2]. It has also been shown that while Black children tend to show more symptoms of ADHD than White children, they are less likely to be diagnosed [2].

Similar health inequities by race and ethnicity can be seen in US childhood mortality data, which show that White children die less often from asthma and diabetes and survive longer with Down syndrome, traumatic brain injury, and acute leukemia than Black and Hispanic children [2]. In fact, overall childhood mortality rates in the United States are higher for African-American children, Native Hawaiian children, and Puerto-Rican children than for White children [3].

Although well documented, similar differences in health outcomes among children may be difficult to detect in studies such as the BSCH given the sample size and the relatively low prevalence of diseases in the child population. What this survey and report do provide is unprecedented information on social conditions across groups of Boston children and families that are known to contribute to health inequities. These conditions are referred to as social determinants of health.

Social determinants of health are non-biological factors that directly impact health and well-being. For child health, these factors include the safety and stability of a child's home and community, as well as his or her access to healthy foods, convenient transportation, health services, and good schools [4]. They also include exposures to environmental toxins, violence, and family stress that are harmful to health [4]. Globally, researchers from the World Health Organization have demonstrated the importance of social determinants, noting that social position is closely tied to health outcomes [5]. In the United States, unequal access to resources that promote health and unequal exposure to health risks are largely based on these socially constructed characteristics and central to child health inequities [4].

Literature shows differences in the following social determinants of child health across racial and ethnic groups in the United States:

- Housing conditions [6, 7, 8, 9]
- Neighborhood conditions and the built environment [10, 11]
- Exposure to violence [12]
- Opportunities for physical activity [10]
- Access to healthy food [13]
- Parental employment and educational attainment [14, 4]
- Health insurance coverage [15]
- Access to health care [15, 16]

## **Health Equity and Social Determinants of Health**

In this report, you will see similar differences in access to resources and social experiences among Boston children based on race and ethnicity.

While most of the social determinants mentioned are linked in some way to economic position, social determinants of health are not limited to forms of material deprivation. Social marginalization, defined as consistently being made to feel “less than” others, has also been shown to take a toll on health [17]. For example, Boston data show that college-educated Black women not only experience significantly higher rates of low-birth weight deliveries than college-educated White women, but also experience higher rates of low-birth weight deliveries than White women with less than a high school education [18]. Since higher education is generally associated with improved birth outcomes, these data suggest an important inequity rooted in the social marginalization of highly-educated Black women [18].

### **Racism and Health Equity**

In the United States, racism creates and perpetuates health inequities among children and adults. Many of the social inequities discussed above have origins in discriminatory laws, policies, and practices that have historically denied people of color the right to earn income, own property, and accumulate wealth [19]. Racism continues to drive health inequities today, as people of color are faced with discrimination in virtually every aspect of life, including employment, access to healthy foods and encounters with the criminal justice system. A field study on employment discrimination conducted in Boston and Chicago showed that resumes with “White-sounding” names elicited over 50% more call backs and interviews for employment than the same resumes with “Black-sounding” names [20]. Furthermore, improvements of the credentials and quality of resumes with “Black-sounding” names resulted in little to no increase in call backs or interviews; while improvements made to resumes with “White-sounding” names resulted in about a 30% increase in call backs and interviews [20]. Results were similar across all industries [20].

Another study on access to healthy foods, showed that predominantly Black communities, regardless of income, had significantly more fast food outlets and less healthy food options than White communities [13]. Racial discrimination is also evidenced by the differential treatment of youth of color in the criminal justice system [21]. Though a majority of juvenile arrests involve White youth, minority youth are more likely to be detained, formally charged in juvenile court, and waived to adult criminal court than White youth charged with the same crimes [21]. Minority youth are also vastly overrepresented in both juvenile and adult prisons in nearly every state [21]. Research suggests that experiences with this pervasive racial discrimination may result in stress that can be harmful to health [22]. These experiences also limit the ability of people of color to access resources such as health care, high quality housing, neighborhoods and schools, and in turn limit their opportunities to achieve optimal health [19].

Understanding the multi-layered impact of racism on all levels of society including socioeconomic status, health behaviors, neighborhood environment, and individual experiences of racism and stress, is essential to addressing racial health inequities. The effects of racism and discrimination on child health are even more complex given that children’s experiences with racism and their response are affected by stage of cognitive and social development, as well as family and caregiver experiences with racism [22].

### **Impact of Health Inequities from Childhood through Adulthood**

Research shows that health inequities among children persist into adulthood [23, 24]. Poor health and exposure to adverse social and environmental conditions in childhood have been associated with low educational attainment, low income, premature onset and heightened risk of chronic disease, and poor overall health in adulthood [23, 24]. Thus, understanding and eliminating child health inequities is important for improving health and well-being in all communities.

## **Health of Boston's Children**

### **Approaches to Achieving Health Equity**

More research is needed to fully understand the impact of racism and social marginalization on the health of children and families. Health inequities will likely persist as long as social, economic, and environmental resources are distributed unfairly and unequally. Approaches to eliminating health inequity must be built on the understanding that social, economic, and environmental inequity are root causes of the problem, and that improving these conditions is necessary to improving health outcomes among children and families.

In this report, we hope to contribute to the process of working toward health equity for children and families in Boston by collecting and sharing unprecedented information on the health and social experiences of local children and families. It is our hope that this information will be useful for understanding social determinants of health among Boston's children and sparking conversations around strategies to improve the health of all children.

## Health Equity and Social Determinants of Health

### References:

1. Boston Public Health Commission Center for Health Equity and Social Justice (2013). What is Health Equity?. *The Center for Health Equity and Social Justice*. Retrieved August 13, 2013 from <http://www.bphc.org/chesj/about/Pages/WhatisHealthEquityDisparities.aspx>
2. Berry, J. G., Bloom, S., Foley, S., & Palfrey, J. S. (2010). Health inequity in children and youth with chronic health conditions. *Pediatrics*, 126(Supplement 3), S111-S119.
3. Flores, G. (2010). Racial and ethnic disparities in the health and health care of children. *Pediatrics*, 125(4), e979-e1020.
4. Williams, D. R., Mohammed, S. A., Leavell, J., & Collins, C. (2010). Race, socioeconomic status, and health: complexities, ongoing challenges, and research opportunities. *Annals of the New York Academy of Sciences*, 1186(1), 69-101.
5. Marmot, M. (2007). Achieving health equity: from root causes to fair outcomes. *The Lancet*, 370(9593), 1153-1163.
6. Krivo, L. J., & Kaufman, R. L. (2004). Housing and wealth inequality: Racial-ethnic differences in home equity in the United States. *Demography*, 41(3), 585-605.
7. Busacker, A., & Kasehagen, L. (2012). Association of residential mobility with child health: An analysis of the 2007 National Survey of Children's Health. *Maternal and Child Health Journal*, 16(1), 78-87.
8. Crowley, S. (2003). The affordable housing crisis: Residential mobility of poor families and school mobility of poor children. *Journal of Negro Education*, 72(1), 22-38.
9. National Center for Children in Poverty, Mailman School of Public Health, Columbia University (2011). Report: Rent Burden, Housing Subsidies and the Well-being of Children and Youth. *National Center for Children in Poverty*. Retrieved August 1, 2013 from [http://www.nccp.org/publications/pdf/text\\_1043.pdf](http://www.nccp.org/publications/pdf/text_1043.pdf).
10. Garcia, R., Flores, E. S., & Chang, S. M. L. (2003). Healthy children, healthy communities: Schools, parks, recreation, and sustainable regional planning. *Fordham Urban Law Journal*, 31, 1267.
11. Kendrick, D., Mulyaney, C., Burton, P., Watson, M. (2005). Relationships between child, family and neighborhood characteristics and childhood injury: A cohort study. *Social Science & Medicine*, 60, 1905-1915.
12. Finkelhor, D., Turner, H., Ormrod, R., Hamby, S., & Kracke, K. (2009) Children's exposure to violence: A comprehensive national survey. *DIANE Publishing*.
13. Baker, E. A., Shootman, M., Barnidge, E., & Kelly, C. (2006). Peer reviewed: The role of race and poverty in access to foods that enable individuals to adhere to dietary guidelines. *Preventing Chronic Disease*, 3(3).
14. Starfield, B., Robertson, J., & Riley, A. W. (2002). Social class gradients and health in childhood. *Ambulatory Pediatrics*, 2(4), 238-246.
15. Flores G, Tomany-Korman S (2008). Racial and ethnic disparities in medical and dental health, access to care and use of services in US children. *Pediatrics*, 121, e286-298.
16. Stella, M. Y., & Singh, G. K. (2009). Household language use and health care access, unmet need, and family impact among CSHCN. *Pediatrics*, 124(Supplement 4), S414-S419.
17. Lynam, M. J., & Cowley, S. (2007). Understanding marginalization as a social determinant of health. *Critical Public Health*, 17(2), 137-149.
18. Boston Public Health Commission. (2011). *Low Birth Weight: A Public Health Briefing*.
19. Coll, C. G., Crnic, K., Lamberty, G., Wasik, B. H., Jenkins, R., Garcia, H. V., & McAdoo, H. P. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development*, 67(5), 1891-1914.

## **Health of Boston's Children**

20. Bertrand, M., & Mullainathan, S. (2003). *Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination* (No. w9873). National Bureau of Economic Research.
21. Eileen Poe-Yamagata & Michael A. Jones, Nat'l Council on Crime & Delinquency, (2000). *And Justice for Some*.
22. Pachter, L. M., & Coll, C. G. (2009). Racism and child health: a review of the literature and future directions. *Journal of Developmental and Behavioral Pediatrics: JDBP*, 30(3), 255
23. Diderichsen et al (2012). Health inequality-determinants and policies. *Scandanavian Journal of Public Health*, 40 (Suppl 8): 12-105.
24. Case, A., Fertig, A., & Paxson, C. (2005). The lasting impact of childhood health and circumstance. *Journal of Health Economics*, 24(2), 365-389.

# Methods

The Boston Survey of Children's Health (BSCH) is a random digit dial phone survey of adult parents and caregivers of children ages 0-17 years. The survey was implemented from April 2012 through October 2012. The survey questionnaire and methodology are modeled after the National Survey of Children's Health (NSCH) to allow the opportunity to compare data for Boston children with national and Massachusetts data.

## National Survey of Children's Health

The NSCH is a national parent and caregiver phone survey conducted in English, Spanish, Mandarin, Cantonese, Vietnamese, and Korean [1]. The NSCH is sponsored by the federal Maternal and Child Health Bureau, Heath Resources and Services Administration (HRSA), and implemented by the National Center for Health Statistics of the Centers for Disease Control and Prevention (NCHS/CDC). To date, it has been administered a total of three times (2003-2004, 2007-2008, and 2011-2012) [1]. Data are collected from a random, nationwide sample of households with children, with over 1,800 participants from each state [1]. Data for the NSCH are collected in a way that allows for national and state-by-state comparisons of child health assessment and outcomes. All data are available to the public through the Child and Adolescent Health Measurement Initiative (CAHMI) Data Resource Center at: [www.childhealthdata.org](http://www.childhealthdata.org) [1].

Similar to the BSCH, the purpose of the NSCH is to paint a comprehensive picture of children's health across the country, including their physical and social contexts. Topics in the NSCH survey include: child and family demographics; access and use of health care services; physical and mental health status of children and parents or caregivers; and information specific to early childhood, middle childhood and adolescence.

By using a similar survey design that includes many questions from the NSCH, the BSCH provides data that will, for the first time, make it possible to compare outcomes for children in Boston with those for Massachusetts and the nation as a whole.

## BSCH Questionnaire

In 2012, the BSCH was conducted for the first time in the city of Boston. The BSCH questionnaire was developed by integrating the 2011-2012 NSCH questionnaire with additional questions identified by stakeholders. The resulting BSCH questionnaire grouped questions into 15 topical sections:

1. Initial Demographics
2. Health and Functional Status
3. Health Insurance Coverage
4. Health Care Access and Utilization
5. Medical Home
6. Medical Mistrust and Discrimination
7. Early Childhood (0-5 years)
8. Middle Childhood and Adolescence (6-17 years)
9. Family Functioning
10. Sick to School and Work Days Lost
11. Parental Health
12. Neighborhood and Community Characteristics
13. Additional Demographics
14. Additional Health Insurance Questions
15. Locating Information

## Health of Boston's Children

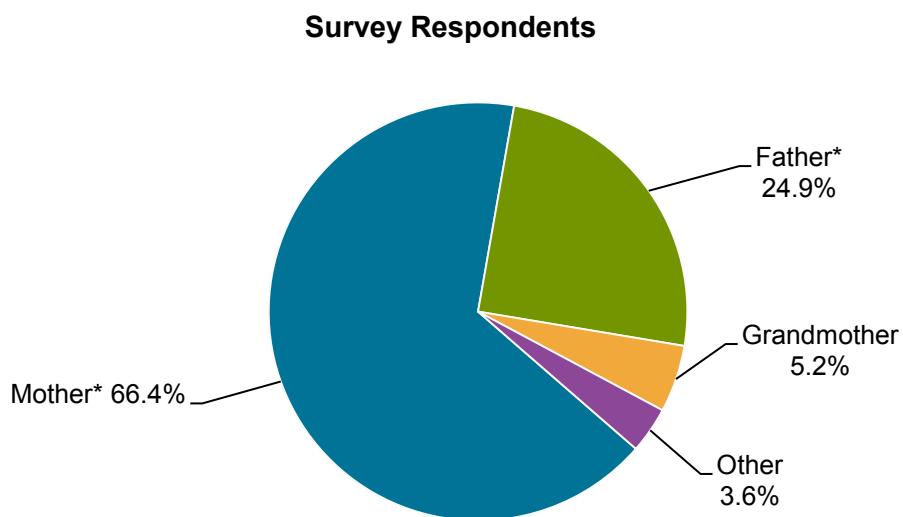
Telephone administration of the survey was conducted from 9 a.m. to 9 p.m., Monday through Friday, and 10 a.m. to 9:30 p.m., Saturday and Sunday, E.S.T. If an interview could not be completed in a single session, at least one callback was attempted within the same month, no more than three days after the first session. The average interview was 31.8 minutes in length.

### BSCH Inclusion Criteria

For a household to be eligible for the BSCH, it must have included at least one child aged 0-17 years and be a private Boston residence. In households with more than one eligible child, the child with the most recent birthday at the time of the interview was selected. Trained interviewers asked to speak with the parent or caregiver who knew the most about the health of the child or children living in the household. If that person was unavailable, interviewers scheduled a time to call back. Only those who were over 18 were eligible to be respondents. A private residence was considered to be an eligible housing unit if it had a separate entrance, occupants ate meals separately from non-occupants, and it was used by its members as their principal or secondary place of residence. Non-eligible households included: (1) vacation homes not occupied by household members for more than 30 days per year; (2) group homes (e.g., sorority and fraternity houses, college dormitories, halfway houses, shelters); and (3) institutions (e.g., nursing homes).

### Sample

The sample for the BSCH included 2,100 parents and caregivers who met the inclusion criteria described above. Eight percent of interviews were conducted in Spanish and the remainder in English. Participants were selected from a random sample of telephone-equipped households in Boston. Of the 2,100 interviews completed, 1,794 were conducted over a landline telephone and 306 over cell phone. Within the cell phone sample, 31% of respondents reported also having a landline telephone in their home. The below chart describes the respondents interviewed for the BSCH based on their relationship to the child that was the subject of the interview.



\*Includes biological, step, foster, and adoptive parent

NOTE: "Other" includes grandfather, aunt, female guardian, siblings, and other relatives or non-relatives in household.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

### Response Rates

Response rates for surveys conducted over landline phones was 40.8%, while the response rate for cellular phones was 33.1%. These rates were higher than response rates for the NSCH, a positive result because response rates provide one measure of interviewing success.

### Weighted Data

In order to make scientifically valid claims about children in Boston, survey responses were adjusted to account for the design of the survey and for population differences. These adjustments were scientific in nature and resulted in weighted data which better represents the Boston population from which the sample was drawn. Weights were created using the 2011 American Community Survey for the City of Boston. Below, the 2010 Census demographic distribution for children ages 0-17 is shown alongside the un-weighted BSCH data. As expected, distributions vary because the 2010 U.S. Census provides an actual count and distribution, whereas the BSCH sample is a randomly drawn sub-sample of the entire population. The weighted BSCH sample more closely matches 2010 Census data than the unweighted BSCH sample, demonstrating that the weighting process provides us with a sample that more closely represents the actual population of Boston.

| Characteristics of Boston Children: Boston Survey of Children's Health and U.S. Census |                               |                             |                         |
|--|-------------------------------|-----------------------------|-------------------------|
|  | BSCH Sample<br>Unweighted (%) | BSCH Sample<br>Weighted (%) | 2010 U.S.<br>Census (%) |
| <b>Gender</b>  |                               |                             |                         |
| Female   | 48.1                          | 49.9                        | 50.8                    |
| Male   | 52.0                          | 50.1                        | 49.2                    |
| <b>Age</b>   |                               |                             |                         |
| Ages 0-5   | 35.6                          | 38.4                        | 36.7                    |
| Ages 6-10  | 24.6                          | 23.4                        | 25.5                    |
| Ages 11-14   | 22.8                          | 20.8                        | 20.5                    |
| Ages 15-17   | 17.1                          | 17.4                        | 17.3                    |
| <b>Race/Ethnicity of Child</b>   |                               |                             |                         |
| Asian  | 3.1                           | 2.8                         | 6.9                     |
| Black  | 25.3                          | 32.8                        | 33.2                    |
| Latino   | 23.2                          | 31.1                        | 30.1                    |
| White  | 38.1                          | 23.7                        | 23.1                    |

NOTE: The percentages for race/ethnicity of child do not add up to 100% because data for multiracial/other race are not shown.

DATA SOURCES: Boston Survey of Children's Health, 2012; Census 2010, US Department of Commerce, Bureau of the Census, American Fact Finder

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

## **Health of Boston's Children**

### **Limitations**

As is the case with all survey data, the BSCH has limitations. First, the data are based entirely on parent or caregiver-reported information and may be subject to reporting errors, including inaccurate recall, and non-response bias (i.e., respondents who answer a question represent a different population from respondents who decline to answer a question). Second, the phone interview format excludes families who do not live in cell phone or landline equipped households (e.g., households without telephones, homeless families). Third, children living in institutional settings were not included in the sample. Finally, due to resource limitations, the survey was only conducted in English and in Spanish; thus, non-English and non-Spanish-speaking parents and caregivers were excluded from participating.

### **Reference**

1. Child and Adolescent Health Measurement Initiative. (2013). National Survey of Children's Health (NSCH), 2011/12, *Fast Facts about the Survey*. Retrieved August 1, 2013 from <http://childhealthdata.org/docs/drc/2011-12-fast-facts.pdf>.

## Note to Readers

This section is a compilation of answers to questions readers may have as they review this report.

### ***What is the difference between census data and survey data?***

*Health of Boston's Children: Parent and Caregiver Perspectives* uses two types of data sources: U.S. Census (excluding the American Community Survey), and survey (U.S. Census American Community Survey, Boston Survey of Children's Health, and the National Survey of Children's Health). Data from the 2000 and 2010 U.S. Census and the American Community Survey, 2006-2010 are presented in Chapter 1: Demographic Profile of Boston's Children and Families.

Census data reflect what is generally considered to be the true underlying frequency of events or population characteristics rather than estimates of the true frequency, since information for each population member is sought.

All data presented from the Boston Survey of Children's Health (BSCH) are survey data. The final dataset was created by collecting information from a randomly selected subset, or sample, of the population: parents and caregivers of Boston's children. The sample was then adjusted statistically (weighted) to allow the calculation of estimates that describe the entire population of Boston children.

Projecting these statistical estimates onto the entire population requires acknowledging a degree of uncertainty about how well the sample data reflect the true frequency of events or characteristics of the entire population. This degree of uncertainty is often quantified and referred to as the "margin of error" and described with a "confidence interval" in order to emphasize that the true frequency exists within a range of values with 95% certainty.

For this report, the confidence intervals for the estimates presented are used to make determinations about whether estimates differ from one another significantly.

### ***When describing survey data, how do we determine if one percentage is higher or lower than another?***

As introduced in the previous question's answer, survey data drawn from a randomly selected subset, or sample, of the population are used to generate point estimates, or percentages, for the population. Confidence intervals present a range of values associated with the point estimate that describe how precise the point estimate is. To determine whether two point estimates differ significantly from each other, the confidence intervals surrounding each estimate can be compared. If the confidence interval for one estimate has overlapping values with the confidence interval for the other estimate then we cannot say with 95% certainty that the two estimates differ significantly. If the confidence intervals do not have overlapping values, then we can say with 95% certainty that one estimate is higher or lower than the other. This determination is often referred to as "statistical significance". In this report, when the text refers to estimates as "higher" or "lower" than each other, it means that these estimates are statistically different from each other with 95% certainty. When the text refers to estimates as "similar" or with no difference, it means that the estimates were not found to be statistically different from each other with 95% certainty.

Making a determination about whether these differences are important, or meaningful, includes interpreting the social context in which these data were collected in any given year, changes in how data were categorized or reported, and citywide programs that may have affected event occurrence.

There are other statistical tests not used for this report that could reveal statistically significant differences in some cases where confidence intervals overlap slightly.

## **Health of Boston's Children**

### ***What does the term “insufficient sample size” mean?***

In the notes underneath the figures, the phrase “insufficient sample size” is used to describe data points that are not presented. This occurs when the stratification of survey data by population groups results in a sample size that is too small to calculate reliable point estimates. Data are also suppressed to protect the confidentiality of respondents when the sample size is too small. For BSCH data, sample sizes of less than 50 respondents are considered too small to calculate reliable rates. That means for all BSCH point estimates or percentages presented in this report, there were at least 50 respondents to the question for each sub-group presented.

### ***How do we determine racial and ethnic designations?***

All racial and ethnic designations in this report are self-reported and presented according to U.S. Census definitions. Several cautions should be kept in mind when using data reported by race and ethnicity. Race and ethnicity are social constructions, not biological facts. There is often more genetic variation between members of the same race than between members of different races. In addition, the meanings of these designations are highly subject to historical, cultural, and political forces. Not only do these designations change over time, but there is also a very subjective element that influences who is considered a member of one group or another. The concept of race can be notably vague: the term “Black”, for example, includes people describing themselves as African American, African, or Caribbean, groups with distinct histories and differing health risks.

Nevertheless, racial designations are useful in that they are nearly universally used by people in the United States to describe themselves, and they allow us to identify and address health inequities that exist across racial and ethnic groups.

Boston-specific data in this report are presented for each racial and ethnic group when sample sizes are large enough to allow presentation of percentages. In most cases we were able to present data for Black, Latino, and White children. Due to the relatively small Asian population in Boston and relatively small sample size for the BSCH, in many cases it was necessary to exclude data for Asian children when presenting variables according to racial and ethnic groups.

Since Latinos can be of any race, the U.S. Census and other data sources often report Latinos within the race categories Black or White. Given the large percentage of the population that Latinos represent and consistent with commonly accepted federal standards, in this report, Latino respondents were separated from other racial and ethnic groups and included as their own category.

### ***How do we define neighborhood boundaries in this report?***

Boston is made up of 17 neighborhoods, which include Allston/Brighton, Back Bay, Charlestown, Chinatown, East Boston, Fenway, Hyde Park, Jamaica Plain, Mattapan, North Dorchester, North End, Roslindale, Roxbury, South Boston, South Dorchester, South End, and West Roxbury. In this report, Chinatown is included as part of the South End and the North End is included as part of Back Bay. Each of Boston’s neighborhoods is distinct in its history, character, and the demographics of its residents.

Neighborhood boundaries can be delineated in a number of ways. In this report, zip codes are frequently used to identify neighborhood boundaries since a child’s zip code of residence was requested during the BSCH telephone interview. In many cases where census data is presented, neighborhood boundaries are delineated using census tracts, although this is not always the case. Whenever neighborhood-level data is presented, specification of neighborhood boundaries is noted underneath the figure.

### ***How do we define poverty?***

There are two predominant definitions of poverty. One is defined by the U.S. Census Bureau and referred to as “poverty thresholds,” and the other is defined by the U.S. Department of Health and Human Services and referred to as “poverty guidelines.” The poverty definition used for data presented in poverty-related charts in this report is that of the U.S. Census Bureau. Poverty estimates for Boston neighborhoods are derived from the U.S. Census, American Community Survey, 2006-2010.

The U.S. Census Bureau’s definition of poverty is a federal definition characterized by a series of “poverty thresholds” which specify pre-tax monetary income maximums in dollars an individual and/or family can earn in a given year and still be declared impoverished. This definition is based on same household of residence and takes into account family size and whether or not any members in one or two-person familial units are over the age of 65. It also takes into account the number of children under age 18. It does not include any income that may have been generated through federal financial assistance programs, capital gains, or from children under the age of 15. Foster children are not included in the calculations.

Since 1969, poverty thresholds have been modified annually to account for inflation according to rates specified by the Consumer Price Index. Poverty thresholds are not adjusted for regional differences in mean/median income levels, nor do they include prison inmates, residents of nursing homes, students who live in on-campus university housing, and persons who live in military barracks. Persons living in shelters are included.

### ***How do we determine whether a child has a special health care need?***

Chapter 6: Children with Special Health Care Needs at Home, at School, and in the Community, as well as other sections of this report, provide data for children that have special health care needs. These children are identified using the Children with Special Health Care Needs (CSHCN) Screener, a five item parent survey-based tool. This tool was developed through a collaborative effort coordinated by the Child and Adolescent Health Measurement Initiative (CAHMI).

The first part of each screener item asks whether a child experiences one of five different health consequences:

- 1) Use or need of prescription medication
- 2) Above average use or need of medical, mental health or educational services
- 3) Functional limitations compared with others of same age
- 4) Use or need of specialized therapies (occupational therapy, physical therapy, speech, etc.); and /or
- 5) Treatment or counseling for emotional or developmental problems

To qualify as having a special health care need, the following criteria must be met:

- a) The child currently experiences a specific consequence
- b) The consequence is due to a medical or other health condition; and
- c) The duration or expected duration of the condition is 12 months or longer.

All three criteria of at least one screener item (or in the case of treatment or counseling for emotional or developmental problems, two parts) must be answered “yes” in order for a child to be identified as having a special health care need.

For more information about the CAHMI CSHCN screener, please see the Child and Adolescent Health Measurement Initiative, The Children with Special Health Care Needs Screener, available at: <http://cahmi.org/ViewDocument.aspx?DocumentID=115> (accessed July 2, 2013).

## **Health of Boston's Children**

### ***How do we determine child weight status based on Body Mass Index (BMI)?***

Chapter 2: Health and Health Services presents data on child weight status using Body Mass Index (BMI). BMI is calculated from a child's height and weight using the following formula:

$$\text{BMI} = \text{weight (kg)} / [\text{height (m)}]^2$$

To determine whether a child is underweight, normal weight, overweight, or obese, his or her BMI is compared against the BMI of other children of the same age and sex using standard growth charts from the Centers for Disease Control and Prevention (CDC). The following table describes the weight status categories:

| Weight Status Category | Percentile Range                                 |
|------------------------|--|
| Underweight            | Less than the 5th percentile                     |
| Normal Weight          | 5th percentile to less than the 85th percentile  |
| Overweight             | 85th percentile to less than the 95th percentile |
| Obese                  | Equal to or greater than the 95th percentile     |

BMI data are not presented for children ages 0-5 and ages 6-10 in this report because the data needed to calculate BMI was missing for more than 20% of respondents in each of those age groups.

### ***How do we calculate neighborhood cohesion in this report?***

Chapter 5: Children and Families in Boston Communities presents data on neighborhood cohesion. The neighborhood cohesion variable was derived from responses to three statements: "People in this neighborhood help each other out"; "We watch out for each other's children in this neighborhood"; "If my child were outside playing and got hurt or scared, there are adults nearby whom I trust to help my child". Respondents were asked whether they definitely agree, somewhat agree, somewhat disagree, or definitely disagree with each statement. Only children with valid responses on all three items were included in the denominator.

Based on the responses to the three statements, the neighborhood cohesion variable was stratified into three categories according to the following criteria:

Definitely or somewhat agree on all three statements=high neighborhood cohesion;

Definitely or somewhat agree on two of the three statements=medium neighborhood cohesion; and

Definitely agree or somewhat agree on only one of the three statements=low neighborhood cohesion.

The NSCH also provided a method to measure neighborhood support. However, the NSCH included one additional statement to the three listed above: "There are people I can count on in this neighborhood", which was not included in the BSCH questionnaire. In order to make the national and state level data comparable to Boston survey data, we dropped the above statement from our analysis and calculated the national and state level neighborhood cohesion using the above criteria.

For more information about the NSCH method for measuring supportive neighborhoods, please visit: <http://childhealthdata.org/browse/survey/results?q=2523&r=23> (accessed July 2, 2013).

**Chapter 1** provides a context for subsequent sections of this report using demographic and socioeconomic information relevant to child health and well-being. It presents citywide and community-specific data on race and ethnicity, place of birth, language spoken at home, household income, parent or caregiver level of educational attainment, and parent or caregiver employment among Boston children. Each of these factors, separately and in interaction with each other, shapes everyday childhood experiences and thus has a major impact on child health.



## Demographic Profile of Boston's Children and Families

### Boston's Child Population

This section presents demographic information and trends for Boston children, drawing from U.S. Census data and the Boston Survey of Children's Health (BSCH). Citywide and neighborhood-specific information about where children live and changes in the child population over time is important for making informed decisions about resource allocation, and developing programs and policies that are effective in improving the lives of local children and families. Figures 1.1 and 1.2 present Census data on the distribution of children across the city of Boston, as well as changes in the Boston child population from 2000 to 2010.

Research shows that where children live impacts health. Neighborhood income, racial and ethnic diversity, and residential mobility are associated with school readiness and academic achievement, behavioral and emotional health, and sexual health outcomes among children and adolescents [1]. Access to resources, the presence (or absence) of different kinds of healthy relationships, social norms and the physical environment may all play roles in how neighborhood environments impact children and adolescents [1]. Additionally, resident perceptions of social and place-related characteristics have been correlated with measures of health and quality of life among urban adults [2]. For example, perceptions that one is economically "better off" compared to others in one's community have been associated with better self-reported health and quality of life, especially in lower-income communities [2]. Positive perceptions of neighborhood safety, neighborhood connectedness and neighborhood physical structures have been associated with better reported health and quality of life, especially in higher-income communities [2].

Many of Boston's neighborhoods are racially and ethnically segregated, which can perpetuate the effects of past discriminatory policies, and lead to disparities in access to health promoting environments and resources between racial and ethnic groups [3, 4]. Segregation of people of color into poor neighborhoods has been associated with poor birth outcomes, as well as increased infant and adult mortality [4]. Given the importance of where children live in shaping children's experiences and determining health, it is important to monitor the distribution of Boston's children citywide, as well as at the neighborhood level, to inform child health equity work. Figure 1.3 presents Census data on the Boston child population by neighborhood and race and ethnicity over time.

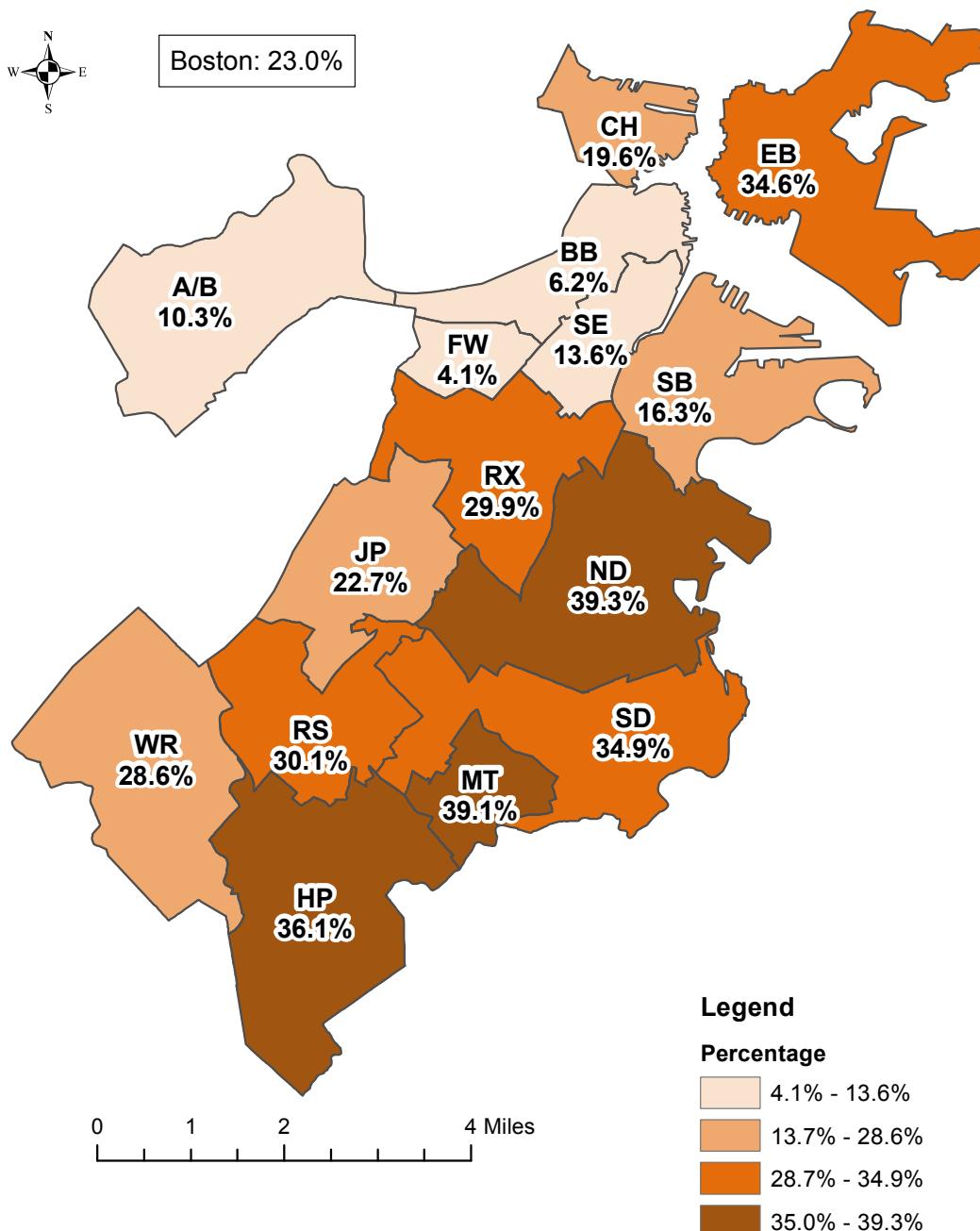
Figure 1.4 shifts from Census data to BSCH data on child place of birth overall and by race and ethnicity. In addition to where a child lives in the city of Boston, a child's country of birth is linked to health. Foreign-born children may be exposed to both protective and risk factors that influence health outcomes. Protective factors include family closeness and the existence of a cultural support system that can lead to increased well-being for foreign-born children compared to US-born children [5, 6], while risk factors include increased stress due to acculturation and family separation that can lead to heightened levels of anxiety, depression, and increased adolescent substance abuse [7, 8]. Pre-migration hardships and trauma a child experienced in his or her home country such as poverty, hunger, and political turmoil can also influence health after arrival in the United States, and has been linked to post-traumatic stress disorder and depression in foreign-born children and adolescents [9, 10]. Experiences of discrimination and racism among this population can also contribute to poor health of foreign-born children [11]. Finally, issues such as immigration policy and healthcare reform affect the health status of foreign-born children, as foreign-born children are less likely to be insured and have access to sufficient healthcare compared to US-born children [12]. Research shows that even insured foreign-born children have lower access to and utilization of health services such as regular visits with physicians, suggesting that cultural and legal barriers beyond insurance status exist in the health care system for foreign-born children and their families [13].

Regardless of whether or not a child is foreign-born, a family's primary language (the language that is spoken at home) can be another significant factor that affects child health. This is true particularly

if a primary parent or other caregiver is limited English proficient (LEP) [14, 15]. Language isolation can affect access to insurance and medical providers, parental knowledge of appropriate healthcare needs, such as how often a child needs to visit the dentist, and parent and caregiver ability to secure employment, which affects poverty in families [14]. Parents who have limited English proficiency may experience difficulty making medical appointments, navigating Boston's transit system to get to appointments, or communicating with medical providers once arrived [15]. Children in non-English-primary speaking households are more likely to be overweight, to have poor dental health, and lack insurance when compared to children in English-speaking households [14]. These inequities may reflect social disadvantages associated with language isolation including discrimination and increased likelihood of living in poverty [14]. In the BSCH, primary language spoken at home is a proxy measure for parental limited English proficiency, however many families who speak a language other than English at home may also be proficient in English. It is also important to note that BSCH interviews were only conducted in English and in Spanish, thus households where the parent(s) or caregiver(s) are LEP may be underrepresented. Figure 1.5 presents BSCH data on primary language spoken at home among households with children.

## Health of Boston's Children

**Figure 1.1 Percentage of Family Households with Children, Ages 0-17**



NOTES: A family household is a household consisting of a "householder" and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption. In most cases, the householder is a person in whose name the home is owned, being bought, or rented. In Boston, family households (with and without children) account for 46.0% of all households. For the percentages shown on this map, the numerator is all family households with children and the denominator is all households. The neighborhood definitions are based on census tracts.

DATA SOURCE: Census 2010, US Department of Commerce, Bureau of the Census, American FactFinder

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

MAP CREATED BY: Boston Public Health Commission Research and Evaluation Office

**Figure 1.1** presents the percentages of family households with children in different neighborhoods in Boston. In 2010, approximately one in four Boston households was a family household with at least one child under the age of 18. In North Dorchester, Mattapan, and Hyde Park, more than 35% of households were family households with at least one child. In Fenway, Back Bay, Allston/Brighton, and the South End, less than 15% of households were family households with at least one child.

| Neighborhood     | Figure 1.2 Child Population by Boston Neighborhood, Ages 0-17, 2000 and 2010 |                |               |
|------------------|--|----------------|---------------|
|                  | 2000   | 2010           | % change      |
| <b>BOSTON</b>    | <b>116,559</b>   | <b>103,710</b> | <b>-11.0%</b> |
| Allston/Brighton | 6,439  | 5,380          | -16.4%        |
| Back Bay*        | 2,512  | 2,642          | +5.2%         |
| Charlestown      | 2,824  | 2,685          | -4.9%         |
| East Boston      | 9,049  | 9,025          | -0.3%         |
| Fenway           | 1,725  | 1,720          | -0.3%         |
| Hyde Park        | 7,481  | 7,228          | -3.4%         |
| Jamaica Plain    | 6,569  | 5,512          | -16.1%        |
| Mattapan         | 8,192  | 6,268          | -23.5%        |
| North Dorchester | 18,023   | 15,346         | -14.9%        |
| Roslindale       | 8,053  | 6,595          | -18.1%        |
| Roxbury          | 9,644  | 8,547          | -11.4%        |
| South Boston     | 5,479  | 4,540          | -17.1%        |
| South Dorchester | 22,285   | 18,006         | -19.2%        |
| South End†       | 3,478  | 4,329          | +24.5%        |
| West Roxbury     | 4,317  | 5,030          | +16.5%        |

\*Includes Beacon Hill, Downtown, the North End, and the West End

†Includes Chinatown

NOTE: The neighborhood definitions are based on zip codes.

DATA SOURCES: Census 2000 and 2010, US Department of Commerce, Bureau of the Census, American Fact Finder

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 1.2** presents child population data for the city of Boston using 2000 and 2010 U.S. Census data. The overall Boston population of children decreased 11% between 2000 and 2010 from 116,559 to 103,710 for children under age 18. Although most Boston neighborhoods experienced a decrease, decreases were greatest for Mattapan, South Dorchester, Roslindale, and South Boston. Despite decreases in Mattapan, South Dorchester, and Roslindale, these neighborhoods still have higher percentages of family households with children than Boston overall. The child populations of three neighborhoods, South End, West Roxbury, and Back Bay, increased between 2000 and 2010.

## Health of Boston's Children

**Figure 1.3 Child Population by Boston Neighborhood and Race and Ethnicity, Ages 0-17, 2000 and 2010**

| Neighborhood           | 2000 and 2010    |                |            |            |             |             |             |             |             |             | Two or More Races |            |            |            |
|------------------------|------------------|----------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|------------|------------|------------|
|                        | Total Population |                | Asian      |            | Black       |             | Latino      |             | White       |             | Other Race*       |            |            |            |
|                        | 2000             | 2010           | 2000       | 2010       | 2000        | 2010        | 2000        | 2010        | 2000        | 2010        | 2000              | 2010       | 2000       | 2010       |
| Count                  | Count            | %              | %          | %          | %           | %           | %           | %           | %           | %           | %                 | %          | %          | %          |
| <b>BOSTON</b>          | <b>116,559</b>   | <b>103,710</b> | <b>6.7</b> | <b>6.9</b> | <b>37.2</b> | <b>33.2</b> | <b>23.9</b> | <b>30.1</b> | <b>25.4</b> | <b>23.1</b> | <b>2.6</b>        | <b>2.7</b> | <b>4.2</b> | <b>4.1</b> |
| Allston/<br>Brighton   | 6,439            | 5,380          | 19.3       | 17.9       | 10.2        | 9.3         | 21.1        | 25.1        | 42.2        | 39.6        | 2.3               | 3.3        | 5.0        | 4.8        |
| Back Bay <sup>†</sup>  | 2,512            | 2,642          | 17.8       | 12.4       | 14.8        | 6.6         | 8.0         | 7.9         | 56.3        | 66.9        | 0.3               | 1.1        | 2.8        | 5.2        |
| Charlestown            | 2,824            | 2,685          | 7.9        | 10.1       | 8.5         | 10.2        | 29.6        | 23.0        | 52.3        | 52.2        | 0.3               | 1.4        | 1.3        | 3.1        |
| East Boston            | 9,049            | 9,025          | 4.9        | 3.3        | 5.2         | 3.7         | 48.8        | 66.9        | 36.9        | 22.5        | 1.2               | 1.5        | 3.1        | 2.1        |
| Fenway                 | 1,725            | 1,720          | 18.0       | 14.7       | 25.1        | 20.5        | 28.2        | 31.9        | 22.0        | 27.2        | 1.3               | 0.5        | 5.4        | 5.3        |
| Hyde Park              | 7,481            | 7,228          | 1.7        | 1.6        | 43.3        | 48.8        | 19.3        | 29.5        | 30.5        | 15.0        | 1.0               | 1.5        | 4.3        | 3.6        |
| Jamaica<br>Plain       | 6,569            | 5,512          | 4.8        | 4.2        | 18.5        | 16.1        | 43.5        | 37.7        | 27.9        | 35.1        | 0.9               | 1.1        | 4.4        | 5.7        |
| Mattapan               | 8,192            | 6,268          | 0.8        | 0.6        | 83.0        | 76.7        | 8.9         | 17.3        | 2.1         | 1.5         | 1.0               | 0.9        | 4.2        | 3.0        |
| North<br>Dorchester    | 18,023           | 15,346         | 5.3        | 4.8        | 52.2        | 47.3        | 22.4        | 30.3        | 8.8         | 7.2         | 5.8               | 5.9        | 5.4        | 4.6        |
| Roslindale             | 8,053            | 6,595          | 3.1        | 2.4        | 23.9        | 24.9        | 29.3        | 36.4        | 38.1        | 30.2        | 1.0               | 1.4        | 4.5        | 4.7        |
| Roxbury                | 9,644            | 8,547          | 1.8        | 1.9        | 54.8        | 46.3        | 32.1        | 41.1        | 2.9         | 3.5         | 4.3               | 4.0        | 4.0        | 3.2        |
| South<br>Boston        | 5,479            | 4,540          | 5.9        | 7.0        | 5.7         | 12.6        | 18.0        | 26.1        | 67.6        | 50.3        | 0.7               | 1.1        | 2.0        | 3.0        |
| South<br>Dorchester    | 22,285           | 18,006         | 7.9        | 10.1       | 53.1        | 48.4        | 15.9        | 19.9        | 14.4        | 13.0        | 3.8               | 4.0        | 4.9        | 4.6        |
| South End <sup>‡</sup> | 3,478            | 4,329          | 22.6       | 21.0       | 29.8        | 25.0        | 34.8        | 29.5        | 9.3         | 19.5        | 0.7               | 0.8        | 2.8        | 4.3        |
| West<br>Roxbury        | 4,317            | 5,030          | 5.8        | 8.2        | 2.6         | 5.5         | 5.3         | 9.6         | 83.1        | 71.9        | 0.5               | 0.6        | 2.6        | 4.2        |

\*Includes American Indians/Alaskan Natives

<sup>†</sup> Includes Beacon Hill, Downtown, the North End, and the West End

<sup>‡</sup> Includes Chinatown

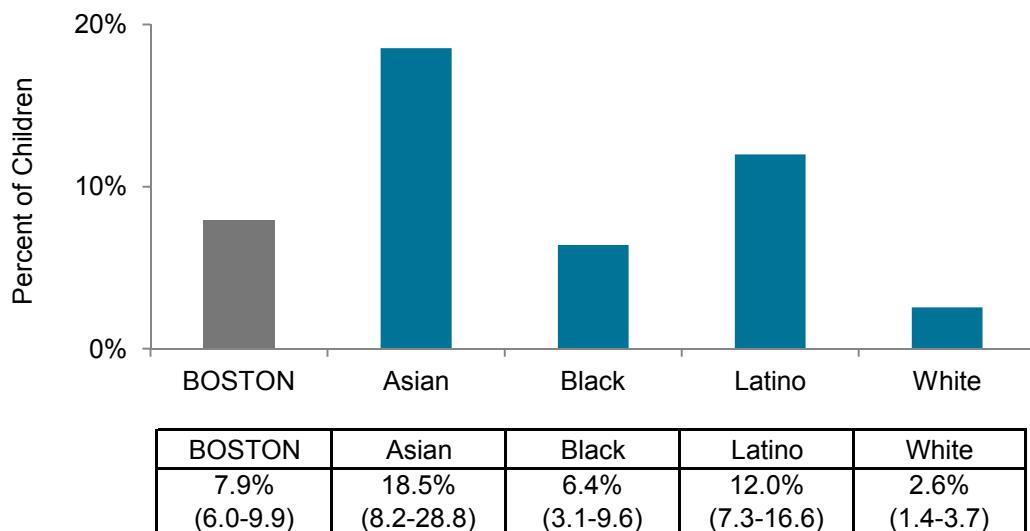
NOTE: The neighborhood definitions are based on zip codes.

DATA SOURCES: Census 2000 and 2010, US Department of Commerce, Bureau of the Census, American Fact Finder

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 1.3** presents 2000 and 2010 U.S. Census data on the Boston child population by neighborhood and race and ethnicity. As the overall child population of Boston fell between 2000 and 2010, the make-up of that population was shifting. In 2000, Black children comprised 37.2% and White children 25.4% of the city's under 18 population. While Black children were still the largest of the city's child population groups in 2010, their numbers declined while the number of Latino children increased sharply, making Latinos the second largest population group of children. The percentage of children who were White declined slightly in this period and the percentage of Asian children was stable.

**Figure 1.4 Foreign-Born Children by Race and Ethnicity, Ages 0-17**



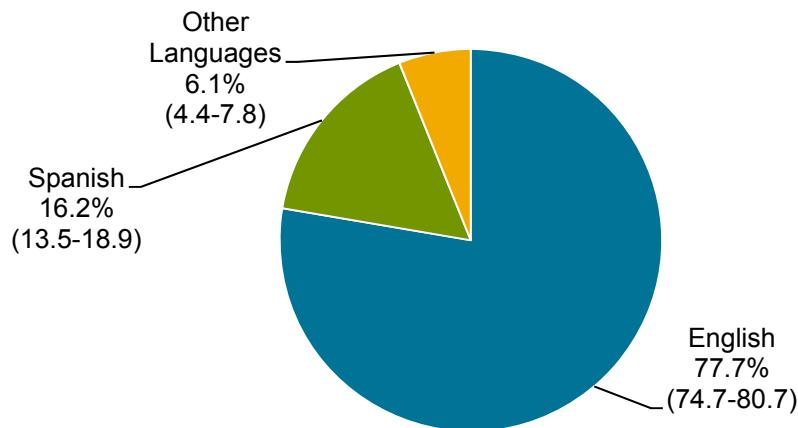
NOTES: Data for multiracial/other race are not shown. The percentage of foreign-born children for each racial or ethnic group is out of the total number of Boston children within each racial or ethnic group.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 1.4** presents Boston foreign-born children by racial and ethnic group according to BSCH data. The majority of children living in Boston were born in the United States (92.1%). Higher percentages of Asian and Latino children were born outside the United States than White children.

**Figure 1.5 Primary Language Spoken at Home Among Households with Children, Ages 0-17**



NOTE: Of primary languages spoken at home other than English and Spanish, the most common were French, Vietnamese, Chinese, and Russian.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

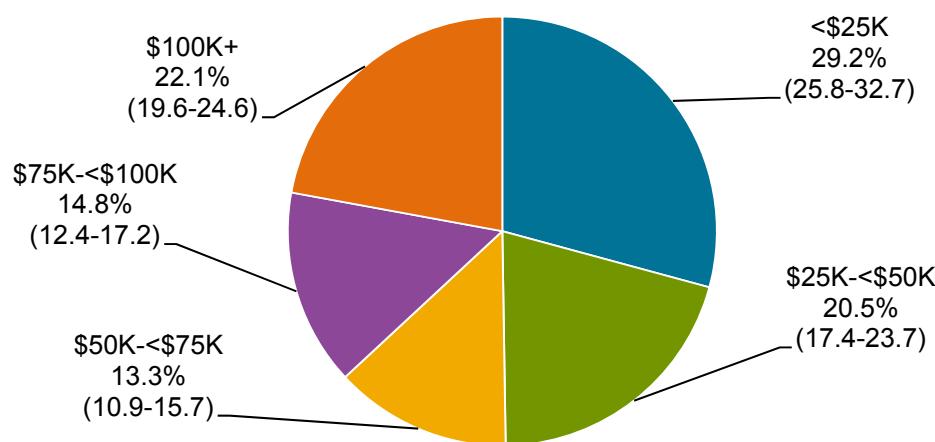
**Figure 1.5** presents BSCH data on the primary language spoken at home among households with children. English was the primary language most widely spoken in Boston children's homes (77.7%), followed by Spanish (16.2%). As mentioned previously, one limitation of the BSCH is that interviews were only conducted in English and in Spanish, therefore households where the parent(s) or other caregiver(s) are limited English proficient and speak languages other than Spanish may be underrepresented.

### Household Income and Poverty

This section presents information about household income and poverty among Boston families with children. Household income is one of the strongest predictors of children's health and developmental outcomes, largely because it determines a child's access to health promoting resources such as high quality housing, health care, and education, and exposure to conditions that can negatively impact health [16, 17]. Children's overall health, as reported by parents in the 2011 National Health Interview Survey, was closely associated with income, with children from very poor families experiencing the worst health and children from very wealthy families experiencing the best [18]. Health inequities do not only exist between children of the poorest and wealthiest families. Research shows that a social gradient exists for children's health similar to that observed in adults, whereby any increase in socioeconomic status is associated with improved health [19]. Figures 1.6 through 1.9 present data on household income and household poverty level among Boston children and families.

Figure 1.9 presents income data stratified by race and ethnicity and shows significant differences in the distribution of income in Boston. As mentioned, research shows that income alone significantly impacts child health [16, 17]. Additionally, the intersection of race and income influence health and health inequities, as income is consistently patterned by race and ethnicity in the United States [20]. In general, more children of color are poor compared to White children, thus more children of color are subject to the health risks associated with low-income and poverty [20]. However, it is important to note that race can also work independently from income to influence health. Social experiences associated with being a person of color, such as racism and discrimination, as well as cultural and linguistic barriers to accessing health care and other resources, can significantly influence health [20]. The influence of these other factors is evidenced by studies that show the persistence of racial health inequities even when controlling for income [21,22]. While the information in this chapter does not delve into social experiences such as racism and marginalization that influence these kinds of findings, it does present a snap shot of the demographic and socioeconomic distribution of Boston children and families.

**Figure 1.6 Annual Household Income Distribution Among Families with Children, Ages 0-17**

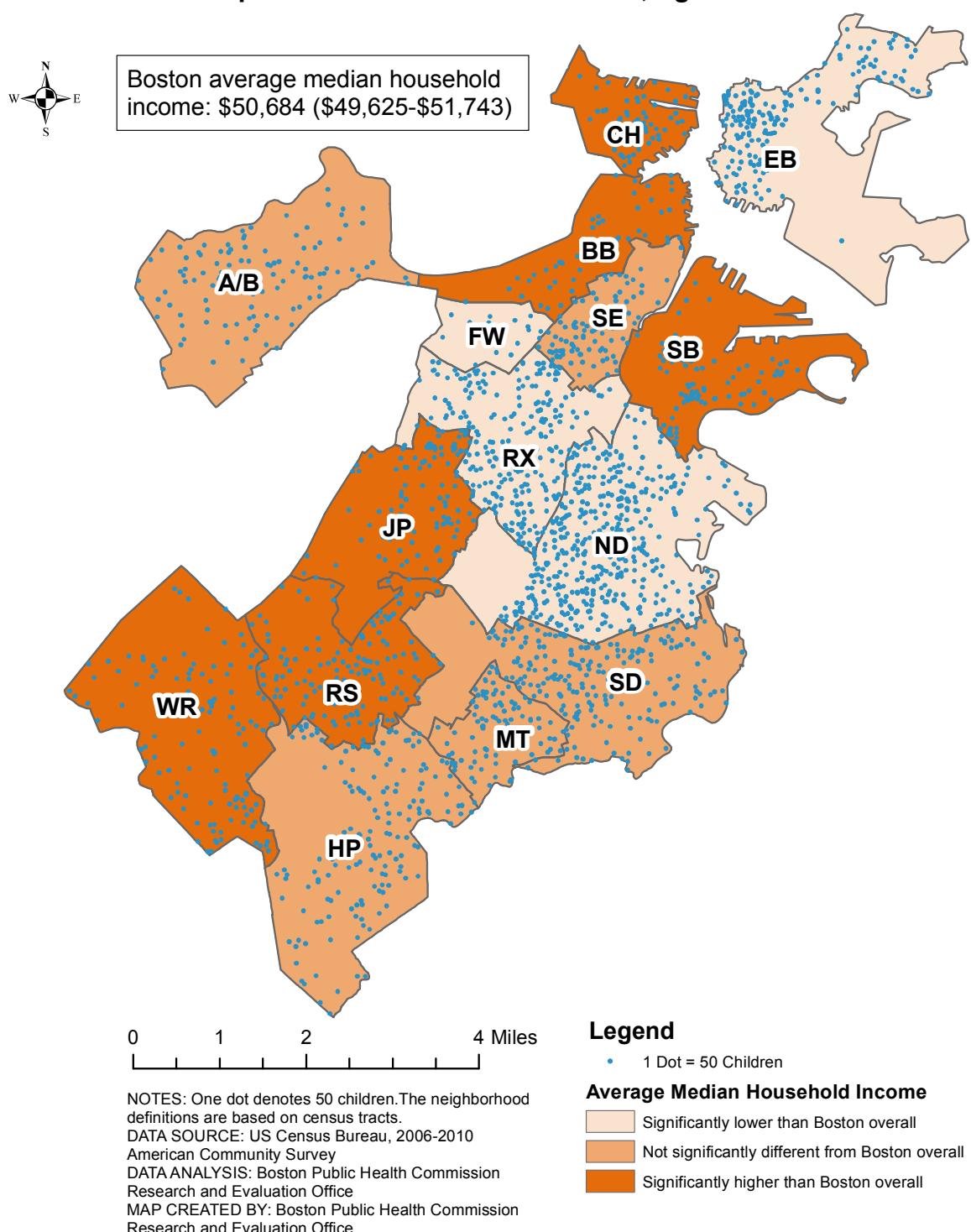


DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 1.6** presents the annual household income distribution of Boston families with children. More children lived with families that made less than \$25,000 than in any other income group. The next highest income groups were \$100,000+ and \$25,000 – <\$50,000.

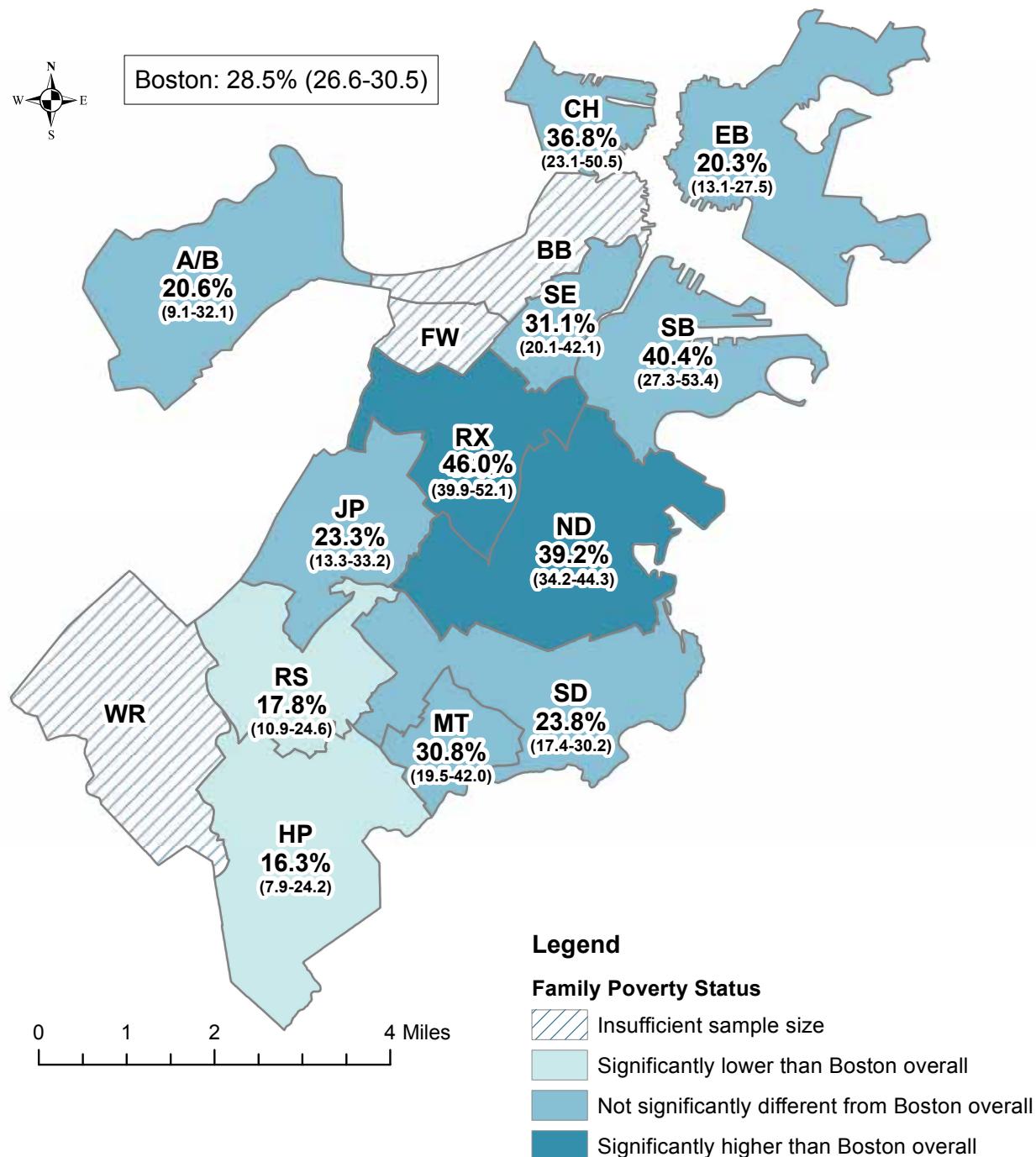
**Figure 1.7 Average Median Household Income by Neighborhood and Population Distribution of Children, Ages 0-17**



**Figure 1.7** presents information on the average median household income by neighborhood on top of a map which shows the population distribution of children across Boston neighborhoods. During the 2006-2010 period, the average median household income for Boston was \$50,684. Jamaica Plain, Charlestown, West Roxbury, Back Bay, Roslindale, and South Boston had higher average median household incomes than Boston overall. Fenway, Roxbury, North Dorchester, and East Boston had lower average median household incomes than Boston overall. This map also shows the density of children ages 0-17 based on child population at the census tract level.

## Health of Boston's Children

**Figure 1.8 Percentage of Families with Children Living in Poverty,  
Children Ages 0-17**



NOTES: The neighborhood definitions are based on census tracts. The denominator is all families.

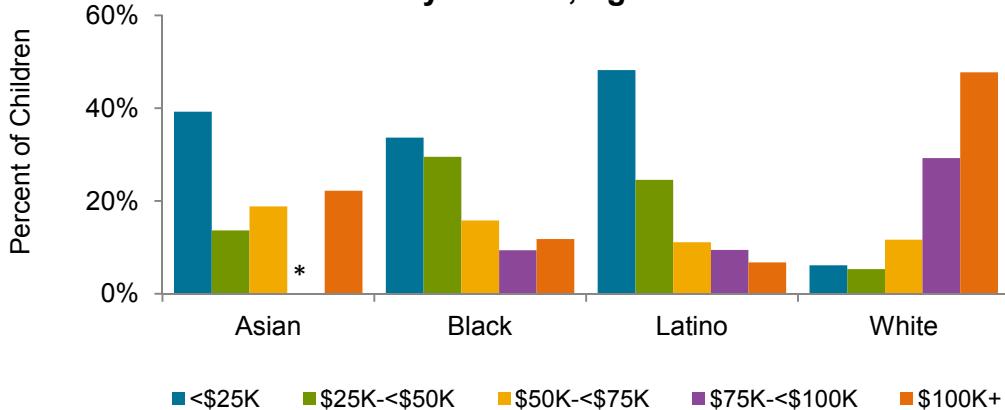
DATA SOURCE: US Census Bureau, 2006-2010 American Community Survey

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

MAP CREATED BY: Boston Public Health Commission Research and Evaluation Office

**Figure 1.8** presents a map of the percentages of families with children living in poverty across Boston neighborhoods. During the 2006-2010 period, nearly 30% of families with children ages 0-17 were living in poverty in Boston. Higher percentages of families with children were living in poverty in Roxbury and North Dorchester, than Boston. A lower percentage of families with children were living in poverty in Hyde Park and Roslindale than in Boston.

**Figure 1.9 Annual Household Income by Race and Ethnicity of Child, Ages 0-17**



|               | Asian                | Black                | Latino               | White                |
|---------------|----------------------|----------------------|----------------------|----------------------|
| <\$25K        | 39.2%<br>(18.5-59.9) | 33.6%<br>(27.1-40.1) | 48.2%<br>(40.8-55.6) | 6.1%<br>(3.1-9.1)    |
| \$25K-<\$50K  | 13.6%<br>(3.5-23.8)  | 29.5%<br>(23.0-36.0) | 24.6%<br>(18.1-31.1) | 5.3%<br>(3.7-7.0)    |
| \$50K-<\$75K  | 18.8%<br>(0.0-37.7)  | 15.7%<br>(11.0-20.5) | 11.1%<br>(6.8-15.3)  | 11.6%<br>(8.1-15.2)  |
| \$75K-<\$100K | *                    | 9.4%<br>(6.0-12.8)   | 9.5%<br>(5.2-13.7)   | 29.2%<br>(24.1-34.3) |
| \$100K+       | 22.2%<br>(9.6-34.8)  | 11.7%<br>(8.0-15.5)  | 6.7%<br>(3.8-9.6)    | 47.7%<br>(42.4-53.0) |

\*Insufficient sample size

NOTE: Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

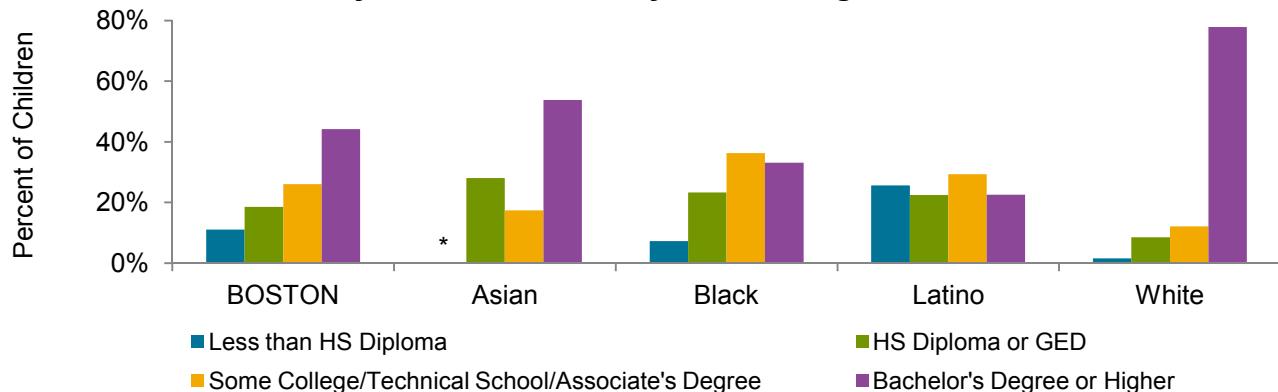
**Figure 1.9** presents annual household income for Boston families with children by racial and ethnic group. Higher percentages of Black and Latino children than White children lived with families whose household income was less than \$50,000. Lower percentages of Black and Latino children than White children lived with families whose household income was \$75,000 or more. The percentages for Black and Latino children were similar to that of White children from families whose household income was \$50,000 to less than \$75,000. A higher percentage of Asian children than White children lived with families whose household income was less than \$25,000, while a lower percentage of Asian children than White children lived with families whose household income was \$100,000 or more. The percentage for Asian children was similar to that of White children of families whose household income was \$50,000 to less than \$75,000.

## **Parent and Caregiver Education and Employment**

Parental level of educational attainment and employment status are both significant predictors of child health, with children of more highly educated and employed parents having better overall health than children with less educated parents [18]. Research suggests that higher education leads to increased economic and job opportunities for parents, which is then associated with the same advantages for child health as family income [23]. The same can be said for parental employment status, in that employed parents are more likely to have the economic ability to provide their children with environments and resources that promote healthy development. Studies have also shown however, that child health can affect parental employment, in that parents and other caregivers of children with special health care needs often experience reduced or even discontinued employment [24]. For both parent or caregiver level of educational attainment and employment status, we observe many of the same disparities that we see in relation to household income based on race and ethnicity. Figures 1.10 and 1.11 present data that illuminate these disparities.

## Parent and Caregiver Education and Employment

**Figure 1.10 Highest Level of Parent/Caregiver Educational Attainment by Race and Ethnicity of Child, Ages 0-17**



|  | BOSTON               | Asian                | Black                | Latino               | White                |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|
| Less than HS Diploma                             | 11.1%<br>(8.8-13.3)  | *                    | 7.2%<br>(3.9-10.6)   | 25.7%<br>(19.7-31.6) | 1.6%<br>(0.5-2.7)    |
| HS Diploma or GED                                | 18.6%<br>(15.9-21.4) | 28.1%<br>(9.0-47.2)  | 23.4%<br>(17.8-28.9) | 22.4%<br>(16.8-28.0) | 8.5%<br>(5.4-11.6)   |
| Some College/Technical School/Associate's Degree | 26.1%<br>(23.0-29.2) | 17.4%<br>(4.0-30.9)  | 36.3%<br>(30.1-42.5) | 29.4%<br>(22.9-35.8) | 12.1%<br>(9.0-15.2)  |
| Bachelor's Degree or Higher                      | 44.2%<br>(40.9-47.4) | 53.8%<br>(34.9-72.8) | 33.1%<br>(27.4-38.8) | 22.6%<br>(17.2-27.9) | 77.8%<br>(73.6-82.1) |

\*Insufficient sample size

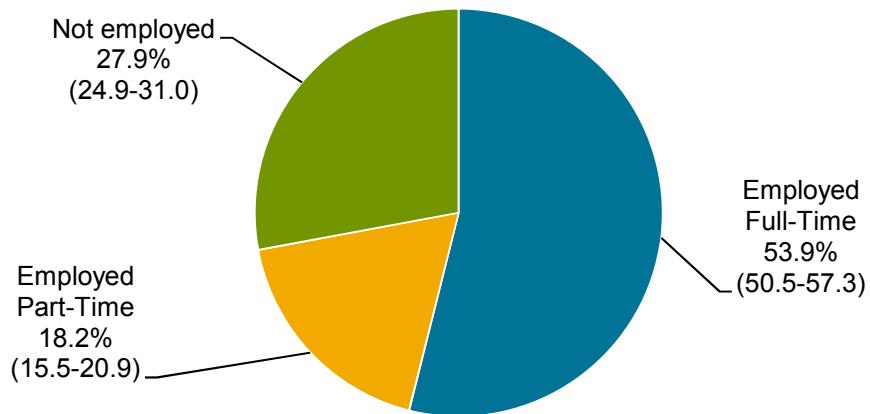
NOTES: Educational attainment refers to the highest level between mother, father, and/or respondent if not the mother or the father. Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 1.10** presents information about the highest level of parent or caregiver educational attainment for Boston children by race and ethnicity. Approximately forty-four percent of Boston children live in families where the highest level of education of a parent or caregiver is at least a bachelor's degree. A higher percentage of White children live in families where the highest level of education of a parent or caregiver is at least a bachelor's degree than Asian, Black, or Latino children.

**Figure 1.11 Employment Status of Parent/Caregiver,  
Children Ages 0-17**



DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 1.11** presents employment status information for parents and caregivers of Boston children. Slightly more than half (53.9%) of parents or caregivers reported that they were employed full time, while 18.2% were employed part time, and 27.9% were not employed. A higher percentage of Boston children had a parent or other caregiver who was employed full time than Boston children with a parent or caregiver who was employed part time or not employed at all.

## **Summary:**

### **Demographic Profile of Boston Children and Families**

The demographics of Boston's children have shifted over time in terms of racial and ethnic make-up as well as the distribution of households with children across the city. Despite recent decreases in neighborhoods with historically high child populations and increases in neighborhoods with low child populations, certain neighborhoods, including North Dorchester, Hyde Park and Mattapan consistently have the highest percentages of children in Boston. Black and Latino children make up the highest percentages of Boston children. Data presented in this chapter show that higher percentages of White children in Boston lived in households with higher incomes and families in which the highest level of education of a parent or caregiver was a bachelor's degree or higher than Asian, Black and Latino children. A lower percentage of White children lived in poverty than Asian, Black and Latino children, and a lower percentage of White children were born outside of the United States. These differences in demographic and socioeconomic factors influence child health and health equity.

## Health of Boston's Children

### References:

1. Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: the effects of neighborhood residence on child and adolescent outcomes. *Psychological bulletin*, 126(2), 309.
2. Muhajarine, N., Labonte, R., Williams, A., & Randall, J. (2008). Person, perception, and place: what matters to health and quality of life. *Social Indicators Research*, 85(1), 53-80.
3. White, K., Haas, J. S., & Williams, D. R. (2012). Elucidating the role of place in health care disparities: the example of racial/ethnic residential segregation. *Health services research*, 47(3pt2), 1278-1299.
4. Kramer, M. R., & Hogue, C. R. (2009). Is segregation bad for your health? *Epidemiologic reviews*, 31(1), 178-194.
5. Capps, R., Fix, M., Ost, J, Reardon-Anderson, J & Passel, J. (2005). The health and well-being of young children of immigrants. *A Publication of Urban Institute*.
6. Dillon, F. R., De La Rosa, M., Sastre, F., & Ibañez, G. (2012). Alcohol Misuse Among Recent Latino Immigrants: The Protective Role of Preimmigration Familismo. *Psychology of Addictive Behaviors*.
7. Revollo, H. W., Qureshi, A., Collazos, F., Valero, S., & Casas, M. (2011). Acculturative stress as a risk factor of depression and anxiety in the Latin American immigrant population. *International Review of Psychiatry*, 23(1), 84-92.
8. Suárez-Orozco, C., Bang, H. J., & Kim, H. Y. (2011). I felt like my heart was staying behind: Psychological implications of family separations & reunifications for immigrant youth. *Journal of Adolescent Research*, 26(2), 222-257.
9. Ko, L. K., & Perreira, K. M. (2010). "It Turned My World Upside Down": Latino Youths' Perspectives on Immigration. *Journal of adolescent research*, 25(3), 465-493.
10. Perreira, K. M., & Ornelas, I. J. (2011). The physical and psychological well-being of immigrant children. *The Future of Children*, 21(1), 195-218.
11. George, M. A., Bassani, C., & Armstrong, R. W. (2012). Influence of Perceived Racial Discrimination on Health and Behaviour of Immigrant Children in British Columbia. *International Journal of Population Research*, 2012.
12. Ferayorni, A., Sinha, M., & McDonald, F. W. (2011). Health issues among foreign born uninsured children visiting an inner city pediatric emergency department. *Journal of Immigrant and Minority Health*, 13(3), 434-444.
13. Guendelman, S., Schauffler, H. H., & Pearl, M. (2001). Unfriendly shores: how immigrant children fare in the US health system. *Health Affairs*, 20(1), 257-266.
14. Flores G & Tomany-Korman SC (2008). The language spoken at home and disparities in medical and dental health, access to care and use of services in US children. *Pediatrics*, 121:1703-1741.
15. Flores G, Abreu M & Tomany-Korman SC (2005). Limited English Proficiency, Primary Language at Home, and Disparities in Children's Health Care: How Language Barriers are Measured Matters. *Public Health Reports*, 120:418-430.
16. Redd, Z., et al. (2011). *Two generations in poverty: Status and trends among parents and children in the United States, 2000-2010 (Child Trends Research Brief No. 2011-25)*.
17. National Center for Children in Poverty (2009). *10 Important Questions about Child Poverty and Family Economic Hardship*. Accessed July 2, 2013 from: [http://www.nccp.org/publications/pdf/text\\_829.pdf](http://www.nccp.org/publications/pdf/text_829.pdf).
18. Bloom B, Cohen RA, Freeman G. (2012). Summary health statistics for U.S. children: National Health Interview Survey, 2011. National Center for Health Statistics. *Vital Health Stat* 10(254).
19. Starfield, B., Robertson, J., & Riley, A. W. (2002). Social class gradients and health in childhood. *Ambulatory Pediatrics*, 2(4), 238-246.

20. Williams, D. R., Mohammed, S. A., Leavell, J., & Collins, C. (2010). Race, socioeconomic status, and health: complexities, ongoing challenges, and research opportunities. *Annals of the New York Academy of Sciences*, 1186(1), 69-101.
21. Franks, P., P. Muennig, E. Lubetkin & H. Jia. 2006. The burden of disease associated with being African-American in the United States and the contribution of socioeconomic status. *Soc. Sci. Med.* 62: 2469–2478.
22. Farmer, M.M. & K.F. Ferraro. 2005. Are racial disparities in health conditional on socioeconomic status? *Soc. Sci. Med.* 60: 191–204.
23. Lindeboom, M., Llena-Nozal, A., & van Der Klaauw, B. (2009). Parental education and child health: Evidence from a schooling reform. *Journal of Health Economics*, 28(1), 109-131.

## **Health of Boston's Children**

**Chapter 2** presents data on the health status of Boston children and their use of health services. The content of Chapter 2 is organized around the elements of the “Triple Aim,” developed by the Institute for Healthcare Improvement (IHI) to guide health system improvement efforts: improving the health of populations; reducing the cost of health care; and improving the patient experience of care [1]. Included in this chapter are data on general child health and the prevalence of specific health conditions; health care utilization; health insurance coverage and out-of-pocket health care costs; barriers to health care for children and families; and provider/family relationships. These sections align with the “Triple Aim” elements concerning population health, health care costs, and quality of care respectively. The data included in this chapter touch upon each component of the “Triple Aim” and may serve as a basis for health care policy and practice that promotes child health in Boston.



## Health and Health Services

### **General Health Status among Boston Children**

This section provides an overview of child health in Boston, including a parent or caregiver assessment of child health in general, child weight status as defined by Body Mass Index (BMI), and general dental health among children. While these indicators of child health are all derived from parent or caregiver report rather than professional or objective health assessment, parent report has been shown to be a reliable indicator of child health status, and is widely used for that purpose [2].

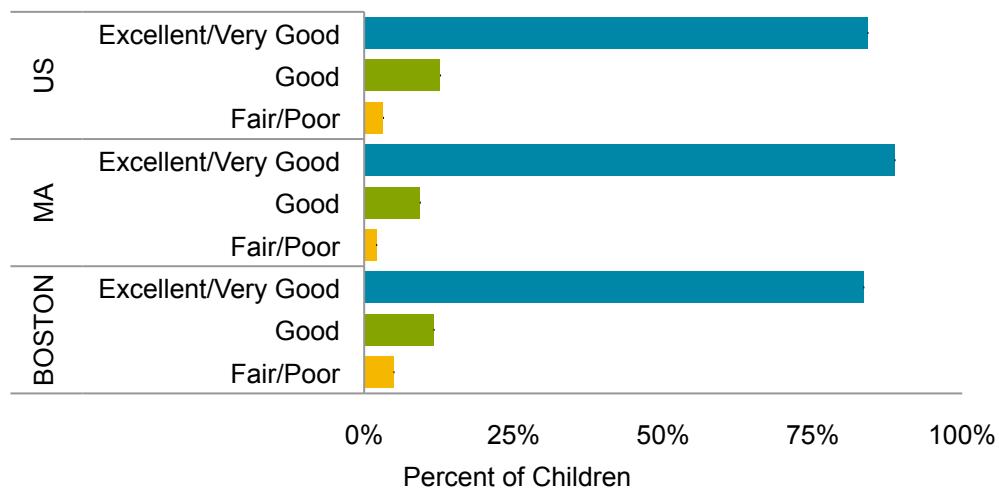
The survey question on general child health gave parents and caregivers the opportunity to provide a global view of the child's health irrespective of any conditions with which the child had been diagnosed. General health status may or may not reflect a specific diagnosis or special health care need [2]. For example, a parent of a child with autism may respond that his or her child is in good health or the parent of a child with no known diagnosis may report that his or her child is in poor health due to frequent episodes of symptoms without any specific cause. This is not to say that general health is completely unrelated to presence of a condition: in fact, parent and caregiver report of general health status has been associated with physical, cognitive, behavioral, and emotional conditions [3, 4, 5, 6]. However, the link between general health and diagnosis is not automatic. Figures 2.1 and 2.2 present data on general child health.

BMI is calculated based on a child's height and weight. Using age and sex-specific norms, clinicians use BMI to determine weight status and to characterize a child's status as underweight, normal weight, overweight or obese [7]. The physical health consequences of childhood overweight and obesity include increased risk among youth for conditions traditionally seen only among adults, such as cardiovascular disease, hypertension, and type 2 diabetes [8]. Studies focused on health-related quality of life have shown that overweight and obese children also experience decreased physical and social functioning, decreased emotional health, and in some cases, poorer performance in school when compared to children who are not overweight [3]. Figures 2.3 and 2.4 present data on child weight status, calculated from BMI.

Components of general oral health status are presence or absence of: dental cavities, periodontal (gum) disease, cleft lip and/or palate, and oral and facial pain [9]. Poor overall oral health can negatively impact nutrition, pulmonary health, speech and communication development, and social/emotional health [10]. Despite the importance of oral health to overall child health, over half of children in the United States have unmet dental health needs [10]. Figures 2.5 and 2.6 present data on child oral health.

## General Health Status among Boston Children

**Figure 2.1 Child General Health, Ages 0-17**



|               | Excellent/Very Good  | Good                 | Fair/Poor         |
|---------------|----------------------|----------------------|-------------------|
| United States | 84.2%<br>(83.6-84.7) | 12.7%<br>(12.2-13.2) | 3.2%<br>(2.9-3.4) |
| Massachusetts | 88.7%<br>(86.6-90.8) | 9.3%<br>(7.3-11.3)   | 2.0%<br>(1.1-2.9) |
| BOSTON        | 83.5%<br>(80.9-86.1) | 11.6%<br>(9.4-13.8)  | 4.9%<br>(3.3-6.5) |

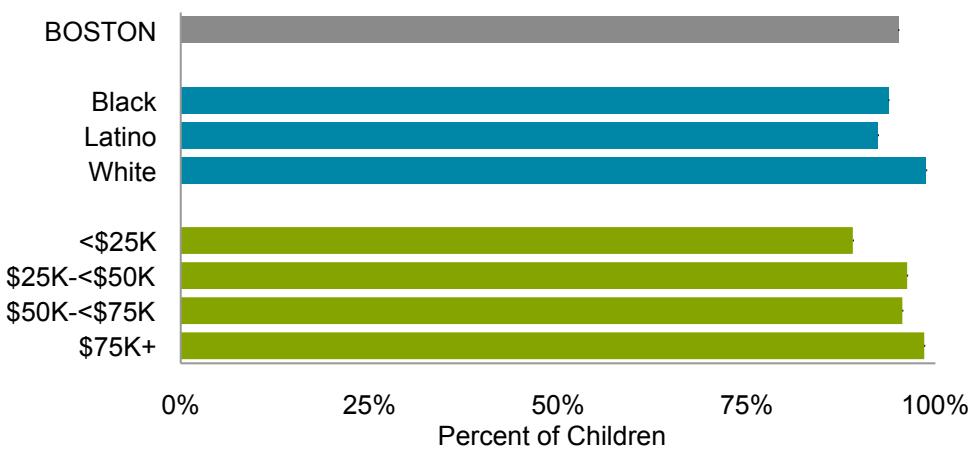
DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.1** presents data on child general health comparing BSCH data with Massachusetts and United States data from the National Survey of Children's Health. In Boston, approximately eighty-four percent of children were in excellent or very good general health, while 11.6% were in good health and 4.9% in fair or poor health. A lower percentage of Boston children were in excellent or very good general health than children living in Massachusetts, while a higher percentage of Boston children than children living in Massachusetts were in fair or poor general health. There were no differences between Boston and the United States in terms of child general health.

## Health of Boston's Children

**Figure 2.2 Children with Good or Better General Health, Ages 0-17**



NOTES: General health for children is indicated as "good or better" where respondents reported general health status to be "excellent", "very good", or "good." Data for Asian children are not presented due to insufficient sample size. Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.2** presents data on percentages of children in good or better health by racial and ethnic group and by annual household income. Approximately ninety-five percent of Boston children were in good or better health, however a lower percentage of Latino children were in good or better health than White children, and a lower percentage of children whose family annual household income was less than \$25,000 were in good or better health than those whose family annual household income was \$75,000 or more.

Differences were also observed by parent or caregiver educational attainment. A higher percentage of children whose parents or caregivers had a bachelor's degree or higher were in good or better health than children whose parents or caregivers had a high school diploma or GED (data not shown).

## General Health Status among Boston Children

**Figure 2.3 Child Weight Status Based on Body Mass Index (BMI), Ages 11-17**



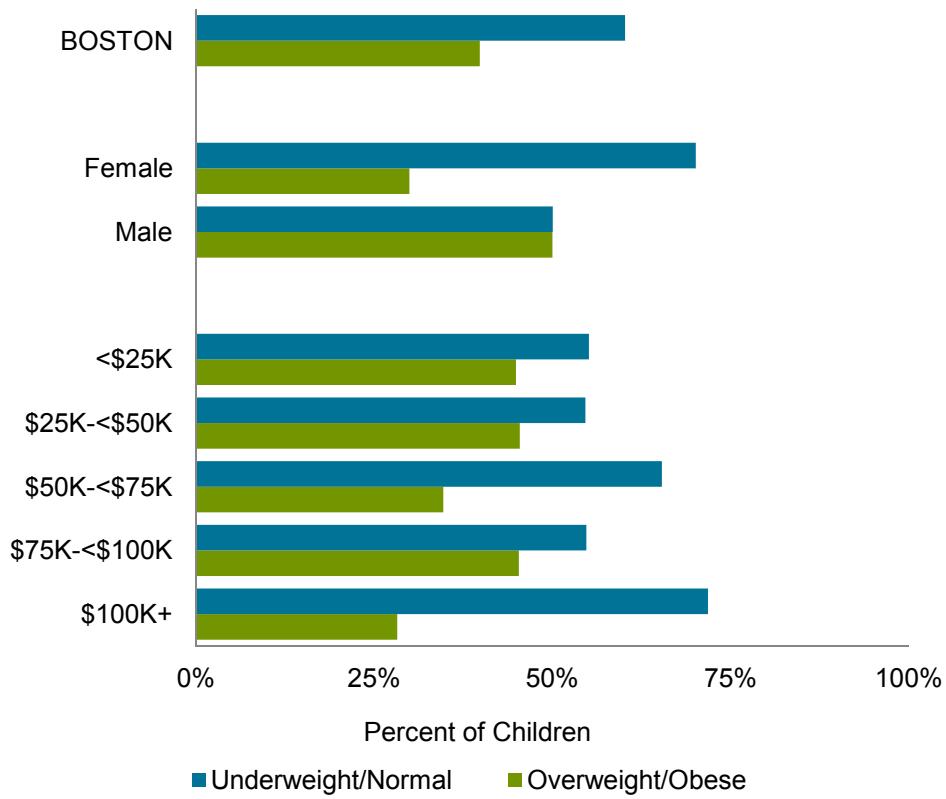
NOTE: Weight categories were calculated using parent/caregiver-reported height and weight of the child.  
DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.3** presents data on child weight status based on BMI comparing BSCH data with Massachusetts and United States data from the National Survey of Children's Health. Approximately forty percent of Boston children ages 11-17 years were overweight or obese, which was higher than the percentage of children in Massachusetts and the United States.

## Health of Boston's Children

**Figure 2.4 Child Weight Status Based on Body Mass Index (BMI), Ages 11-17**



|                         | Underweight/Normal | Overweight/Obese  |
|-------------------------|--------------------|-------------------|
| BOSTON                  | 60.2% (54.4-65.9)  | 39.8% (34.1-45.6) |
| Gender                  |                    |                   |
| Female                  | 70.1% (62.2-78.0)  | 29.9% (22.0-37.8) |
| Male                    | 50.0% (42.4-57.7)  | 50.0% (42.3-57.6) |
| Annual Household Income |                    |                   |
| <\$25K                  | 55.1% (43.2-67.0)  | 44.9% (33.0-56.8) |
| \$25K-\$50K             | 54.6% (40.2-69.0)  | 45.4% (31.0-59.8) |
| \$50K-\$75K             | 65.3% (50.6-80.0)  | 34.7% (20.0-49.4) |
| \$75K-\$100K            | 54.7% (37.4-72.1)  | 45.3% (27.9-62.6) |
| \$100K+                 | 71.8% (62.3-81.3)  | 28.2% (18.7-37.7) |

NOTE: Weight categories were calculated using parent/caregiver-reported height and weight of the child.

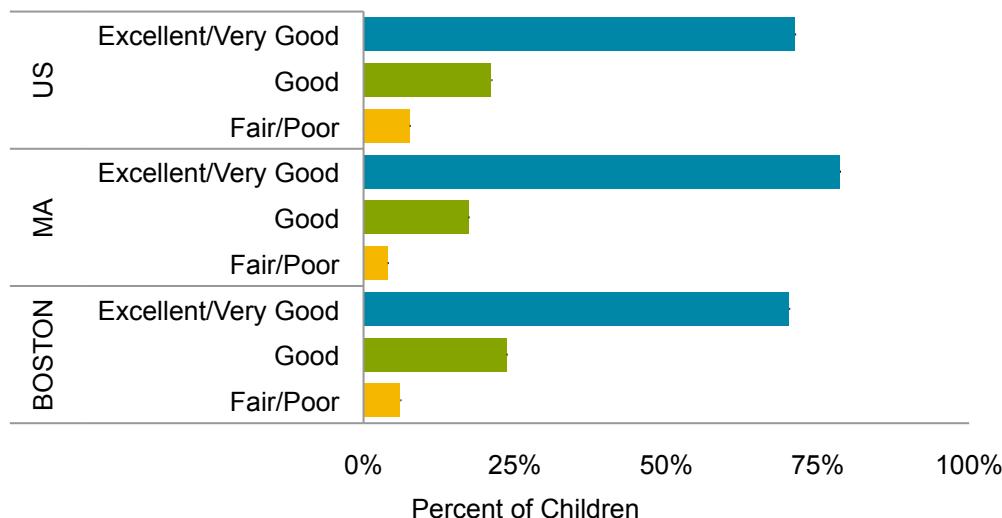
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.4** presents data on child weight status based on BMI by gender and annual household income. Among children ages 11-17 years, about three out of every five Boston children were underweight or normal weight, while two out of five Boston children were overweight or obese. A higher percentage of male children were overweight or obese than female children. There was no difference in child weight status by annual household income, however small sample size may explain the absence of differences across groups in Boston, as larger, national studies, including the National Survey of Children's Health, have found significant differences in weight status by income.

## General Health Status among Boston Children

**Figure 2.5 Child Dental Health, Ages 1-17**



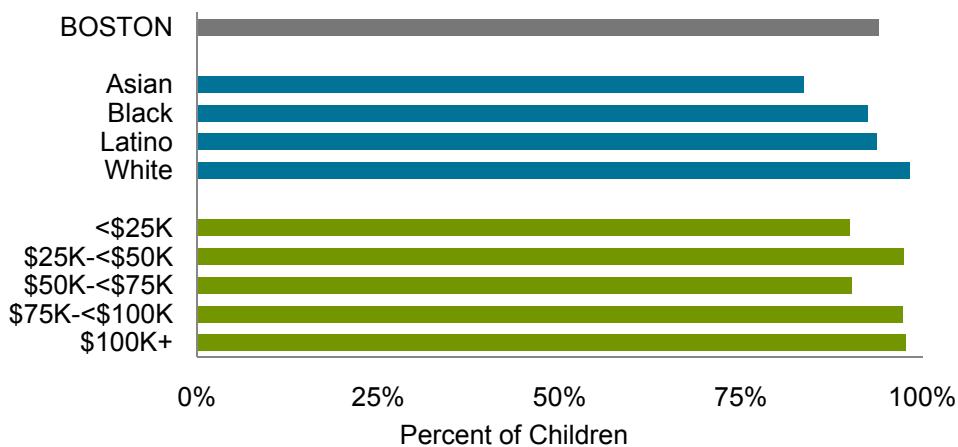
|               | Excellent/Very Good  | Good                 | Fair/Poor         |
|---------------|----------------------|----------------------|-------------------|
| United States | 71.3%<br>(70.6-72.0) | 21.1%<br>(20.5-21.8) | 7.6%<br>(7.2-8.1) |
| Massachusetts | 78.7%<br>(75.9-81.4) | 17.3%<br>(14.8-19.9) | 4.0%<br>(2.8-5.2) |
| BOSTON        | 70.3%<br>(67.0-73.5) | 23.6%<br>(20.5-26.7) | 6.1%<br>(4.4-7.7) |

DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012  
 DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.5** presents data on child dental health, comparing BSCH data with state and national data from the National Survey of Children's Health. In Boston, approximately seventy percent of children had excellent or very good dental health, while 23.6% had good dental health, and 6.1% had fair or poor dental health. A lower percentage of Boston children had excellent or very good dental health than children living in Massachusetts, while a higher percentage of Boston children had dental health characterized as good. Boston did not differ from the United States in terms of parent or caregiver report of child dental health.

## Health of Boston's Children

**Figure 2.6 Children with Good or Better Dental Health, Ages 1-17**



|                         |                    |
|-------------------------|--------------------|
| BOSTON                  | 93.9% (92.3-95.6)  |
| Race/Ethnicity of Child |                    |
| Asian                   | 83.7% (64.5-100.0) |
| Black                   | 92.5% (89.2-95.7)  |
| Latino                  | 93.6% (90.9-96.4)  |
| White                   | 98.3% (97.1-99.5)  |
| Annual Household Income |                    |
| <\$25K                  | 90.0% (85.9-94.0)  |
| \$25K-<\$50K            | 97.4% (96.0-98.9)  |
| \$50K-<\$75K            | 90.3% (83.9-96.6)  |
| \$75K-<\$100K           | 97.3% (94.7-99.8)  |
| \$100K+                 | 97.7% (95.0-100.0) |

NOTES: Dental health for children is indicated as "good or better" where respondents reported dental health status to be "excellent", "very good", or "good." Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.6** presents data on child dental health by racial and ethnic group and by annual household income. Approximately ninety-four percent of Boston children were in good or better dental health. Lower percentages of Black and Latino children were in good or better dental health, however, than White children. A lower percentage of children whose family's annual household income was less than \$25,000 were also in good or better dental health than those whose family's annual household income ranged from \$25,000 to less than \$50,000, and for income brackets of \$75,000 to less than \$100,000 and above.

A higher percentage of children were in good or better dental health whose parents or caregivers had a bachelor's degree or higher than children whose parents or caregivers had a high school diploma or GED, or less (data not shown). Additionally, a lower percentage of children that were in good or better dental health were from households with income below the federal poverty level (FPL) than children from households that were 400% FPL or above (data not shown).

## Specific Health Conditions

This section provides data on specific health conditions among Boston children. Chronic physical, emotional, and behavioral conditions can influence a child's total development and general childhood experience.

In addition to the direct effects a condition may have and the more frequent interactions with systems of care it may entail, many conditions can limit a child's engagement and performance at school, ability to participate in physical activity, social functioning, self-esteem, and emotional health. In some cases, treatments for a condition (such as surgeries, use of medications, or receipt of different kinds of therapies) may also affect a child's functioning in any of these domains [11, 4]. Figure 2.7 presents data on the prevalence of 16 specific health conditions among Boston's child population.

Figure 2.8 presents data on selected emotional, behavioral, and developmental conditions by gender. Research on mental health disorders in childhood and adolescence indicates patterns of gender differences by type of disorder and age of onset [12]. Young boys are much more likely than young girls to be diagnosed with disorders that usually become apparent in early childhood such as ADHD, autism, developmental language delays, and dyslexia [12]. However, girls have much higher rates of mental health diagnoses for disorders that typically present in adolescence, such as depressive conditions and other emotional disorders [12]. Further research is needed to determine whether this reflects true differences between girls and boys, or whether they are a result of provider bias, stigma, or social expectations pertaining to gender and mental health [13].

## Health of Boston's Children

**Figure 2.7 Diagnoses of Children by Race and Ethnicity, Ages 0-17**

| Diagnoses  | BOSTON |             | Black |            | Latino |            | White |           |
|--|--------|-------------|-------|------------|--------|------------|-------|-----------|
|  | %      | CI          | %     | CI         | %      | CI         | %     | CI        |
| <b>ADD or ADHD<sup>†</sup></b>                                   | 6.0    | (4.5-7.5)   | 5.3   | (3.1-7.5)  | 6.4    | (3.3-9.4)  | 5.3   | (3.2-7.3) |
| <b>Anemia or Sickle Cell</b>                                     | 0.9    | (0.4-1.4)   | 0.9   | (0.2-1.6)  | 1.4    | (0.1-2.6)  | *     | *         |
| <b>Anxiety Problems<sup>†</sup></b>                              | 4.0    | (2.6-5.5)   | 1.8   | (0.4-3.3)  | 6.6    | (2.7-10.5) | 4.8   | (2.8-6.8) |
| <b>Asthma</b>  | 12.6   | (10.3-14.9) | 13.7  | (9.6-17.8) | 14.3   | (9.6-19.0) | 7.0   | (4.2-9.8) |
| <b>Autism or ASD<sup>†</sup></b>                                 | 1.6    | (0.8-2.4)   | 1.7   | (0.5-2.8)  | 2.1    | (0.1-4.2)  | 0.9   | (0.3-1.5) |
| <b>Behavioral or Conduct Problems<sup>†</sup></b>                | 3.0    | (1.9-4.1)   | 1.9   | (1.0-2.9)  | 4.7    | (1.8-7.6)  | 1.6   | (0.3-2.9) |
| <b>Brain Injury</b>  | 0.2    | (0.0-0.3)   | *     | *          | *      | *          | *     | *         |
| <b>Cerebral Palsy<sup>†</sup></b>                                | 0.1    | (0.0-0.2)   | *     | *          | *      | *          | *     | *         |
| <b>Depression<sup>†</sup></b>                                    | 2.4    | (1.3-3.6)   | 1.7   | (0.6-2.9)  | 4.7    | (1.4-8.1)  | 1.1   | (0.4-1.8) |
| <b>Diabetes</b>  | 0.2    | (0.0-0.4)   | *     | *          | *      | *          | *     | *         |
| <b>Epilepsy or Seizure Disorder</b>                              | 0.3    | (0.0-0.5)   | *     | *          | *      | *          | *     | *         |
| <b>Food or Digestive Allergy</b>                                 | 7.1    | (5.3-8.9)   | 8.9   | (5.1-12.8) | 4.4    | (2.1-6.6)  | 5.7   | (3.1-8.2) |
| <b>Intellectual Disability or Mental Retardation<sup>†</sup></b> | 0.6    | (0.3-0.8)   | 0.7   | (0.1-1.2)  | 0.5    | (0.1-0.9)  | 0.3   | (0.0-0.7) |
| <b>Learning Disability<sup>‡</sup></b>                           | 7.9    | (6.1-9.7)   | 8.0   | (4.7-11.2) | 9.1    | (5.2-12.9) | 6.4   | (4.3-8.5) |
| <b>Migraine Headaches</b>  | 3.2    | (2.1-4.3)   | 2.3   | (0.8-3.7)  | 4.7    | (1.7-7.6)  | 2.1   | (1.1-3.1) |
| <b>Speech or Other Language Problems<sup>†</sup></b>             | 3.6    | (2.6-4.7)   | 4.0   | (1.5-6.4)  | 3.8    | (2.0-5.7)  | 3.9   | (2.2-5.5) |

\*Insufficient sample size

<sup>†</sup>Does not include children under age 2 years due to required diagnostic criteria.

<sup>‡</sup>Does not include children under age 3 years due to required diagnostic criteria.

NOTES: Data for Asian children are not presented due to insufficient sample size. Data for multiracial/other race are not shown.

Parents/caregivers of children with a learning disability were told by a doctor, health care provider, teacher, or school official that their child had this condition; parents/caregivers of children with an intellectual disability or mental retardation were told by doctor or other health care provider that their child had this condition.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.7** presents data on the prevalence of sixteen specific health conditions among Boston children by race and ethnicity. Percentages of diagnoses in children were similar by child racial and ethnic group. Some differences in prevalence seen across demographic groups nationally were not evident in BSCH data. For example, the 2011-2012 National Survey of Children's Health indicated higher percentages of Black children had been diagnosed with asthma, behavioral or conduct disorders, and epilepsy or seizure disorder than White children and lower percentages of Latino and Black children than White children nationally had been diagnosed with anxiety problems. Small sample size and the relatively low prevalence of these conditions may explain the absence of differences across groups in Boston.

| Diagnoses  | Female |           | Male |            |
|--|--------|-----------|------|------------|
|  | %      | CI        | %    | CI         |
| <b>ADD or ADHD</b>                                   | 2.6    | (1.5-3.6) | 9.5  | (6.7-12.2) |
| <b>Anxiety Problems</b>                              | 3.5    | (1.4-5.5) | 4.6  | (2.6-6.6)  |
| <b>Autism or ASD</b>                                 | 0.5    | (0.1-0.8) | 2.8  | (1.3-4.3)  |
| <b>Behavioral or Conduct Problems</b>                | 1.3    | (0.5-2.1) | 4.7  | (2.7-6.7)  |
| <b>Depression</b>                                    | 2.3    | (0.7-4.0) | 2.6  | (1.0-4.2)  |
| <b>Intellectual Disability or Mental Retardation</b> | 0.3    | (0.0-0.6) | 0.8  | (0.4-1.2)  |
| <b>Learning Disability*</b>                          | 4.6    | (3.0-6.3) | 11.2 | (8.1-14.4) |

\*Does not include children under age 3 years due to required diagnostic criteria.

NOTES: Children under age 2 years are not included due to required diagnostic criteria for the selected conditions. Parents/caregivers of children with a learning disability were told by a doctor, health care provider, teacher, or school official that their child had this condition; parents/caregivers of children with an intellectual disability or mental retardation were told by a doctor or other health care provider that their child had this condition.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.8** presents data on selected emotional, behavioral, and developmental conditions by gender. In Boston, lower percentages of female children were reported having ADD or ADHD, autism or Autism Spectrum Disorders (ASD), behavioral or conduct problems, or a learning disability than male children. There were no differences in the percentages of children with anxiety problems, depression, or intellectual disability or mental retardation by gender.

### **Pediatric Health Care Utilization**

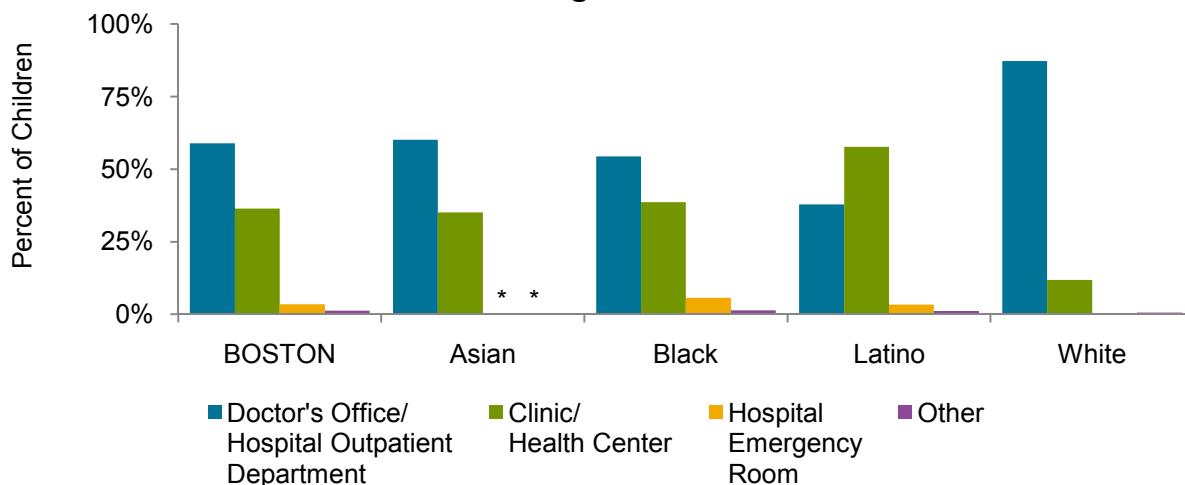
This section provides data on children's usual place of care, receipt of preventive medical and dental care, and care by medical specialists.

Children who have a usual place of health care are more likely to receive preventive care and less likely to have unmet medical and dental needs [14]. Having a usual place of care in a doctor's office or health center (as compared to an emergency room or walk-in clinic) is associated with increased patient and family satisfaction, which may reflect the perceived benefit of having a provider who knows the child and is familiar with his or her medical history and development [14]. Boston is served by 25 community health centers and multiple medical centers that provide routine pediatric medical care. The BSCH asked parents and caregivers to identify one or more usual places of care, or to indicate when a child had no regular site for pediatric care. According to the BSCH, 92.6% of children had at least one usual place of care; for most, this was a community health center, doctor's office, or hospital outpatient department (data not shown). A small minority of families used the emergency department as a usual place of care for treatment of illness. This may reflect barriers to more consistent sources confronting some families. Some parents or caregivers may think of an emergency room as one usual source of care even if they have consistent primary care if their child has frequent episodes of a condition that comes on suddenly or can be life-threatening. Figure 2.9 presents data on Boston children's usual place of care.

Regular preventive medical and dental care, indicated here by parent or caregiver report that the child saw a physician or dentist at least once in the past year for a check-up, improves health outcomes among children through screening, early diagnosis and treatment of conditions, and the provision of anticipatory guidance to reduce disease and injury risk [15]. It also helps to control personal, family, and overall health care costs by reducing avoidable hospitalizations, reducing the need for advanced dental services, and improving the overall health of children [15]. Figures 2.10 and 2.11 present data on the percentage of children that received preventive medical and dental care in the past year.

For some children, access to regular pediatric care is not enough. Children with acute or chronic conditions may need the care of pediatricians with specialized training to treat particular organ systems or types of illness [16]. While the number of pediatric subspecialists practicing in the United States has risen over time, medical literature continues to highlight their scarcity and the unmet needs of many children for specialty care [17, 18]. National data indicate children are most likely to see subspecialists when they are young, live in urban environments, are White, and have more severe medical conditions [19]. Nationally, lower rates of specialist use are observed among Black and Latino children, even when controlling for presence of a chronic condition or disability, insurance status and type, and socioeconomic status [20]. Figure 2.12 presents data on Boston children who visited a specialist in the past year.

**Figure 2.9 Place that Child Usually Went When He/She was Sick,  
Ages 0-17**



|   | BOSTON               | Asian                | Black                | Latino               | White                |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|
| Doctor's Office/<br>Hospital Outpatient<br>Department | 58.9%<br>(55.4-62.3) | 60.1%<br>(40.2-80.1) | 54.3%<br>(47.7-60.9) | 37.9%<br>(31.1-44.6) | 87.2%<br>(83.6-90.9) |
| Clinic/Health<br>Center                               | 36.4%<br>(33.0-39.9) | 35.1%<br>(15.0-55.3) | 38.6%<br>(32.2-45.1) | 57.6%<br>(50.7-64.6) | 11.8%<br>(8.2-15.4)  |
| Hospital<br>Emergency<br>Room                         | 3.5%<br>(2.1-4.8)    | *                    | 5.6%<br>(2.5-8.8)    | 3.4%<br>(0.9-5.9)    | 0.4%<br>(0.0-0.9)    |
| Other   | 1.3%<br>(0.5-2.0)    | *                    | 1.4%<br>(0.0-3.2)    | 1.1%<br>(0.0-2.4)    | 0.6%<br>(0.1-1.0)    |

\*Insufficient sample size

NOTE: Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.9** presents data on the place that a child usually went (at the time of the survey) when he or she was sick by race and ethnicity. Approximately fifty-nine percent of Boston children usually went to a doctor's office or a hospital outpatient department when they were sick; a higher percentage of White children sought care at one of those sites than Asian, Black and Latino children. Approximately thirty-six percent of Boston children went to a clinic or a health center rather than a private doctor's office or a hospital. Approximately half of Latino children sought care at these types of facilities; higher than the percentage of Black or White children. Only four percent of Boston children usually went to a hospital emergency room when they were ill, but a lower percentage of White children went to a hospital emergency room than Black children.

## Health of Boston's Children

**Figure 2.10 Children Who Received Preventive Medical Care in Past Year, Ages 0-17**

|  | %    | CI          |
|--|------|-------------|
| United States                          | 84.4 | (83.8-84.9) |
| Massachusetts                          | 91.4 | (89.5-93.3) |
| BOSTON                                 | 89.0 | (86.7-91.3) |
| <b>Age</b>                             |      |             |
| Ages 0-5                               | 89.3 | (85.6-93.0) |
| Ages 6-10                              | 88.7 | (84.1-93.3) |
| Ages 11-14                             | 89.2 | (84.0-94.3) |
| Ages 15-17                             | 88.4 | (83.2-93.6) |
| <b>Race/Ethnicity of Child</b>         |      |             |
| Asian                                  | 90.5 | (81.3-99.7) |
| Black                                  | 85.7 | (81.2-90.3) |
| Latino                                 | 86.1 | (81.3-91.0) |
| White                                  | 96.4 | (94.7-98.1) |
| <b>Child Place of Birth</b>            |      |             |
| US-Born                                | 89.2 | (86.9-91.6) |
| Foreign-Born                           | 85.1 | (75.8-94.5) |
| <b>Federal Household Poverty Level</b> |      |             |
| Below FPL                              | 81.9 | (75.8-87.9) |
| 100-199% FPL                           | 84.5 | (78.1-90.8) |
| 200-299% FPL                           | 90.4 | (85.5-95.4) |
| 300-399% FPL                           | 97.6 | (95.3-99.9) |
| 400% FPL or Above                      | 96.4 | (94.0-98.8) |
| <b>Health Insurance</b>                |      |             |
| MassHealth/<br>Medicaid                | 85.7 | (82.0-89.4) |
| Other                                  | 94.0 | (91.6-96.4) |

NOTE: Data for multiracial/other race are not shown.

DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.10** presents data on children who received preventive medical care in the past year. In Boston, eighty-nine percent of children received preventive medical care in the past year, which was higher than the percentage for children living in the United States. Within Boston, a higher percentage of White children received preventive medical care than Black and Latino children. A higher percentage of children living in households with annual income 300%-399% FPL or 400% FPL or above received preventive medical care than children living in a household with annual income 100%-199% FPL or those below FPL. A lower percentage of children with MassHealth/Medicaid received preventive medical care than children with other health insurance. There were no differences by age group or by child's place of birth.

**Figure 2.11 Children Who Received Preventive Dental Care in Past Year, Ages 1-17**

|  | %    | CI          |
|--|------|-------------|
| United States                          | 77.2 | (76.5-77.8) |
| Massachusetts                          | 83.3 | (80.9-85.7) |
| BOSTON                                 | 78.0 | (75.1-81.0) |
| <b>Age</b>                             |      |             |
| Ages 1-5                               | 56.5 | (50.4-62.5) |
| Ages 6-10                              | 93.5 | (89.8-97.2) |
| Ages 11-14                             | 90.2 | (85.4-94.9) |
| Ages 15-17                             | 83.9 | (77.9-90.0) |
| <b>Race/Ethnicity of Child</b>         |      |             |
| Asian                                  | 74.9 | (59.7-90.1) |
| Black                                  | 81.1 | (75.8-86.3) |
| Latino                                 | 80.0 | (74.3-85.7) |
| White                                  | 72.8 | (67.5-78.0) |
| <b>Child Place of Birth</b>            |      |             |
| US-Born                                | 77.3 | (74.2-80.4) |
| Foreign-Born                           | 83.8 | (73.5-94.1) |
| <b>Federal Household Poverty Level</b> |      |             |
| Below FPL                              | 80.9 | (74.9-87.0) |
| 100-199% FPL                           | 75.1 | (67.5-82.7) |
| 200-299% FPL                           | 81.7 | (73.0-90.4) |
| 300-399% FPL                           | 76.1 | (67.8-84.3) |
| 400% FPL or Above                      | 76.4 | (70.8-82.1) |
| <b>Health Insurance</b>                |      |             |
| MassHealth/<br>Medicaid                | 79.0 | (74.6-83.4) |
| Other                                  | 79.0 | (75.0-82.9) |

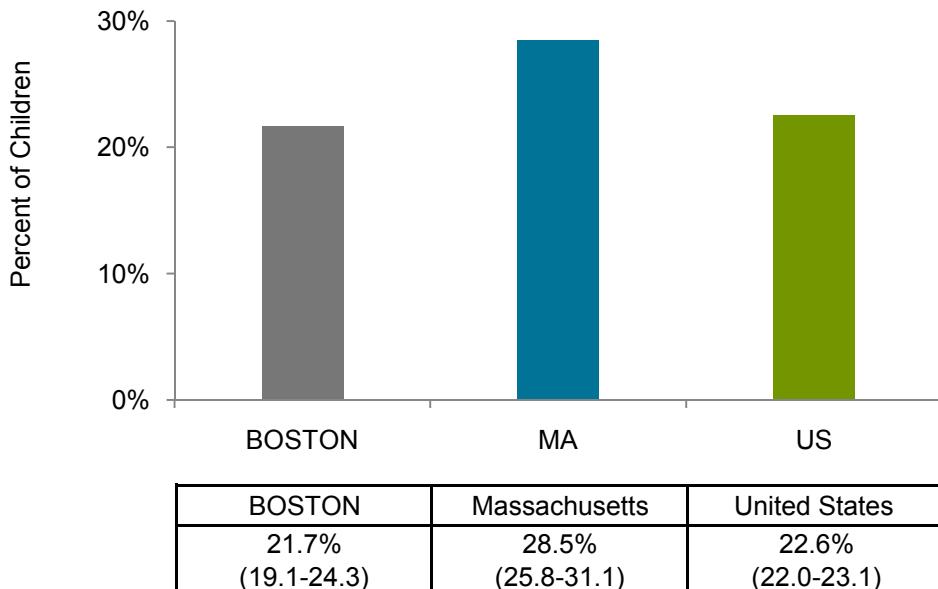
NOTE: Data for multiracial/other race are not shown.

DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.11** presents data on receipt of preventive dental care in the past year. Seventy-eight percent of Boston children received preventive dental care in the past year, which was similar to the percentages for children living in the United States and Massachusetts. A lower percentage of children ages 1-5 received preventive dental care than children in all other age groups. No differences were seen based on race and ethnicity of child, child's place of birth, household income in relation to FPL, or health insurance.

**Figure 2.12 Children Who Had Seen a Specialist in Past Year, Ages 0-17**



DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.12** presents data on children who had seen a specialist in the past year comparing BSCH data to data from the National Survey of Children's Health. Approximately 22% of Boston children had seen a specialist in the past year, which was lower than the percentage of children in Massachusetts.

Of children that saw a specialist, about 36% (35.8%) were children with special health care needs (data not shown). Lower percentages of Black and Latino children had seen a specialist in the past year than White children (data not shown).

## Health Insurance and Cost of Health Care for Boston Parents and Caregivers

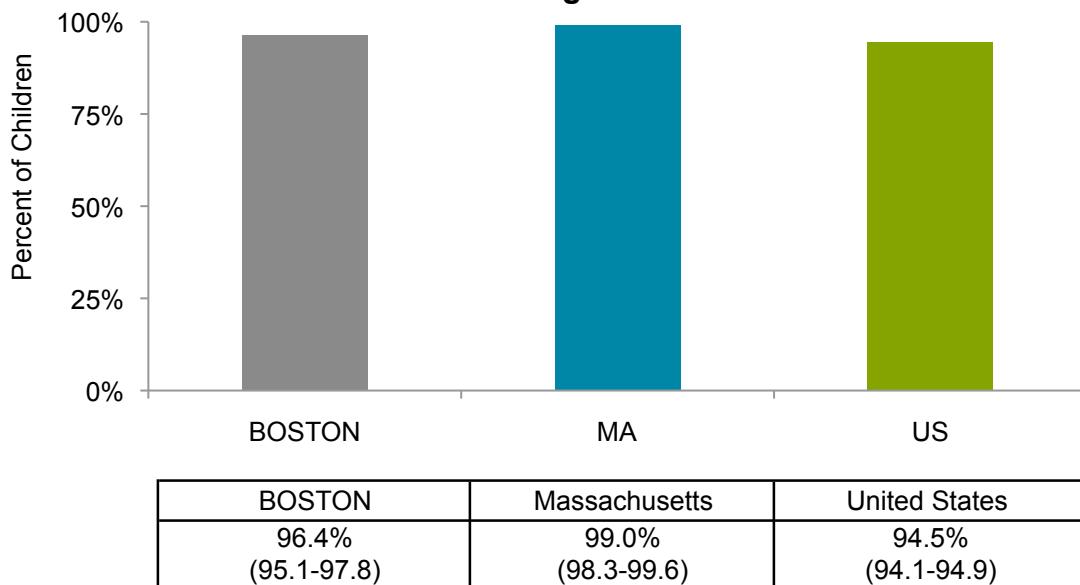
This section presents data on the health insurance status and types of coverage among Boston children and on costs borne by parents and caregivers for their children's health care. Parents and caregivers were asked both the amount of money they paid for their children's care and the degree to which those expenditures caused family hardship.

Health insurance is crucial to early diagnosis and comprehensive treatment for both children and adults. Children who are uninsured, or have gaps in insurance coverage so that they are uninsured for at least part of a year, are much less likely than children with consistent coverage to access primary and preventive care, are less likely to have medication prescriptions filled, and are more likely to use emergency departments as a source of care [21]. Health insurance status can have a particular impact on health outcomes and quality of life among children with special health care needs and their families [22]. Low-income families that are insured through Medicaid experience less financial burden than low-income privately insured families [23]. Figures 2.13 and 2.14 present data on health insurance status and health insurance type among Boston children.

Out-of-pocket costs, whether due to being uninsured or due to having health expenditures that are not fully covered by insurance, have a disproportionate effect on poor families [23]. In fact, the literature indicates that financial burden from medical expenses for one family member may reduce resources spent on care for all members [23]. Healthcare-related financial burden is also a strong predictor of delayed or forgone necessary health care among families with children [24]. In order to examine the out-of-pocket costs of health care, the BSCH asked parents and caregivers how much they spent on their child's medical expenses and whether they had trouble paying medical bills for their child. These data are presented in figures 2.15 and 2.16.

## Health of Boston's Children

**Figure 2.13 Children with Health Insurance Coverage,  
Ages 0-17**



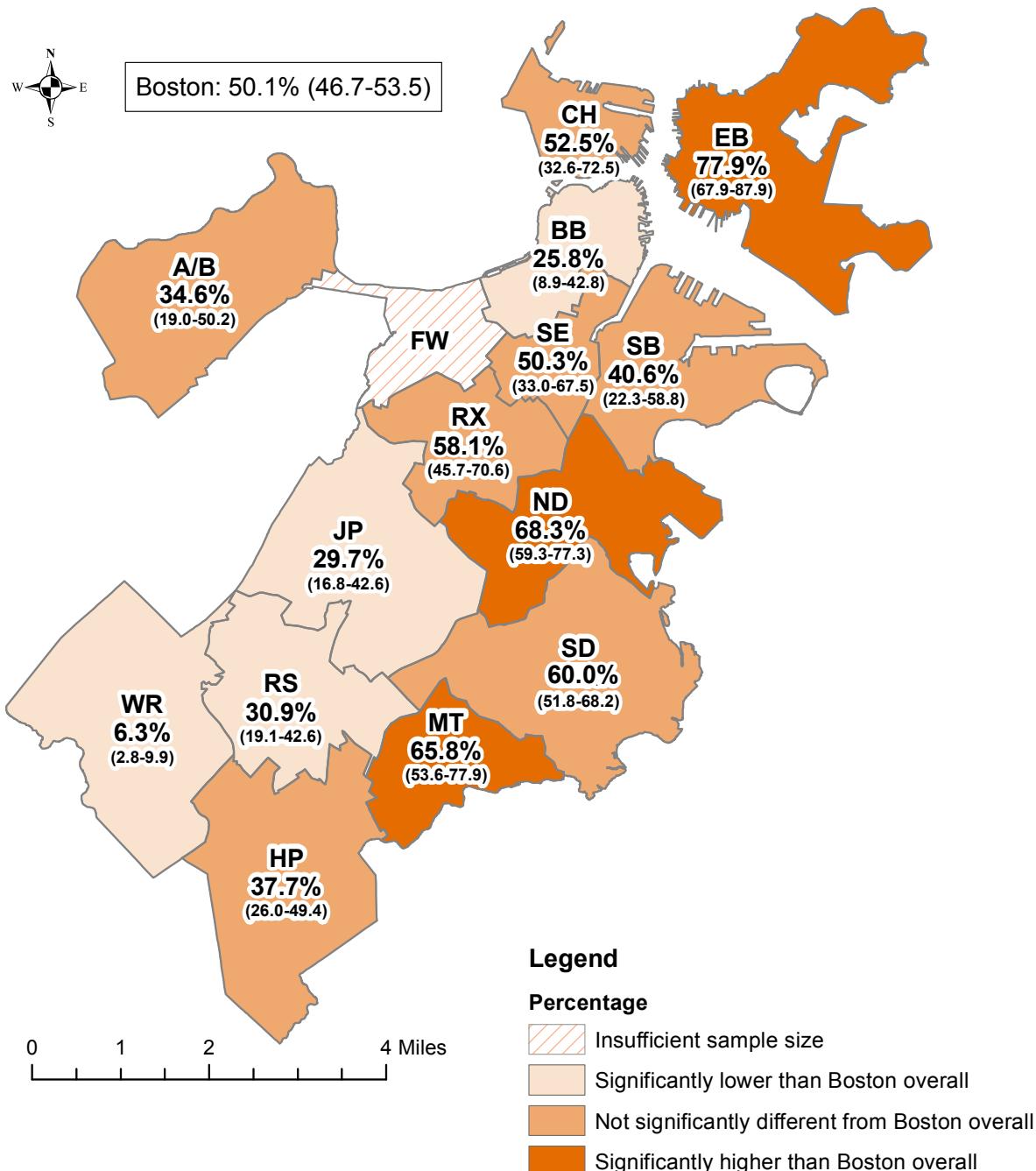
DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.13** presents data on child health insurance status comparing BSCH data with Massachusetts and United States data from the National Survey of Children's Health. Approximately ninety-six percent of Boston children were reported by their parents or caregivers as being covered by health insurance, which was higher than the United States but lower than Massachusetts.

## Health Insurance and Cost of Health Care for Boston Parents and Caregivers

**Figure 2.14 Insured Children with MassHealth/Medicaid Coverage, Ages 0-17**



NOTE: The neighborhood definitions are based on zip codes.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

MAP CREATED BY: Boston Public Health Commission Research and Evaluation Office

**Figure 2.14** presents data on health insurance type among Boston children. Of insured children in Boston, between 46.7% and 53.5% were insured through MassHealth/Medicaid, and these children are distributed differentially by neighborhood.

## Health of Boston's Children

| Figure 2.15 Parent/Caregiver Spent More Than \$500 on Child's Medical Expenses in Past Year, Children Ages 0-17 |      |             |
|---|------|-------------|
|   | %    | CI          |
| BOSTON  | 12.9 | (10.8-15.0) |
| Race/Ethnicity of Child   |      |             |
| Asian   | 15.2 | (5.4-25.0)  |
| Black   | 9.2  | (5.8-12.6)  |
| Latino  | 9.9  | (6.2-13.7)  |
| White   | 20.1 | (16.1-24.2) |
| Primary Language Spoken at Home   |      |             |
| English   | 14.2 | (11.8-16.6) |
| Spanish   | 8.3  | (3.6-13.0)  |
| Other   | 8.7  | (2.4-15.1)  |
| Child Place of Birth  |      |             |
| US-Born   | 12.6 | (10.4-14.7) |
| Foreign-Born  | 15.5 | (8.1-23.0)  |
| Health Insurance  |      |             |
| MassHealth/<br>Medicaid   | 5.6  | (3.4-7.8)   |
| Other   | 19.6 | (16.2-23.0) |

NOTE: Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.15** presents data on the amount of money that parents or caregivers spent on health care for their child across demographic groups. Approximately thirteen percent of Boston children had more than \$500 spent by their parent or caregiver for medical expenses in the past year. A higher percentage of White children had more than \$500 spent on them by their parent or caregiver for medical expenses in the past year than Latino or Black children. A lower percentage of children with MassHealth/Medicaid had more than \$500 spent on them by their parent or caregiver for medical expenses in the past year than children with other types of health insurance. There were no differences by primary language spoken at home, or by child's place of birth.

Lower percentages of Boston children ages 11-14 and 15-17 years had \$1-\$250 spent on them by their parent or caregiver for medical expenses in the past year than children ages 0-5 years (data not shown). A higher percentage of children ages 15-17 years had more than \$500 spent on them by their parent or caregiver for medical expenses in the past year than children ages 0-5 and children ages 6-10 years (data not shown).

## Health Insurance and Cost of Health Care for Boston Parents and Caregivers

**Figure 2.16 Parent/Caregiver Had Problems Paying Child's Medical Bills in Past Year, Children Ages 0-17**

|  | %    | CI          |
|--|------|-------------|
| BOSTON                                 | 11.0 | (8.8-13.2)  |
| <b>Age</b>                             |      |             |
| Ages 0-5                               | 6.7  | (4.1-9.4)   |
| Ages 6-10                              | 12.0 | (7.3-16.7)  |
| Ages 11-14                             | 11.3 | (6.5-16.1)  |
| Ages 15-17                             | 19.4 | (12.5-26.2) |
| <b>Race/Ethnicity of Child</b>         |      |             |
| Asian                                  | 11.6 | (0.0-23.9)  |
| Black                                  | 13.2 | (9.0-17.3)  |
| Latino                                 | 13.7 | (8.8-18.5)  |
| White                                  | 5.9  | (3.8-8.0)   |
| <b>Federal Household Poverty Level</b> |      |             |
| Below FPL                              | 10.3 | (6.0-14.6)  |
| 100-199% FPL                           | 17.7 | (11.2-24.3) |
| 200-299% FPL                           | 10.2 | (5.6-14.9)  |
| 300-399% FPL                           | 5.8  | (2.4-9.2)   |
| 400% FPL or Above                      | 5.7  | (2.7-8.8)   |
| <b>Health Insurance</b>                |      |             |
| MassHealth/<br>Medicaid                | 12.1 | (8.6-15.6)  |
| Other                                  | 9.2  | (6.5-11.9)  |

NOTE: Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.16** presents data on the degree to which parents or caregivers had problems paying their child's medical expenses. Approximately eleven percent of Boston children had parents or caregivers with problems paying their child's medical bills in past year. A higher percentage of children ages 15-17 than children ages 0-5 had parents or caregivers who reported hardship in paying for their child's medical bills. A lower percentage of White children than Black and Latino children had parents or caregivers who reported hardship. A higher percentage of children living in a household with an annual household income 100%-199% of federal poverty (FPL) level had parents or caregivers with problems paying their child's medical bills in the past year than children living in a household with annual household income 300%-399% of FPL and 400% or more of FPL. There was no difference by health insurance type, which may suggest increased coverage and fewer out-of-pocket costs among MassHealth/Medicaid members.

## **Barriers to Families Receiving Health Care for Their Child When They Need It**

This section provides data on barriers that Boston parents and other caregivers face when seeking and receiving health care for their children. These barriers detract from quality of care, making it difficult for parents or caregivers to assure that their children receive all the care they need and that care is received in a timely fashion.

The BSCH asked parents and caregivers about twelve potential problems they might have encountered while seeking medical care for their child. Approximately 68% of children had parents or caregivers who reported that they did not experience any of these twelve problems (data not shown). Lower percentages of Asian, Black and Latino children than White children had parents or caregivers who experienced no problems (data not shown). Higher percentages of Black and Latino children than White children had parents or caregivers who experienced three or more problems (data not shown).

## Barriers to Families Receiving Health Care for Their Child When They Need It

**Figure 2.17 Problems Encountered in Past Year When  
Child Needed Medical Care, Children Ages 0-17**

|  | %    | CI         |
|--|------|------------|
| Could not take the time off of work  | 10.6 | (8.4-12.9) |
| Did not have insurance   | 9.3  | (7.2-11.5) |
| There was a problem with my health plan                                    | 8.6  | (6.6-10.7) |
| Could not get or had difficulty getting an appointment                     | 6.7  | (5.0-8.4)  |
| Could not afford care  | 6.7  | (4.8-8.5)  |
| Could not get transportation/Had difficulty getting to doctor's office     | 6.0  | (4.4-7.5)  |
| Was not satisfied with the doctor  | 5.8  | (4.4-7.3)  |
| Did not know where to find a doctor who speaks the same language that I do | 3.0  | (1.8-4.2)  |
| Did not know where to find care  | 2.9  | (1.6-4.1)  |
| There was a vaccine shortage so my child could not get vaccinated          | 2.7  | (1.6-3.8)  |
| Did not have a referral for a specialist                                   | 2.6  | (1.5-3.8)  |
| Could not find a doctor who accepts child's insurance                      | 2.4  | (1.4-3.4)  |

NOTE: Respondents could select multiple problems encountered.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.17** presents data on the specific problems parents or caregivers encountered when their child needed medical care. Among the problems encountered by parents or caregivers when their child needed medical care in the past year was the inability of parents or caregivers to take time off from work. This affected 1 in 10 children. Other barriers were lack of health insurance for children, and problems with the family's health plan.

## **Parent or Caregiver Trust in Medical Providers**

This section provides data on parent or caregiver trust in their child's doctors. A strong provider-patient relationship facilitates effective exchange of medical information for the medical provider and for the patient, increases patient self-confidence and motivation, and can promote a positive view of the patient's health status, which increases the likelihood of positive health outcomes [25, 26]. Patient-doctor communication and trust is even more important in pediatric care than in care for adults, as pediatricians must elicit and present information in ways that are effective for both child and parent [25, 26]. Figure 2.18 presents data on how often parents and caregivers felt that doctors did not do everything they should for their child's medical care. This is one measure of parent and caregiver trust in doctors.

## Parent or Caregiver Trust in Medical Providers

**Figure 2.18 How Often Parent/Caregiver Felt That Doctors Did Not Do Everything They Should for Their Child's Medical Care, Children Ages 1-17**

|  | Frequently |            | Occasionally |            | Rarely/Never |             |
|--|------------|------------|--------------|------------|--------------|-------------|
|  | %          | CI         | %            | CI         | %            | CI          |
| BOSTON                                 | 7.3        | (5.5-9.2)  | 8.9          | (7.1-10.8) | 83.7         | (81.2-86.3) |
| <b>Child General Health</b>            |            |            |              |            |              |             |
| Good or Better                         | 6.6        | (4.8-8.4)  | 9.0          | (7.1-11.0) | 84.4         | (81.9-86.9) |
| Poor or Fair                           | 23.1       | (8.0-38.3) | 6.6          | (1.4-11.8) | 70.3         | (54.7-85.8) |
| <b>Race/Ethnicity of Child</b>         |            |            |              |            |              |             |
| Asian                                  | *          | *          | 4.7          | (0.4-9.1)  | 92.0         | (86.3-97.8) |
| Black                                  | 9.2        | (5.5-13.0) | 9.5          | (6.2-12.7) | 81.3         | (76.5-86.0) |
| Latino                                 | 8.1        | (4.3-11.9) | 11.5         | (7.0-16.1) | 80.4         | (74.8-86.0) |
| White                                  | 4.8        | (2.1-7.4)  | 6.2          | (4.2-8.2)  | 89.1         | (85.8-92.3) |
| <b>Child Place of Birth</b>            |            |            |              |            |              |             |
| US-Born                                | 7.6        | (5.6-9.7)  | 9.4          | (7.4-11.4) | 83.0         | (80.2-85.7) |
| Foreign-Born                           | 5.8        | (1.0-10.5) | 4.6          | (0.7-8.6)  | 89.6         | (83.4-95.7) |
| <b>Federal Household Poverty Level</b> |            |            |              |            |              |             |
| Below FPL                              | 12.9       | (7.3-18.5) | 8.8          | (4.6-13.0) | 78.3         | (71.7-84.9) |
| 100-199% FPL                           | 6.0        | (1.7-10.2) | 11.8         | (6.6-17.0) | 82.3         | (75.8-88.7) |
| 200-299% FPL                           | 5.4        | (1.2-9.6)  | 9.0          | (4.6-13.4) | 85.6         | (79.6-91.5) |
| 300-399% FPL                           | 6.9        | (1.6-12.2) | 8.7          | (3.4-14.1) | 84.4         | (77.3-91.5) |
| 400% FPL or Above                      | 4.7        | (2.3-7.1)  | 7.2          | (4.0-10.3) | 88.1         | (84.3-92.0) |

\*Insufficient sample size

NOTES: General health for children is indicated as "good or better" where respondents reported general health status to be "excellent", "very good", or "good." Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 2.18** presents data on the frequency with which parents or caregivers felt that their child's doctors did not do everything they should for their child's medical care. In Boston, 16.2% of children had parents or caregivers who reported that they occasionally or frequently believed their child's doctors did not do everything they could for their child. A higher percentage of children in households with income below FPL than children in households with income 400% of FPL or greater had parents or caregivers who reported that they frequently felt that doctors did not do everything they should have for their child's medical care.

There were no differences by race and ethnicity of child, child general health, or by the child's place of birth (data not shown).

### **Summary: Health and Health Services**

Data presented in this chapter about child health and health care utilization can inform efforts to address the health of children in Boston, to improve systems of care for children and families, and to identify areas for future research. In Boston, lower percentages of children were reported to be in very good or excellent general health and very good or excellent dental health than children in Massachusetts overall. A higher percentage of Boston children were reported to be overweight/obese than children in Massachusetts and the United States overall. Among Boston children, White children, children in higher income families and children whose parents or caregivers had higher educational attainment were in the best general and dental health.

Most (92.6%) of Boston children had at least one usual place of care, and for the large majority of children this was a community health center, doctor's office, and/or hospital outpatient department. However, a higher percentage of Black children went to the emergency room for care than White children. A higher percentage of Boston children received preventive medical care than children in the United States overall. White children, children in higher-income families and children with health insurance coverage other than MassHealth/Medicaid received more preventive medical care than Black and Latino children, children in lower-income families and children insured by MassHealth/Medicaid.

Insurance coverage for Boston children was higher than the national average, but lower than the statewide rate for Massachusetts. Problems encountered by many parents or caregivers when their child needed medical care in the past year included the inability of parents or caregivers to take time off work, lack of health insurance, and problems with the family's health plan. Higher percentages of children in low-income families and Black and Latino children had parents or caregivers who reported problems paying their child's medical bills in the past year than children in higher income families and White children. A higher percentage of children in poverty had parents or caregivers who reported that they frequently felt that doctors did not do everything they should for their child's medical care.

References:

1. Institute for Healthcare Improvement (2013). Triple Aim: Better Health and Better Care at Lower Cost. *Institute for Healthcare Improvement*. Retrieved July 30, 2013 from <http://www.ihi.org/explore/TripleAim/Pages/default.aspx>.
2. U.S. Department of Health and Human Services (2009). The Health and Well Being of Children: *A Portrait of States and the Nation 2007*.
3. Williams, J., Wake, M., Hesketh, K., Maher, E., & Waters, E. (2005). Health-related quality of life of overweight and obese children. *JAMA: the Journal of the American Medical Association*, 293(1), 70-76.
4. Klassen, A. F., Miller, A., & Fine, S. (2004). Health-related quality of life in children and adolescents who have a diagnosis of attention-deficit/hyperactivity disorder. *Pediatrics*, 114(5), e541-e547.
5. Teranishi, K., Hayes, D. K., Iwaishi, L. K., & Fuddy, L. J. (2011). Poorer general health status in children is associated with being overweight or obese in Hawai'i: Findings from the 2007 National Survey of Children's Health. *Hawaii Medical Journal*, 70(7 suppl 1), 16.
6. Stevens GD (2006). Gradients in the health status and developmental risks of young children: the combined influences of multiple social risk factors. *Maternal Child Health Journal*, 10(2), 187–199.
7. Daniels SR. (2009). The use of BMI in the clinical setting. *Pediatrics*. 124(1), S35-41.
8. Lobstein, T., Baur, L., & Uauy, R. (2004). Obesity in children and young people: a crisis in public health. *Obesity Reviews*, 5(s1), 4-85.
9. U.S. Department of Health and Human Services (2013, April). Oral Health. *Healthy People 2020*. Retrieved July 30, 2013 from <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=32>
10. Mouradian, W. E. (2001). The face of a child: children's oral health and dental education. *Journal of Dental Education*, 65(9), 821-831.
11. Varni, J., Limbers, C., & Burwinkle, T. (2007). Impaired health-related quality of life in children and adolescents with chronic conditions: a comparative analysis of 10 disease clusters and 33 disease categories/severities utilizing the PedsQL™ 4.0 Generic Core Scales. *Health and Quality of Life Outcomes*, 5(1), 43.
12. Rutter, M., Caspi, A., & Moffitt, T. E. (2003). Using sex differences in psychopathology to study causal mechanisms: unifying issues and research strategies. *Journal of Child Psychology and Psychiatry*, 44(8), 1092-1115.
13. Zahn-Waxler, C., Shirtcliff, E. A., & Marceau, K. (2008). Disorders of childhood and adolescence: Gender and psychopathology. *Annual Review of Clinical Psychology*, 4, 275-303.
14. Strickland, B. B., Jones, J. R., Ghandour, R. M., Kogan, M. D., & Newacheck, P. W. (2011). The medical home: health care access and impact for children and youth in the United States. *Pediatrics*, 127(4), 604-611.
15. Kenney, G. M., Marton, J., Klein, A. E., Pelletier, J. E. and Talbert, J. (2011), The Effects of Medicaid and CHIP policy changes on receipt of preventive care among children. *Health Services Research*, 46: 298–318.
16. Freed, G. L., Nahra, T. A., Venus, P. J., Schech, S. D., & Wheeler, J. R. (2005). Changes in the proportion and volume of care provided to children by generalists and subspecialists. *The Journal of Pediatrics*, 146(1), 14-19.
17. Cooper, R. A. (2002). There's a shortage of specialists: is anyone listening?. *Academic Medicine*, 77(8), 761-766.
18. Glabman, M. (2001). Too many patients, too few physicians. *Managed Care (Langhorne, PA)*, 10(7), 20.
19. Kuhlthau, K., Ferris, T. G., Beal, A. C., Gortmaker, S. L., & Perrin, J. M. (2001). Who cares for Medicaid-enrolled children with chronic conditions?. *Pediatrics*, 108(4), 906-912.
20. Kuhlthau, K., Nyman, R. M., Ferris, T. G., Beal, A. C., & Perrin, J. M. (2004). Correlates of use of specialty care. *Pediatrics*, 113(3), e249-e255.

## **Health of Boston's Children**

21. Olson, L. M., Tang, S. F. S., & Newacheck, P. W. (2005). Children in the United States with discontinuous health insurance coverage. *New England Journal of Medicine*, 353(4), 382-391.
22. Newacheck, P. W., Houtrow, A. J., Romm, D. L., Kuhlthau, K. A., Bloom, S. R., Van Cleave, J. M., & Perrin, J. M. (2009). The future of health insurance for children with special health care needs. *Pediatrics*, 123(5), e940-e947.
23. Galbraith, A., Wong, S., Kim, S., Newacheck, P. (2005). Out-of-pocket financial burden for low-income families with children: socioeconomic disparities and effects of Insurance. *Health Services Research*. Volume 40, Issue 6p1, pages 1722–1736.
24. Wisk, L. E., & Witt, W. P. (2012). Predictors of delayed or forgone needed health care for families with children. *Pediatrics*, 130(6), 1027-1037.
25. Ha, J. F., & Longnecker, N. (2010). Doctor-patient communication: a review. *The Ochsner Journal*, 10(1), 38-43.
26. Zolnierek, K. B. H., & DiMatteo, M. R. (2009). Physician communication and patient adherence to treatment: a meta-analysis. *Medical Care*, 47(8), 826.

**Chapter 3** provides information on children's lives in the context of home including information on family structure, family housing status and housing stability, and on children's experiences in the home environment related to meal times, sleep, screen time, and consumption of sugary beverages. Also included are data pertaining to children's exposure to a defined set of "adverse childhood experiences" (ACEs) known to affect development and long-term health [1, 2]. This chapter includes a special focus on experiences during infancy and early childhood, including participation in home visiting programs for new parents, breastfeeding, and use of childcare. Experiences in infancy and early childhood, generally centered in the home, set the stage for children to reach their full health and developmental potential [3].



## Children at Home

### **Family Structure and Parent or Caregiver Marital Status**

Figures 3.1 and 3.2 present data on the structure of Boston families with children and marital status of parents and caregivers in Boston, both of which can profoundly impact children's experiences growing up. Increasingly, children are growing up in families that do not match the traditional two-biological parent family structure [4]. According to the Pew Research Center, United States births to unmarried women increased from 5% in 1960 to 41% in 2008 [4]. During the same time period, the share of children raised by a single parent increased from 9% to 25% [4].

The presence of caring adults and a well-functioning family environment are important to a child's well-being and development, regardless of family structure or parent or other caregiver marital status [5]. Single-parent families, and families that have experienced a divorce, however, are at increased risk for experiencing financial hardship and familial stress, which impacts children's home life, including access to health-promoting resources inside the home and in the community such as high quality housing conditions, healthy food, safe and clean neighborhoods, and health care [6]. Children living with single mothers and children who have experienced parental divorce are at higher risk of poor overall physical and dental health, experience higher rates of asthma and respiratory illness, miss more days of school, and are at risk for more frequent headaches, more injuries, and poor mental and behavioral health outcomes than children living in families with two married biological parents [6].

## Family Structure and Parent or Caregiver Marital Status

**Figure 3.1 Family Structure of Child's Household,  
Children Ages 0-17**

|                                | 2 Parent<br>(Biological/Adoptive) |             | 2 Parent<br>(At Least 1 Step) |           | Mother Only |             | Other |            |
|--------------------------------|-----------------------------------|-------------|-------------------------------|-----------|-------------|-------------|-------|------------|
|                                | %                                 | CI          | %                             | CI        | %           | CI          | %     | CI         |
| BOSTON                         | 47.3                              | (44.0-50.7) | 4.3                           | (2.9-5.7) | 39.4        | (36.0-42.8) | 9.0   | (7.1-10.8) |
| <b>Race/Ethnicity of Child</b> |                                   |             |                               |           |             |             |       |            |
| Asian                          | 55.5                              | (36.5-74.5) | *                             | *         | 34.6        | (15.3-53.8) | 7.4   | (0.0-16.0) |
| Black                          | 36.7                              | (30.5-42.9) | 3.7                           | (1.6-5.7) | 49.2        | (42.8-55.5) | 10.5  | (7.1-13.9) |
| Latino                         | 34.9                              | (28.6-41.3) | 6.6                           | (3.4-9.9) | 49.0        | (42.2-55.7) | 9.5   | (5.6-13.4) |
| White                          | 72.9                              | (68.3-77.6) | 3.7                           | (1.0-4.0) | 17.9        | (14.1-21.8) | 5.4   | (3.5-7.3)  |
| <b>Annual Household Income</b> |                                   |             |                               |           |             |             |       |            |
| <\$25K                         | 21.5                              | (15.4-27.6) | 4.8                           | (1.4-8.2) | 60.4        | (53.2-67.5) | 13.4  | (9.0-17.8) |
| \$25K-<\$50K                   | 32.7                              | (24.4-40.9) | 5.2                           | (2.0-8.4) | 52.1        | (43.3-60.9) | 10.0  | (5.0-14.9) |
| \$50K-<\$75K                   | 59.9                              | (50.6-69.2) | 3.5                           | (0.9-6.0) | 27.1        | (19.0-35.3) | 9.5   | (3.2-15.8) |
| \$75K-<\$100K                  | 64.4                              | (57.1-71.7) | 1.2                           | (0.2-2.1) | 27.8        | (20.8-34.7) | 6.7   | (2.9-10.4) |
| \$100K+                        | 74.7                              | (68.7-80.6) | 5.8                           | (2.1-9.6) | 14.1        | (9.6-18.7)  | 5.4   | (2.4-8.3)  |

\*Insufficient sample size to present data for Asian children

NOTE: Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.1** presents data on family structure by multiple demographic variables. In Boston, 47.3% of children lived in a two parent biological or adoptive family. The second most common family structure in Boston was a mother only (no father present) family (39.4%). Higher percentages of Black and Latino children lived in mother only families than White children. Higher percentages of children who lived in households with an annual income of less than \$25,000 or \$25,000 - \$50,000 lived in mother only families than children in higher income households.

## Health of Boston's Children

**Figure 3.2 Marital Status of Parent/Caregiver Living with Child, Children Ages 0-17**

|  | Currently Married |             | Separated/Divorced/Widowed |             | Never Married |             |
|--|-------------------|-------------|----------------------------|-------------|---------------|-------------|
|  | %                 | CI          | %                          | CI          | %             | CI          |
| BOSTON   | 54.9              | (51.5-58.3) | 16.2                       | (13.7-18.7) | 28.9          | (25.7-32.2) |
| <b>Race/Ethnicity of Child</b>                       |                   |             |                            |             |               |             |
| Asian  | 63.8              | (44.5-83.1) | 13.8                       | (0.9-26.7)  | 22.4          | (4.0-40.8)  |
| Black  | 42.8              | (36.5-49.1) | 17.0                       | (12.4-21.5) | 40.2          | (33.9-46.5) |
| Latino   | 39.7              | (33.1-46.3) | 23.5                       | (17.7-29.3) | 36.8          | (30.2-43.4) |
| White  | 86.5              | (83.3-89.7) | 8.0                        | (5.4-10.6)  | 5.5           | (3.5-7.5)   |
| <b>Primary Language Spoken at Home</b>               |                   |             |                            |             |               |             |
| English  | 57.3              | (53.6-61.1) | 13.6                       | (11.2-16.1) | 29.0          | (25.4-32.7) |
| Spanish  | 39.2              | (30.0-48.8) | 27.9                       | (19.3-36.5) | 32.9          | (24.0-41.9) |
| Other Language                                       | 63.4              | (49.4-77.5) | 18.6                       | (6.0-31.1)  | 18.0          | (7.4-28.6)  |
| <b>Parent/Caregiver Educational Attainment</b>       |                   |             |                            |             |               |             |
| Less than HS Diploma                                 | 33.3              | (22.4-44.2) | 26.0                       | (16.2-35.8) | 40.7          | (29.9-51.6) |
| HS Diploma/GED                                       | 32.9              | (24.9-41.0) | 22.9                       | (16.5-29.3) | 44.2          | (35.5-52.8) |
| Some College/Technical School/<br>Associate's Degree | 41.7              | (34.7-48.6) | 20.2                       | (14.2-26.1) | 38.2          | (31.1-45.2) |
| Bachelor's Degree or Higher                          | 77.0              | (72.7-81.2) | 8.7                        | (6.1-11.4)  | 14.3          | (10.5-18.1) |
| <b>Annual Household Income</b>                       |                   |             |                            |             |               |             |
| <\$25K   | 28.1              | (21.3-34.9) | 29.8                       | (23.1-36.5) | 42.1          | (34.8-49.4) |
| \$25K-<\$50K   | 36.9              | (28.4-45.4) | 22.2                       | (15.1-29.2) | 40.9          | (32.1-49.8) |
| \$50K-<\$75K   | 61.9              | (52.2-71.6) | 9.4                        | (4.2-14.6)  | 28.7          | (19.3-38.2) |
| \$75K-<\$100K  | 80.7              | (74.3-87.0) | 7.1                        | (3.8-10.4)  | 12.2          | (6.3-18.0)  |
| \$100K+  | 86.9              | (81.8-92.1) | 4.2                        | (1.7-6.8)   | 8.8           | (4.1-13.6)  |
| <b>Federal Household Poverty Level</b>               |                   |             |                            |             |               |             |
| Below FPL  | 30.8              | (23.6-38.0) | 25.5                       | (19.0-13.9) | 43.8          | (36.1-51.4) |
| 100-199% FPL   | 37.7              | (29.7-45.7) | 24.0                       | (17.0-31.0) | 38.3          | (29.9-46.6) |
| 200-299% FPL   | 62.3              | (52.5-72.1) | 13.2                       | (5.8-20.6)  | 24.5          | (16.1-33.0) |
| 300-399% FPL   | 76.6              | (68.6-84.7) | 6.3                        | (3.1-9.6)   | 17.1          | (9.3-24.8)  |
| 400% FPL and Above                                   | 82.7              | (77.7-87.8) | 7.0                        | (4.2-9.8)   | 10.3          | (5.8-14.8)  |

NOTES: Parent/caregiver educational attainment is the highest level of education between the mother, father, or respondent, if not the mother or the father. Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.2** presents data on the marital status of parents and caregivers who lived with their children. At the time of the survey, 54.9% of Boston children lived with parents or caregivers who were currently married. Lower percentages of Asian, Black, and Latino children's parents or caregivers were currently married than White children's parents or caregivers. A lower percentage of children who lived in a primarily Spanish-speaking home had parents or caregivers that were currently married than children in primarily English-speaking home or homes where the primary language was not English or Spanish. A higher percentage of children with a parent or caregiver that had a bachelor's degree or higher educational attainment lived with parents or caregivers that were currently married than all other educational attainment levels. A higher percentage of children living in households with incomes at or above 400% of the federal poverty level (FPL) lived with parents or caregivers that were currently married than all groups except those in the 300-399% of FPL category.

## Housing Status and Stability among Boston Children

This section provides data from the BSCH on family homeownership, the number of times children have moved, and the number of children in families that live in public housing or receive rental assistance. For children, housing is shelter. But housing has more subtle meanings in relation to child health as well: it is also a measure of how much wealth and, thus, access to resources a family has, and it is the most important component of the physical and social environment in which child health and development is shaped [7, 8, 9, 10].

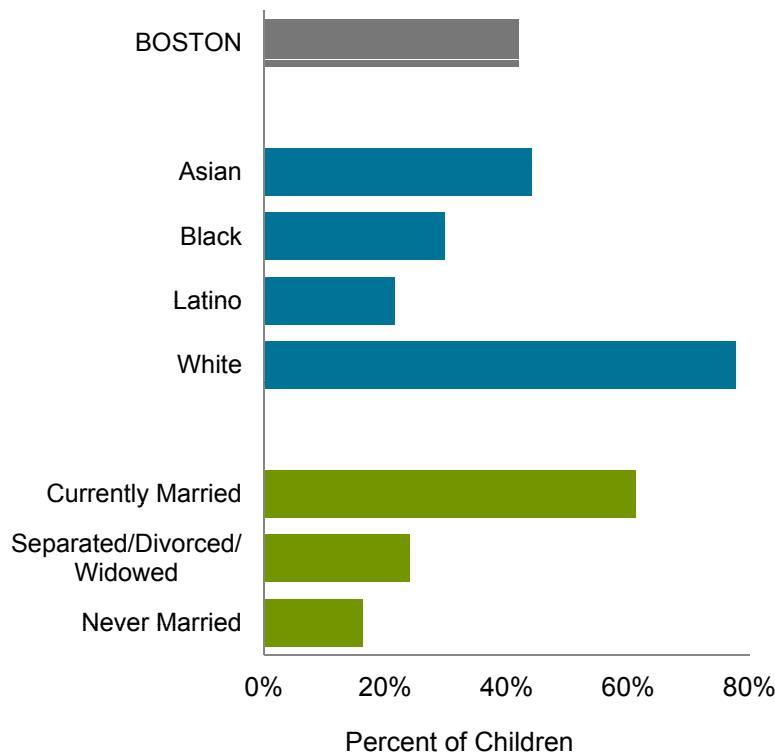
Children living in homes that are owned by their families perform better in math and reading, and are at less risk for behavioral problems, even when controlling for factors such as socioeconomic status [7]. Residential stability; the quality of the physical and social home environment, defined by the presence of safe structures and materials, healthy air quality, the presence of caring and responsible adults, and a lack of overcrowding or disruptive noise; and neighborhood conditions are important correlates of homeownership that drive the association between family homeownership and children's learning and mental health [9]. In fact, in research models that control for these three factors, no relationship is seen between homeownership and child outcomes [9]. Children who live in homes that are owned by their families tend to live in higher quality homes and neighborhoods than children who live in homes that are rented, which may explain the link between homeownership and child outcomes [7, 9]. In the United States, homeownership is the primary way to accumulate wealth and is also often a marker of social mobility within and across generations, as children inherit their parents' property [10]. Poverty and discrimination, both institutional and interpersonal, often limit a family's housing options [8]. Thus housing and homeownership are part of the complex web of social and environmental factors impacted by discrimination that influence child health and wellness [8]. Figure 3.3 presents data on children who lived in homes owned by their parent or caregiver.

Frequent change of residence, or residential mobility, is associated with adverse health, educational, emotional, and behavioral health outcomes in children [11, 12]. Residential mobility is often accompanied by children changing schools, which can disrupt the learning process and have serious implications for academic success [12]. Members of racial minority groups and lower income populations are more likely to move than their White, higher-income counterparts [12]. This can be explained, in part, by the reality that higher percentages of low-income families and Black and Latino families are renters compared to White and higher income families, while a higher percentage of White and high-income families own homes [12]. Increasing the potential for disruption to a child's life, low-income moves are less likely to be for positive reasons and in some cases can lead to homelessness [11, 12]. Figure 3.4 presents data on the number of times children in Boston had moved at the time of the survey.

Housing assistance and residence in public housing developments reduce a family's rent burden, allowing household resources to be allocated to other expenses that could benefit a child's development [13]. According to the BSCH, about 25% of Boston children lived in households that received housing assistance (in the form of a voucher or other subsidy through the state or federal government), or lived in a development owned by the Boston Housing Authority. Among children in fair or poor health, two out of five (40%) resided in households receiving rental assistance. The greater frequency with which children in fair or poor health lived in this type of housing lends further support the body of research that links poverty and housing to child health. Figure 3.5 presents the distribution of Boston children that lived in public housing or were receiving rental assistance at the time of the survey.

## Health of Boston's Children

**Figure 3.3 Children Who Lived in Homes Owned (Not Rented) by Parent/Caregiver, Ages 0-17**



|                                 |                   |
|---------------------------------|-------------------|
| BOSTON                          | 42.0% (38.9-45.2) |
| Race/Ethnicity of Child         |                   |
| Asian                           | 44.1% (25.7-62.5) |
| Black                           | 29.7% (24.5-35.0) |
| Latino                          | 21.5% (16.3-26.6) |
| White                           | 77.7% (73.4-82.0) |
| Parent/Caregiver Marital Status |                   |
| Currently Married               | 61.2% (56.8-65.5) |
| Separated/Divorced/Widowed      | 23.9% (17.4-30.5) |
| Never Married                   | 16.3% (11.6-21.0) |

NOTE: Data for multiracial/other race are not shown.

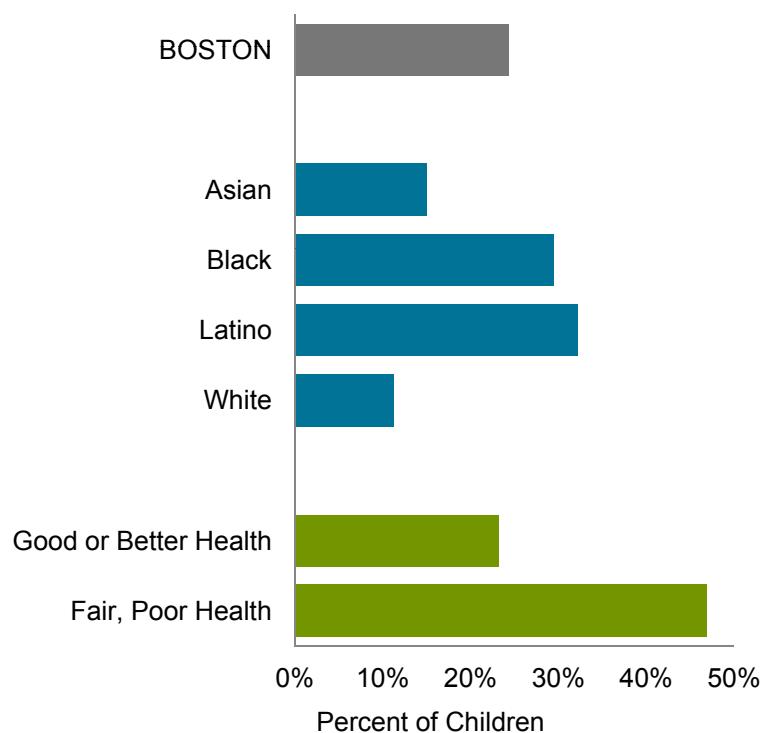
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.3** presents data on children who lived in homes owned by their parent or caregiver. At the time of the BSCH, 42.0% of Boston children lived in homes that were owned by their parents or caregivers. A higher percentage of White children lived in homes that were owned by their parents or caregivers than children in other racial and ethnic groups. A lower percentage of children with parents or caregivers not currently married lived in homes that were owned by their parent or caregiver.

## Housing Status and Stability among Boston Children

**Figure 3.4 Children Who Had Moved Residences More than Twice, Ages 0-17**



NOTES: General health for children is indicated as “good or better” where respondents reported them to be in “excellent”, “very good”, or “good” health. Data for multiracial/other race are not shown.

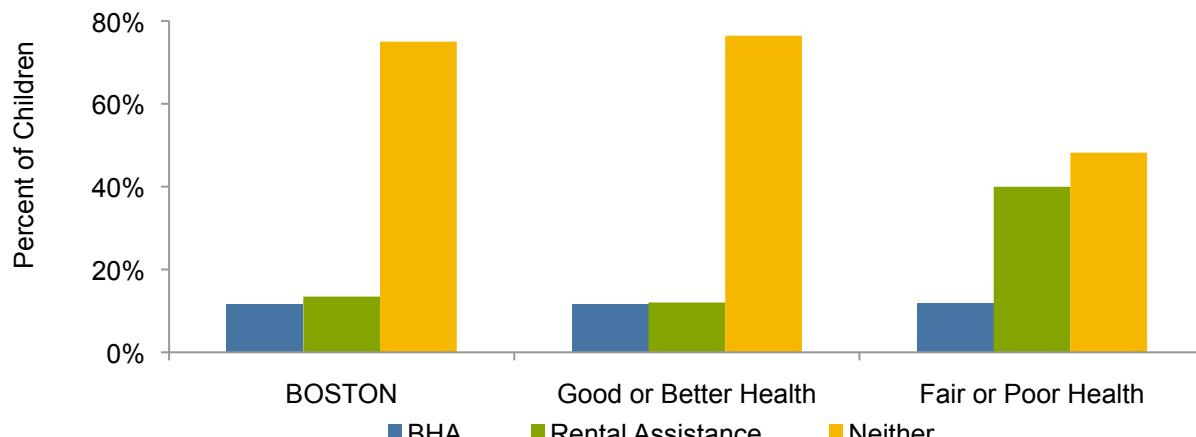
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.4** presents data on children who had moved more than twice by racial and ethnic group and child health status. Twenty-four percent of Boston children had moved more than twice in their lifetimes. A higher percentage of Black and Latino children had moved more than twice than White children. A higher percentage of children in fair or poor general health had moved more than twice than children in good or better general health.

## Health of Boston's Children

**Figure 3.5 Children Who Lived in Public Housing or Households Receiving Rental Assistance by Child General Health, Ages 0-17**



NOTES: General health for children is indicated as "good or better" where respondents reported them to be "excellent", "very good", or "good." Children whose parents/caregivers reported being BHA residents (BHA) live in a building owned by the Boston Housing Authority, whereas children whose parents/caregivers reported receiving rental assistance are part of a household that receives "Section 8" or another form of rental assistance.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.5** presents data on children who were living in public housing or were receiving rental assistance at the time of the BSCH by child health status. In Boston, 11.6% of children lived in public housing and 13.5% lived in households that were receiving rental assistance. A higher percentage of children in good or better health lived in neither BHA housing nor housing that received rental assistance than children in fair or poor health. A higher percentage of children in fair or poor health than children in good or better health lived in a household that received rental assistance.

## Life at Home

This section provides data on the routine lives of Boston children at home. Included is information about the frequency with which families share meals, the amount of time children spend sleeping, their screen time, their consumption of sugary beverages, and their exposure to tobacco smoke at home. Also presented are data on exposure to a defined set of “adverse childhood experiences” (ACEs) known to affect development and long-term health. These factors have the potential to either promote or detract from children’s health and resilience.

Family dinners foster social exchanges that may benefit children of all ages. Family meals have been associated with healthier eating habits including increased intake of fruits, vegetables and dairy and decreased consumption of sugary beverages among children and adolescents [14, 15]. Some past studies indicated that high-risk behaviors, such as violence and tobacco, alcohol, and drug use, decrease with frequency of family dinners. More recent research, however, suggests that these longer term outcomes have been overstated [16, 17]. Dinnertime does provide an opportunity for parents and caregivers to connect with their children, which can be beneficial to children and families. Figure 3.6 presents BSCH data on the frequency with which Boston children ate meals with their families over the course of a week.

Sleep is an important factor in child and adolescent development. Children and adolescents who regularly get adequate levels of sleep are more likely to be physically active and perform well in school [17]. Children who sleep too little are more likely to be overweight, have lower learning capacity, and have increased emotional and behavioral difficulties than children who sleep more [18, 19, 20, 21]. In fact, some recent studies suggest that some children presumed to have ADD or ADHD may actually be suffering the effects of sleep deprivation [22]. Figure 3.7 presents data on the number of hours of sleep children were reported to get during a typical school night.

Increased television exposure and exposure to other electronic media among children, often referred to as screen time, is associated with poor dietary habits and fitness practices and childhood obesity [23]. In addition to the impact of increased screen time on fitness and nutrition, children and adolescents are increasingly exposed to images of violence and sexual references through television programming, advertising, and video games, which has been shown to impact sexual initiation and health, aggressive feelings and behaviors, social isolation, substance use, and emotional health [24]. The American Academy of Pediatrics recommends that infants and children less than two years old not be exposed to electronic media and that children older than age two be exposed to no more than 1-2 hours per day [25]. Figure 3.8 presents data on the amount of screen time that Boston children were reported to get during the week.

Childhood obesity rates in the United States have more than tripled over the past 30 years [26]. As discussed above, this could be the result of a shift from more active lifestyles to more sedentary ones, the influence of food and beverage advertising on children’s attitudes and dietary choices, or most likely, a combination of both [24, 27]. Limited access to healthy, affordable foods, and greater access to and availability of energy dense foods and sugary beverages are additional factors influencing rates of childhood obesity [28, 29]. Research shows that children today get an average of 10-15% of their total daily calorie intake from sugary beverages, and that schools are a very limited source of these beverages [29]. This suggests that the home environment is a likely setting in which most consumption of sugary beverages takes place among children [30]. Figure 3.9 presents data on consumption of sugary beverages among Boston children.

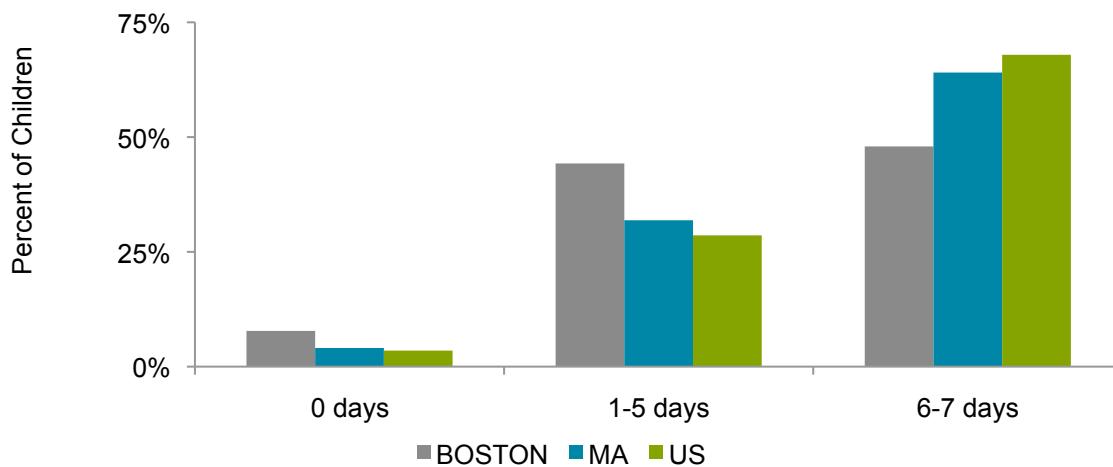
Prenatal and passive childhood exposure to tobacco smoke in the home has been associated with multiple adverse health outcomes, including in the short term, low birth weight and birth complications, sudden infant death syndrome (SIDS), and throughout childhood and into adulthood, asthma and other respiratory problems, behavior problems, sleep difficulties, infections, cardiovascular effects, and increased risk for cancer in adulthood [31].

## **Health of Boston's Children**

Measures prohibiting smoking in public settings have been effective in increasing awareness among adults of the dangers of tobacco exposure for children, shifting attitudes towards smoking, and reducing smoking rates among adults [32]. Research has also shown that interventions with parents and caregivers work to reduce parental smoking and children's exposure to tobacco smoke [33]. Effective September 30, 2012, the Boston Housing Authority became the first large housing authority in the country to implement a no smoking policy in all BHA units and common areas [34]. The regulation was implemented the month prior to completion of the BSCH and therefore we anticipate that BSCH data can be used as a baseline to assess the impact of the policy on smoking rates in BHA households with children. Figure 3.10 presents percentages of Boston children who lived in households where someone smokes tobacco.

As discussed throughout this report, childhood experiences, including negative experiences, can have a lasting impact on child health and well-being. Adolescents and adults with history of ACEs (among them household financial strife, parental death or incarceration, household substance abuse, and/or violence in the home or neighborhood) are at increased risk of developing a wide range of health problems [35]. The principal study relating to ACEs found that children with exposure to multiple ACEs or with long-term exposure to one kind of ACE were likely to have multiple health risk factors later in life [2]. Study participants who had experienced three or more ACEs, compared to those who had experienced none, were at increased risk for alcoholism, drug abuse, and depression; more likely to have  $\geq 50$  sexual partners; and more likely to have a sexually transmitted disease [2]. ACEs have a strong influence on mental health, reproductive health, smoking, alcohol consumption and drug abuse in adults [2, 36]. ACEs also increased the risk of heart disease, chronic lung disease, liver disease, suicides and HIV/STDs [36]. There has been much focus among educators and clinicians on increasing resilience in children and youth confronted with adversity [36]. While important, these efforts should not be seen as a substitute for efforts to reduce the risk of exposure to adverse experiences in the environments in which children grow and develop. Figures 3.11 through 3.13 present data on ACEs among Boston children.

**Figure 3.6 Days Per Week Child's Family Ate a Meal Together,  
Children Ages 0-17**



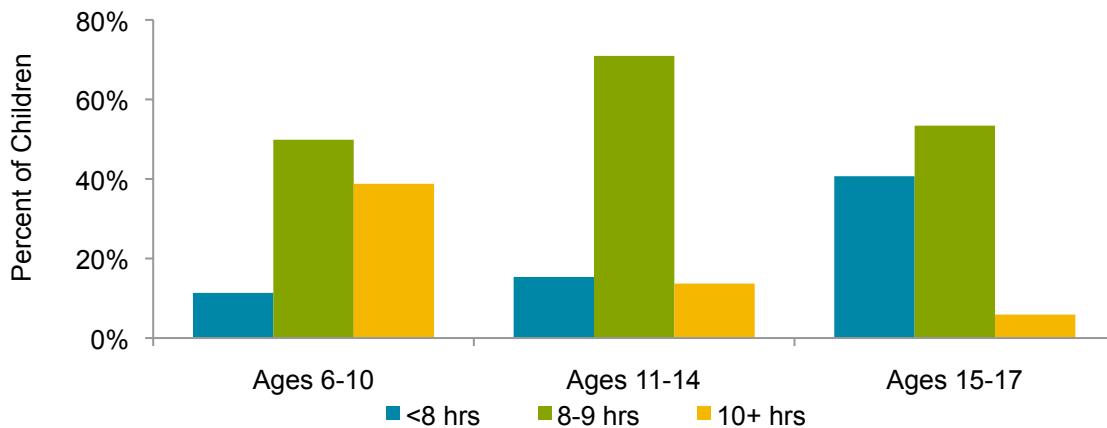
|               | 0 days         | 1-5 days          | 6-7 days          |
|---------------|----------------|-------------------|-------------------|
| BOSTON        | 7.8% (5.8-9.8) | 44.3% (40.9-47.6) | 48.0% (44.6-51.4) |
| Massachusetts | 4.1% (2.7-5.4) | 31.9% (29.1-34.7) | 64.1% (61.2-67.0) |
| United States | 3.5% (3.2-3.8) | 28.6% (27.9-29.2) | 67.9% (67.3-68.6) |

DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.6** presents data on days per week that children's families ate a meal together. Slightly less than half (48%) of Boston children were from families who reported eating a meal together 6-7 days per week. This percentage was lower than that for children in all of Massachusetts and the United States.

**Figure 3.7 Usual Hours of Sleep Per School Night,  
Children Ages 6-17**

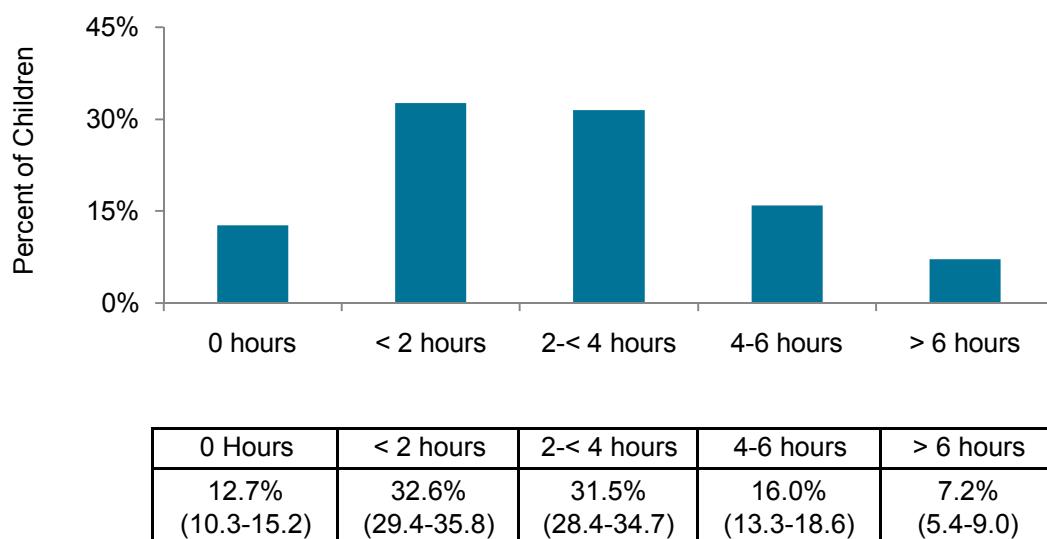


DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.7** presents data on usual hours of sleep children had per school night. Among Boston children ages 6-10 years, approximately half slept 8-9 hours per school night. Among children ages 11-14 and 15-17 years, 70.9% and 53.4%, respectively, slept 8-9 hours. Two out of every five children ages 15-17 years slept less than 8 hours per school night. There is some debate about sleep guidelines for children [37], but as a point of reference, the National Sleep Foundation recommends that children ages 5-10 years old receive 10 or more hours per sleep every 24 hours and for children ages 11-17, between 8.5 and 9.25 hours every 24 hours [38].

**Figure 3.8 Time Spent on Average Weekday Watching TV/Videos or Playing Video Games, Children Ages 0-17**

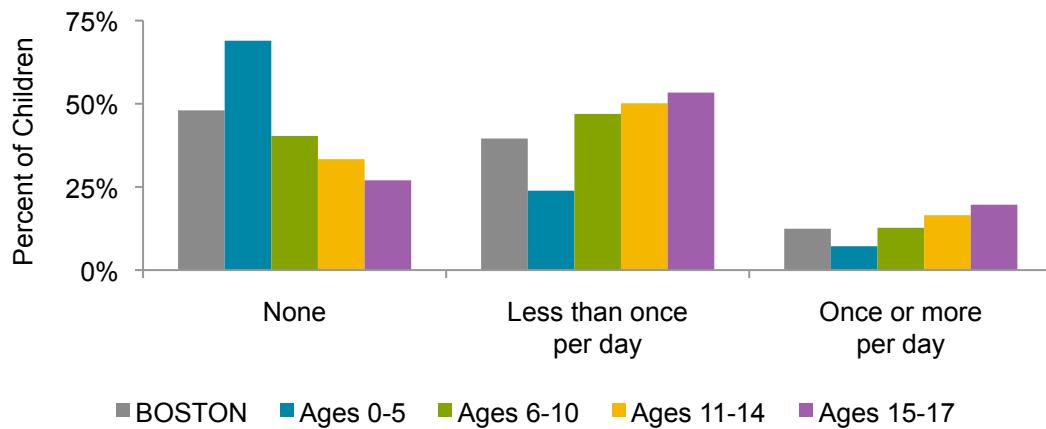


DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.8** presents data on amount of screen time among Boston children. In Boston, only 12.7% of children did not watch any television or videos or play video games on weekdays. Approximately a third spent less than two hours daily with these media, while almost an additional third spent 2 to fewer than 4 hours on an average weekday. As referenced previously, the American Academy of Pediatrics recommends that infants and children less than two years old not be exposed to electronic media and that children older than age two be exposed to no more than 1-2 hours per day [25].

**Figure 3.9 Average Daily Sugar-Sweetened Beverages Consumed, Ages 0-17**



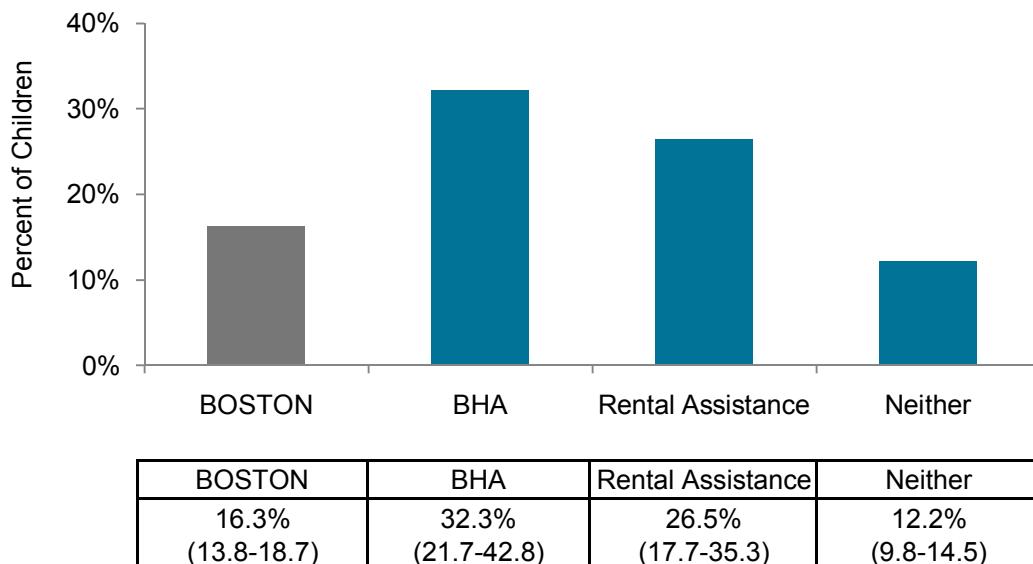
NOTE: Sugar-sweetened beverages include soda/pop and sweetened fruit drinks such as Kool-aid, cranberry juice cocktail, or lemonade. Not included are 100% fruit juice or diet soda/pop.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.9** presents data on sugar-sweetened beverage (SSB) consumption among Boston children. Citywide, 12.4% of children drank one or more SSBs per day. Nearly one in five children (19.7%) ages 15-17 years consumed one or more SSBs daily. A higher percentage of children ages 15-17 years drank SSBs once or more daily than children ages 0-5 years.

**Figure 3.10 Children Who Lived in Households Where Someone Smoked Tobacco, Ages 0-17**



NOTE: Children whose parents/caregivers reported being BHA residents (BHA) live in a building owned by the Boston Housing Authority, whereas children whose parents/caregivers reported receiving rental assistance are part of a household that receives "Section 8" or another form of rental assistance.

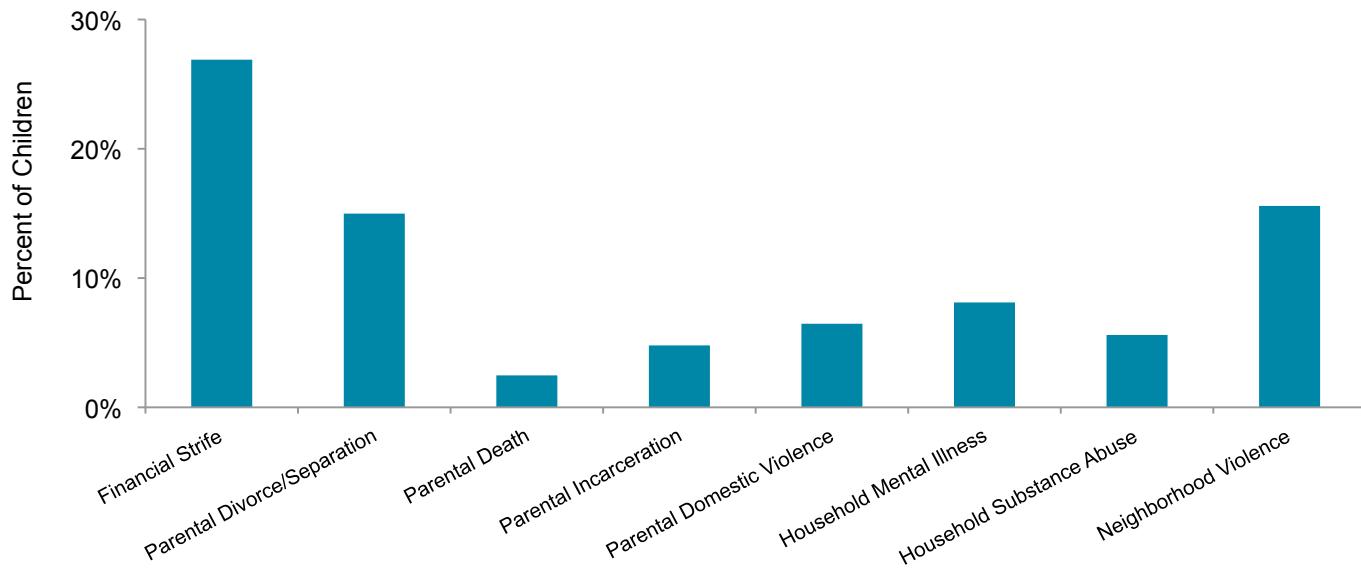
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.10** presents the percentage of children who lived in households where at least one person smoked tobacco by housing type. At the time of the BSCH, 16.3% of Boston children lived with a household member who smoked tobacco. Higher percentages of children in public housing or in a household that was receiving rental assistance also lived in a smoking household than children who lived in households that did not receive governmental housing assistance. As noted above, recent policy change is expected to reduce the percentage of children in BHA housing who live with an adult smoker.

## Health of Boston's Children

**Figure 3.11 Adverse Childhood Experiences (ACEs),  
Children Ages 0-17**



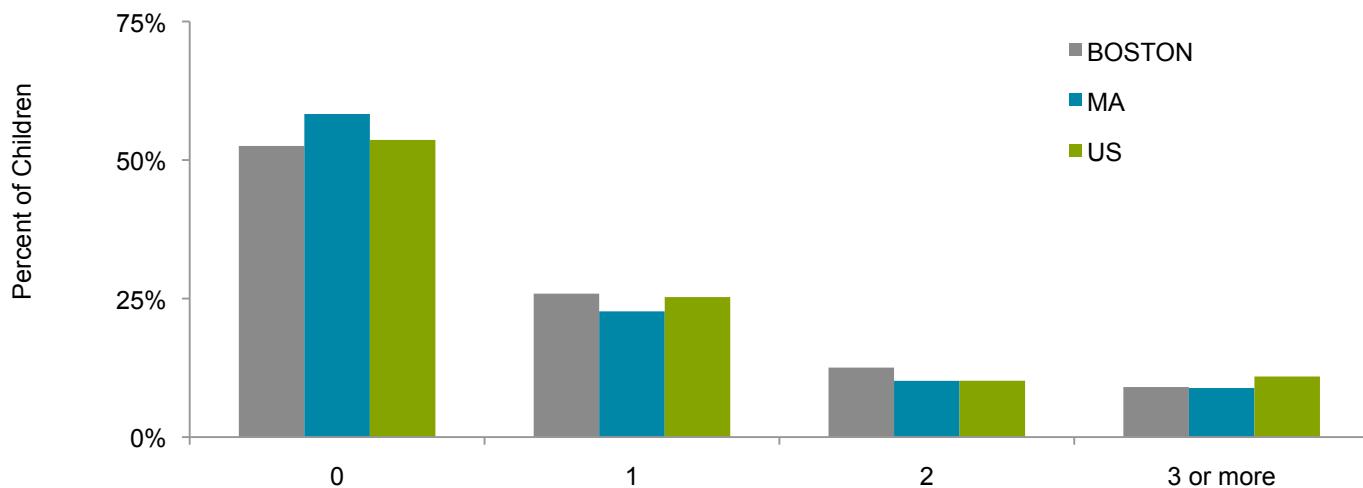
| Financial Strife     | Parental Divorce/<br>Separation | Parental Death    | Parental Incarceration | Parental Domestic Violence | Household Mental Illness | Household Substance Abuse | Neighborhood Violence |
|----------------------|---------------------------------|-------------------|------------------------|----------------------------|--------------------------|---------------------------|-----------------------|
| 26.9%<br>(23.8-30.0) | 15.0%<br>(12.6-17.4)            | 2.5%<br>(1.7-3.3) | 4.8%<br>(3.3-6.2)      | 6.5%<br>(4.6-8.3)          | 8.1%<br>(6.3-9.9)        | 5.6%<br>(4.4-6.8)         | 15.6%<br>(13.0-18.2)  |

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.11** presents data on how many children have experienced ACEs by type of ACE. Almost half of all children had endured ACEs (data not shown). Among the experiences defined as ACEs, financial strife was most frequently experienced by children in Boston as reported by parents or caregivers.

**Figure 3.12 Total Number of Adverse Childhood Experiences (ACEs), Children Ages 0-17**



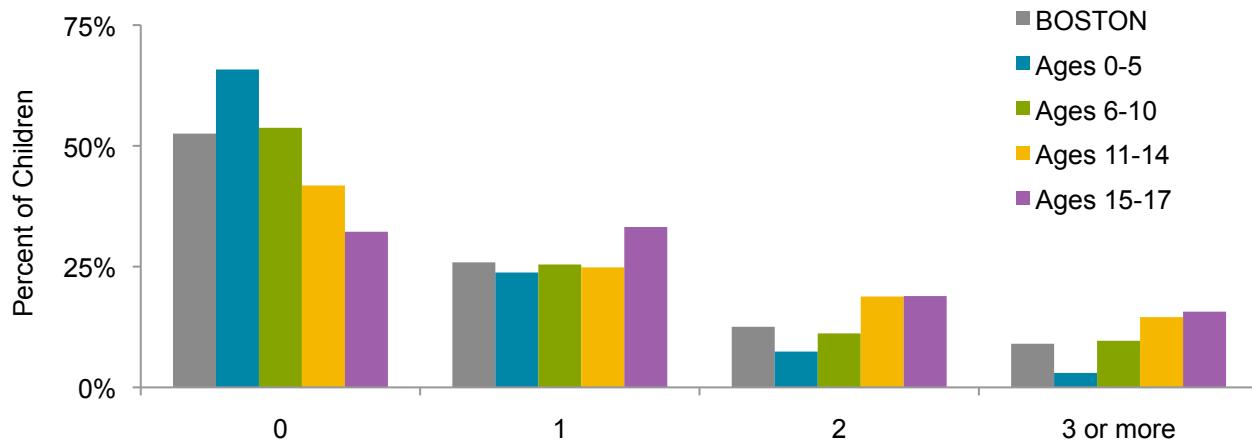
DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.12** presents data on the frequency of ACEs among Boston children compared with children in Massachusetts and the United States as a whole. In Boston, approximately a quarter of all children have experienced at least one ACE, while almost one in ten (9.0%) children have experienced three or more ACEs in their lifetime. These percentages were similar to those found in Massachusetts overall and in the United States.

## Health of Boston's Children

**Figure 3.13 Total Number of Adverse Childhood Experiences (ACEs), Children Ages 0-17**



|            | 0                 | 1                 | 2                 | 3 or more        |
|------------|-------------------|-------------------|-------------------|------------------|
| BOSTON     | 52.5% (49.0-56.0) | 25.9% (22.8-29.0) | 12.5% (10.1-15.0) | 9.0% (7.0-11.0)  |
| Ages 0-5   | 65.8% (60.2-71.4) | 23.8% (18.6-29.0) | 7.4% (4.2-10.7)   | 3.0% (1.4-4.6)   |
| Ages 6-10  | 53.7% (46.7-60.8) | 25.4% (19.3-31.6) | 11.2% (6.8-15.5)  | 9.6% (5.7-13.6)  |
| Ages 11-14 | 41.8% (34.6-49.0) | 24.8% (18.3-31.4) | 18.8% (12.5-25.1) | 14.5% (9.1-20.0) |
| Ages 15-17 | 32.2% (25.0-39.5) | 33.2% (25.7-40.7) | 18.9% (11.9-25.9) | 15.7% (8.9-22.4) |

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.13** presents the frequency of ACEs among Boston children by age group. A similar percentage of children experienced one ACE across all age groups. Higher percentages of children ages 6-10, 11-14, and 15-17 experienced three or more ACEs than children ages 0-5.

## Infancy and Early Childhood

This section presents data on factors that impact the health and well-being of infants and very young children and their families, including breastfeeding, participation in infant home visiting programs for new parents, and early child care. Full-term birth (and healthy birth weight, which is closely associated with full-term birth) and breastfeeding are predictors of healthy child development and set the stage for children to reach their full health and developmental potential [39, 40].

Premature birth is an important predictor of child health. Pre-term infants are at increased risk for infant mortality, as well as increased risk for developmental delays, long term disabilities, and chronic conditions that may impact the rest of their childhood and lives [39]. Figure 3.14 provides data on Boston children born prematurely.

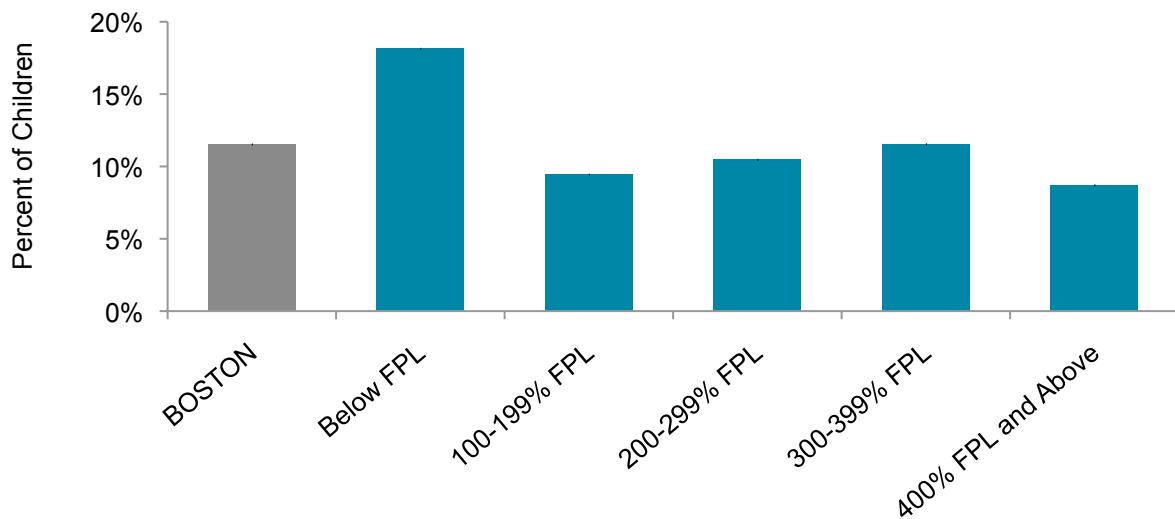
Breastfeeding is widely recognized as the optimal method of infant feeding, providing unmatched health benefits to both mother and child [40]. Breastfed children, compared to formula fed children, experience short and long term benefits including lower incidence of sudden infant death syndrome (SIDS), improved oral health, more robust immune systems, optimal physical and cognitive development, lower risk of obesity in childhood and adolescence, lower risk of type 1 diabetes, and lower rates of asthma, eczema and allergic disorders [40]. Mothers who breastfeed also experience benefits such as improved recovery after birth, lower long term risk of reproductive cancers, and healthy attachment formation with their infant [40]. Figure 3.15 presents data on the ages up to which Boston children were breastfed.

Infant home visiting programs build parent or caregiver capacity to identify the needs of their infants and young children and respond to them appropriately. These programs have been shown to promote healthy development in early childhood that translates to improved health and development over the life course [41, 42]. Figure 3.16 present data on parent and caregiver participation in new parent programs.

According to the Boston Survey of Children's Health, more than half of parents and caregivers in Boston rely on regular childcare from a non-relative, which is higher than the percentage nationally. Studies on high quality childcare programs have shown that positive childcare experiences can promote healthy cognitive and social development, including improvements in school readiness, scholastic achievement, and social-behavioral functioning throughout their school-aged years and beyond [43, 44, 45]. Figure 3.17 presents data on children who received childcare from a non-relative.

## Health of Boston's Children

**Figure 3.14 Children Born Prematurely by Federal Household Poverty Level, Ages 0-17**



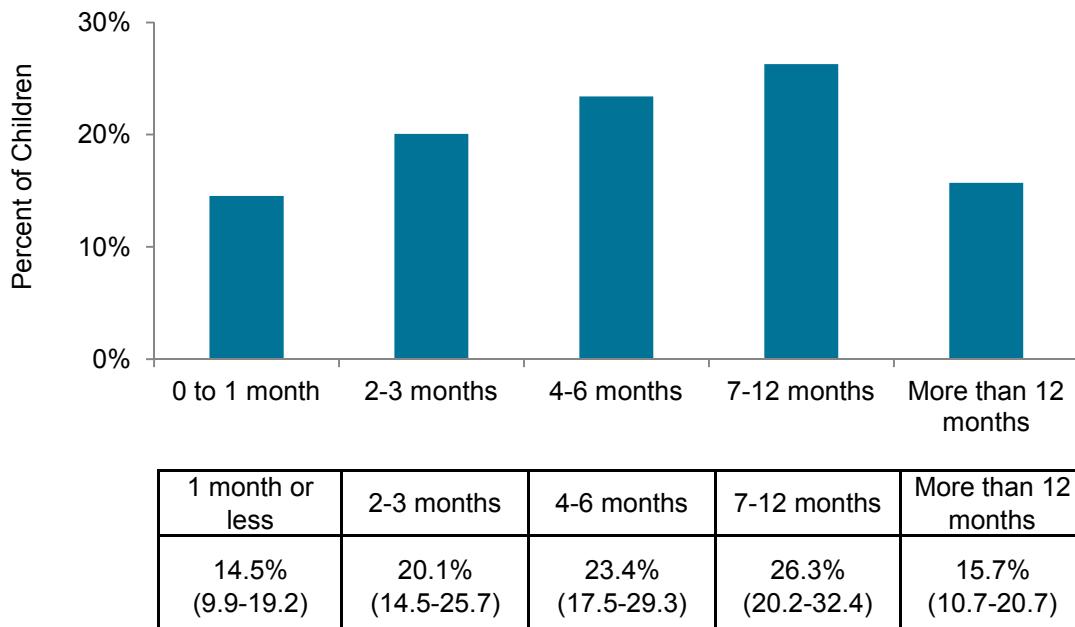
NOTE: Prematurity is defined as more than three weeks before due date.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.14** presents data on prematurity by household income in relation to the FPL. In Boston, approximately twelve percent of children were born prematurely, which is defined as more than three weeks before the due date. Additionally, a higher percentage of children living in a household with annual household income below FPL were born prematurely than children living in a household with annual household income 400% FPL and above.

**Figure 3.15 Age at Which Breastfeeding Stopped Among Children Who Were Fed Breast Milk, Ages 0-5**



NOTE: Children still being breastfed were not included.

DATA SOURCE: Boston Survey of Children's Health, 2012

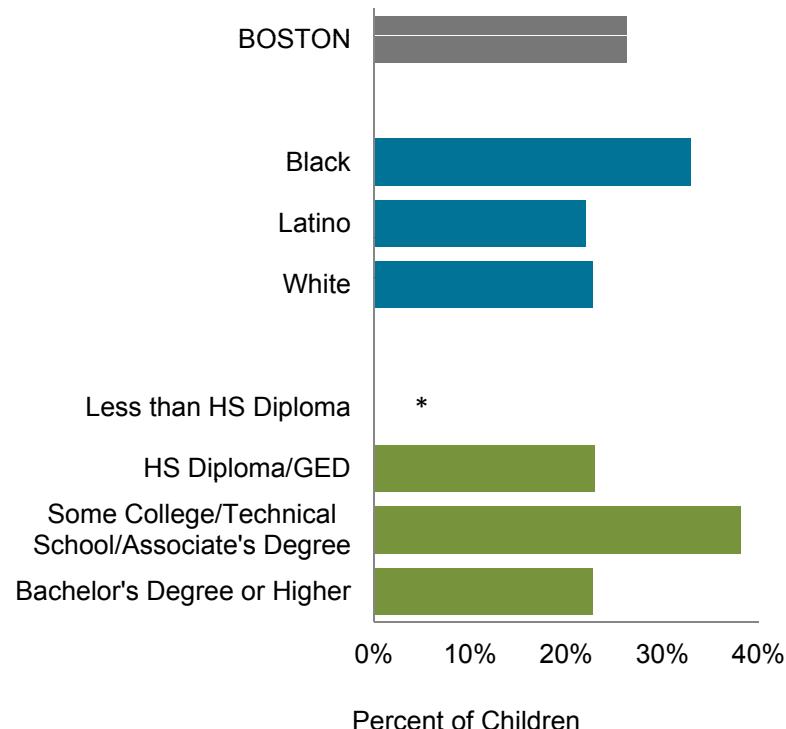
DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.15** presents data on the age at which breastfeeding stopped among children who were fed breast milk. In Boston, 81.2% of children under the age of 6 years were fed breast milk for some period of time (data not shown). Among children ages 0 to 5 who were ever fed breast milk, around one in two children stopped breastfeeding between the ages of 4 to 12 months. A higher percentage of children stopped breastfeeding at the age of 7 to 12 months than children who were 1 month of age or less.

Among Black, Latino, and White children, the percentages of children that were fed breast milk at some point were similar (data not shown). A lower percentage of children with special health care needs were fed breast milk at some point than children without any special health care needs (data not shown).

## Health of Boston's Children

**Figure 3.16 Children Whose Parent/Caregiver Participated in an Infant Home Visiting Program, Ages 0-3**



|  |                   |
|--|-------------------|
| BOSTON   | 26.3% (20.2-32.4) |
| Race/Ethnicity of Child                          |                   |
| Black  | 32.9% (16.8-49.1) |
| Latino   | 22.0% (11.0-32.9) |
| White  | 22.7% (15.9-29.6) |
| Parent/Caregiver Educational Attainment          |                   |
| Less than HS Diploma                             | *                 |
| HS Diploma/GED                                   | 22.9% (6.6-39.2)  |
| Some College/Technical School/Associate's Degree | 38.2% (21.9-54.5) |
| Bachelor's Degree or Higher                      | 22.8% (15.8-29.7) |

\*Insufficient sample size

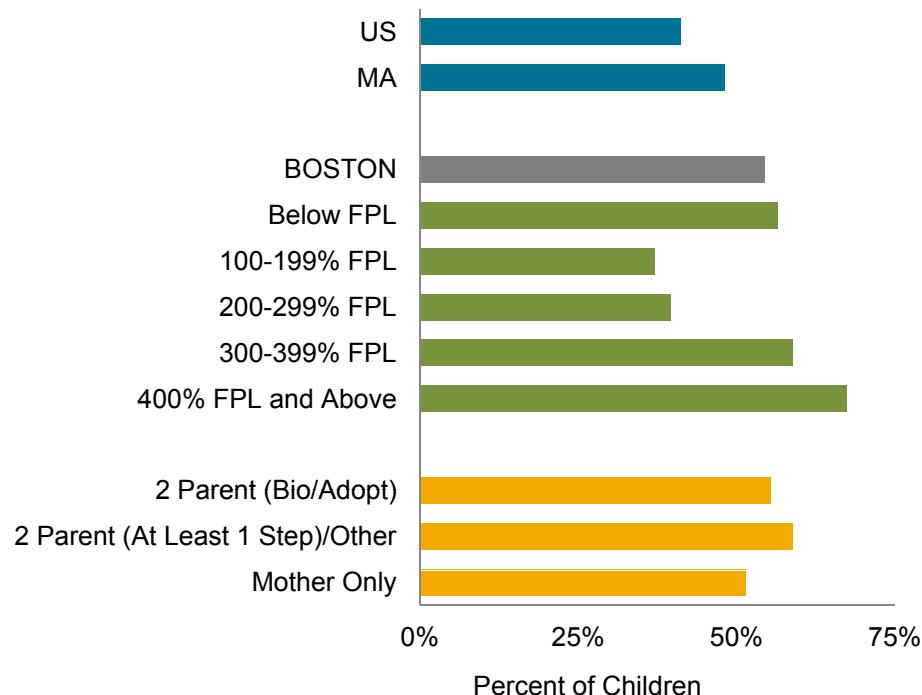
NOTES: Data for Asian children are not presented due to insufficient sample size. Data for multiracial/other race are not shown. Parent/caregiver educational attainment is the highest level of education between the mother, father, or respondent, if not the mother or the father.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.16** presents data on children whose parents or caregivers participated in an infant home visiting program. In Boston, 26.3% of children under four years of age had parents or caregivers who received professional help at home in preparation for the new baby or help to take care of the new baby and mother. Percentages among different racial and ethnic groups and by parent/caregiver educational attainment levels were similar.

**Figure 3.17 Children Who Received Care  
10+ Hours/Week from a Non-Relative, Ages 0-5**



|                                  |                   |
|----------------------------------|-------------------|
| United States                    | 41.2% (40.0-42.4) |
| Massachusetts                    | 48.1% (42.6-53.6) |
| BOSTON                           | 54.3% (48.6-60.1) |
| Federal Household Poverty Level  |                   |
| Below FPL                        | 56.5% (43.3-69.8) |
| 100-199% FPL                     | 37.0% (23.6-50.4) |
| 200-299% FPL                     | 39.6% (22.1-57.1) |
| 300-399% FPL                     | 58.9% (45.2-72.6) |
| 400% FPL and Above               | 67.3% (58.1-76.6) |
| Family Structure                 |                   |
| 2 Parent (Biological/Adoptive)   | 55.3% (48.2-62.5) |
| 2 Parent (At Least 1 Step)/Other | 58.8% (38.7-78.9) |
| Mother Only                      | 51.4% (40.8-62.0) |

DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 3.17** presents data on children that received 10 or more hours of care per week from a non-relative. Slightly more than half (54.3%) of all Boston children under age six received 10 or more hours of care per week from a non-relative. This percentage was higher than the United States overall. The Boston and Massachusetts percentages were similar.

A higher percentage of children living in households with household income 400% FPL and above received 10 or more hours of care per week from a non-relative than children living in households at 100% to 299% FPL. Percentages did not vary by family structure.

### **Summary: Children at Home**

Family dynamics, the physical home environment, and activities and exposures at home all shape a child's health and development. Throughout infancy and early childhood, the home is the source of a child's first and most important influences.

Family structure and parental marital status can impact family dynamics and children's experiences at home. Just over half of Boston children lived with parents or caregivers who were currently married. Higher percentages of Black and Latino children and higher percentages of children living in low income households lived in families headed by single mothers than White children and children from higher income households.

The home is the largest asset for most families and homeownership is associated with residential stability. Less than half of Boston children lived in homes owned by their parents or caregivers, with higher percentages of White children and children with married parents or caregivers living in owned homes than Asian, Black, or Latino children or children with unmarried parents or caregivers. Higher percentages of Black and Latino children and children in fair or poor general health had changed residence more than twice than White children and children in good or better general health. Children in fair or poor health were also disproportionately represented in public housing and households that received rental assistance.

Positive experiences at home can promote resilience in children, while negative experiences increase vulnerability. A lower percentage of Boston children had meals with their family than children in Massachusetts and the United States. A higher percentage of children in public housing or in households that received rental assistance lived with smokers than children whose families did not receive some sort of governmental housing assistance. Nine percent of Boston children had been exposed to three or more ACEs, which is similar to percentages for Massachusetts as a whole and the United States.

Experiences in infancy and early childhood can shape future health and development. A majority of Boston children were given breast milk in infancy and percentages were similar across racial and ethnic groups. However, a lower percentage of children with special health care needs were ever fed breast milk than children without any special health care needs. Percentages of children of parents who participated in infant home visiting programming were similar across racial and ethnic groups and different levels of parent and caregiver educational attainment. The percentage of children who received 10 or more hours of childcare per week from a non-relative was higher in Boston than in the United States overall, but similar to Massachusetts. Percentages were similar between different family structures.

References:

1. Billingsley, M. D., Golden, A. L., McMillan, J. A., Meloy, L. D., & Pendarvis, B. C. (2003). Family pediatrics report of the task force on the family. *Pediatrics*, 111, 1541-1571.
2. Felitti, M. D., Vincent, J., Anda, M. D., Robert, F., Nordenberg, M. D., Williamson, M. S., ... & James, S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the Adverse Childhood Experiences (ACE) study. *American Journal of Preventive Medicine*, 14(4), 245-258.
3. U.S. Department of Health and Human Services (2013, April). Maternal, Infant and Child Health. *Healthy People 2020*. Retrieved August 1, 2013 from <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=26>
4. Pew Research Center (2010). The Decline of Marriage and Rise of New Families. *Pew Social Trends*. Retrieved August 1, 2013 from <http://www.pewsocialtrends.org/2010/11/18/the-decline-of-marriage-and-rise-of-new-families/>
5. Schor, E. (2003). Family pediatrics: report of the task Force on the family. *Pediatrics*, 111(6), Part 2:1539-158.
6. Bzostek, S. H. & Beck A. N. (2011). Familial instability and young children's physical health. *Social Science & Medicine*, 73:2.
7. Haurin, D. R., Parcel, T. L., & Haurin, R. J. (2002). Does homeownership affect child outcomes?. *Real Estate Economics*, 30(4), 635-666.
8. Leventhal, T. & Newman, S. (2010) Housing and child development. *Children and Youth Services Review*, 32:9.
9. Mohanty, L. L., & Raut, L. K. (2009). Home ownership and school outcomes of children: evidence from the PSID child development supplement. *American Journal of Economics and Sociology*, 68(2), 465-489.
10. Krivo, L. J., & Kaufman, R. L. (2004). Housing and wealth inequality: Racial-ethnic differences in home equity in the United States. *Demography*, 41(3), 585-605.
11. Busacker, A., & Kasehagen, L. (2012). Association of residential mobility with child health: An analysis of the 2007 National Survey of Children's Health. *Maternal and Child Health Journal*, 16(1), 78-87.
12. Crowley, S. (2003). The affordable housing crisis: Residential mobility of poor families and school mobility of poor children. *Journal of Negro Education*, 72(1), 22-38.
13. National Center for Children in Poverty, Mailman School of Public Health, Columbia University (2011). Report: Rent Burden, Housing Subsidies and the Well-being of Children and Youth. *National Center for Children in Poverty*. Retrieved on August 1, 2012 from [http://www.nccp.org/publications/pdf/text\\_1043.pdf](http://www.nccp.org/publications/pdf/text_1043.pdf) .
14. Videon T.M. & Manning C.K. (2003). Influences on adolescent eating patterns: The importance of family meals. *Journal of Adolescent Health*. 32:365–373.
15. Andaya, A.A., Arredondo E.M., Alcaraz, J.E., Lindsay, S.P.& Elder J.P. (2011). The Association between family meals, TV viewing during meals, and fruit, vegetables, soda, and chips intake among Latino children. *Journal of Nutrition Education and Behavior*, 43:5.
16. Fulkerson, J. A., Story, M., Mellin, A., Leffert, N., Neumark-Sztainer, D., & French, S. A. (2006). Family dinner meal frequency and adolescent development: Relationships with developmental assets and high-risk behaviors. *Journal of Adolescent Health*, 39(3), 337-345.
17. Musick, K., & Meier, A. (2012). Assessing causality and persistence in associations between family dinners and adolescent well-being. *Journal of Marriage and Family*, 74(3), 476-493.
18. Stone, M. R., Stevens, D., & Faulkner, G. E. (2012). Maintaining recommended sleep throughout the week is associated with increased physical activity in children. *Preventive Medicine*.
19. Dewald, J. F., Meijer, A. M., Oort, F. J., Kerkhof, G. A., & Bögels, S. M. (2010). The influence of sleep quality, sleep duration and sleepiness on school performance in children and adolescents: a meta-analytic review. *Sleep medicine reviews*, 14(3), 179-189.

## Health of Boston's Children

20. Meltzer, L. J., & Mindell, J. A. (2006). Sleep and sleep disorders in children and adolescents. *Psychiatric Clinics of North America*, 29(4), 1059-1076.
21. Gregory, A. M., & Sadeh, A. (2012). Sleep, emotional and behavioral difficulties in children and adolescents. *Sleep Medicine Reviews*, 16(2), 129-136.
22. Owens, J. A. (2005). The ADHD and sleep conundrum: a review. *Journal of Developmental & Behavioral Pediatrics*, 26(4), 312-322.
23. Siddarth, D. (2013). Risk Factors for Obesity in Children and Adults. *Journal of Investigative Medicine*.
24. Ray, M., & Jat, K. R. (2010). Effect of electronic media on children. *Indian pediatrics*, 47(7), 561-568.
25. American Academy of Pediatrics (2013). Media and Children. *AAP Health Initiatives*. Retrieved August 1, 2013 from <http://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Pages/Media-and-Children.aspx>
26. Ogden, C. L., Carroll, M. D., Kit, B. K., & Flegal, K. M. (2012). Prevalence of obesity and trends in body mass index among US children and adolescents, 1999-2010. *JAMA: the journal of the American Medical Association*, 307(5), 483-490.
27. Bar-on, M.E. (2000). The effects of television on child health: implications and recommendations. *Archives of Disease in Childhood*. 83(4).
28. Ludwig, D. S., Peterson, K. E., & Gortmaker, S. L. (2001). Relation between consumption of sugar-sweetened drinks and childhood obesity: a prospective, observational analysis. *The Lancet*, 357(9255), 505-508.
29. World Health Organization (2013). Obesity and Overweight. *WHO Media Centre*. Retrieved August 1, 2013 from <http://www.who.int/mediacentre/factsheets/fs311/en/index.html>
30. Wang, Y. C., Bleich, S. N., & Gortmaker, S. L. (2008). Increasing caloric contribution from sugar-sweetened beverages and 100% fruit juices among US children and adolescents, 1988–2004. *Pediatrics*, 121(6), e1604-e1614.
31. Treyster, Z., & Gitterman, B. (2011). Second hand smoke exposure in children: environmental factors, physiological effects, and interventions within pediatrics. *Reviews on Environmental Health*, 26(3), 187-195.
32. McMillen, R. C., Winickoff, J. P., Klein, J. D., & Weitzman, M. (2003). US adult attitudes and practices regarding smoking restrictions and child exposure to environmental tobacco smoke: changes in the social climate from 2000–2001. *Pediatrics*, 112(1), e55-e60.
33. Klerman, L. V. (2004). Protecting children: reducing their environmental tobacco smoke exposure. *Nicotine & Tobacco Research*, 6 (Suppl 2), S239-S252.
34. Rocheleau, Matt (2012, September 28). Boston set to become largest city in US to ban smoking in public housing. *The Boston Globe*. Retrieved from [http://www.boston.com/yourtown/news/west\\_roxbury/2012/09/boston\\_set\\_to\\_become\\_largest\\_c.html](http://www.boston.com/yourtown/news/west_roxbury/2012/09/boston_set_to_become_largest_c.html)
35. Middlebrooks, J. S., & Audage, N. C. (2008). The effects of childhood stress on health across the lifespan. Project Report. National Center for Injury Prevention and Control of the Centers for Disease Control and Prevention.
36. Brownlee, K., Rawana, J., Franks, J., Harper, J., Bajwa, J., O'Brien, E., & Clarkson, A. (2013). A systematic review of strengths and resilience outcome literature relevant to children and adolescents. *Child and Adolescent Social Work Journal*, 1-25.
37. Matricciani, L. A., Olds, T. S., Blunden, S., Rigney, G., & Williams, M. T. (2012). Never enough sleep: a brief history of sleep recommendations for children. *Pediatrics*, 129(3), 548-556.
38. National Sleep Foundation (2013). How Much Sleep Do We Really Need?. *Sleep Foundation*. Retrieved August 1, 2013 from <http://www.sleepfoundation.org/article/how-sleep-works/how-much-sleep-do-we-really-need>
39. March of Dimes (2011). Premature Babies. *Premature Birth*. Retrieved on August 1, 2013 from <http://www.marchofdimes.com/baby/premature-babies.aspx>

40. Dieterich, C. M., Felice, J. P., O'Sullivan, E., & Rasmussen, K. M. (2013). Breastfeeding and health outcomes for the mother-infant dyad. *Pediatric Clinics of North America*, 60(1), 31-48.
41. Olds, D. L., Sadler, L., & Kitzman, H. (2007). Programs for parents of infants and toddlers: recent evidence from randomized trials. *Journal of Child Psychology and Psychiatry*, 48(3-4), 355-391.
42. Mistry, K. B., Minkovitz, C. S., Riley, A. W., Johnson, S. B., Grason, H. A., Dubay, L. C., & Guyer, B. (2012). A new framework for childhood health promotion: The role of policies and programs in building capacity and foundations of early childhood health. *American Journal of Public Health*, 102(9), 1688-1696.
43. Lamb, M. E., & Ahnert, L. (2006). Nonparental child care: Context, concepts, correlates, and consequences. *Handbook of Child Psychology*.
44. Love, J. M., Kisker, E. E., Ross, C., Raikes, H., Constantine, J., Boller, K., et al. (2005). The effectiveness of Early Head Start for 3-year-old children and their parents. *Developmental Psychology*, 41, 885-901.
45. Vandell, D. L., Belsky, J., Burchinal, M., Steinberg, L., Vandergift, N., & NICHD Early Child Care Research Network (2010). Do effects of early childcare extend to age 15 years? Results from the NICHD Study of Early Child Care and Youth Development. *Child Development*, 81(3), 737-756.

## **Health of Boston's Children**

**Chapter 4** presents data on child enrollment in public, private, and parochial schools in Boston; school attendance; grade retention; bullying; parent and caregiver perceptions of school quality and the school environment; and frequency with which schools contacted parents and caregivers about problems their child was having at school. A child's experience in elementary, middle, and high school can shape his or her future by opening the doors to higher education, and through education, greater employment opportunities, higher earnings potential, and improved quality of life [1]. Adults with higher educational attainment report better physical, social, and emotional health; lower rates of divorce; and lower rates of incarceration than adults with lower levels of educational attainment [1]. Positive engagement in school has been associated with children's healthy development and their physical, social, and emotional health [2, 3].



## Children at School

### Life at School

This section presents data on Boston children at school, starting with enrollment by type of school and school attendance and moving on to grade retention and experience with bullying. School-aged children can spend up to six hours or more per day at school, thus experiences at school play a major role in child health and development [3].

The school system in Boston includes 122 public schools, including 21 pilot schools, three schools that require an entrance exam, six innovation schools, and 30 charter schools [4, 5]. Charter schools and innovation schools are publicly funded but operate with varying degrees of independence from the district as a whole [4]. Boston is also home to over 40 private and parochial schools [6, 7]. Among children in Boston, 57,100 students are enrolled in the Boston Public School system for the 2013-2014 academic year, an increase of about 500 from the 2012-2013 school year [4]. The system of assigning children to public schools across Boston is complex, and not necessarily based on where children live in the city [8]. In response to ongoing community feedback, Boston Public Schools plans to change the system of assigning schools to a new “home-based” model starting next school year (2014-2015) [9]. Figure 4.1 presents data on Boston children’s enrollment in different types of schools.

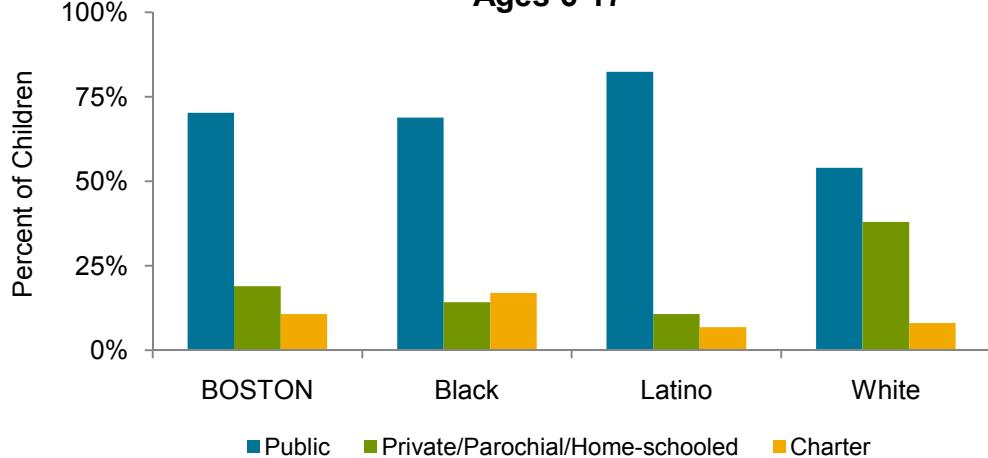
Ensuring that all children have the opportunity to benefit from regular attendance and engagement in school is an important priority for promoting child and community health. Poor school attendance at any phase of schooling is associated with lower academic achievement, lower likelihood of graduating from high school, and less advantageous employment and economic stability as adults [10, 11]. Refusing to attend school or remain in school for the entire school day is also associated with increased risk for social and psychological problems in addition to low academic achievement [12]. While low school connectedness, social problems, and feelings of emotional distress associated with school can lead to a child’s refusal to go to school, a number of other factors can lead to high levels of absenteeism among school-aged children, including chronic health issues and problems at home [10, 12]. Children from low-income households are more likely to miss more days of school than those from wealthier households, especially in the early years of their education [9]. Potential explanations for this include difficulty complying with school policies (such as the requirement that vaccination be documented prior to enrollment), inability to cover fees or pay for school supplies, low parental connection to the education system, and the need for children to contribute financially to the family [11]. Figure 4.2 presents data on school attendance.

Repeating a grade during any stage of schooling is significantly associated with higher risk of dropping out of high school [13]. Students who are held back have poor long-term social, emotional, and academic outcomes compared with students who are promoted and given other remedial options such as extra tutoring and summer programs [14]. In general, students from low-income and single parent families are held back at higher rates than students from wealthier, two-parent families [14]. As we have discussed throughout this report, having access to fewer resources can significantly impact child health and scholastic achievement. Low-income and single parents may not have the confidence or time to demand alternative remedial options from a school system and are less able to pay for tutoring or other programs that could help their struggling students [14]. Student performance also might be affected by problems at home or in their communities [14]. In addition, literature indicates that teacher expectations may vary based on race, class, or gender of students, subtly affecting the education process [15]. Thus, research suggests that requiring a student to repeat a grade is not enough to address the complex set of social, environmental, and economic factors that might lead to poor school performance, and that more comprehensive approaches are needed to ensure success for all students [13, 14]. Figure 4.3 presents data on number of children that have repeated a grade in school.

Experiences with bullying can have a sharp impact on child health and wellness. A majority of bullying incidents occur at schools, or in places near school grounds where adult supervision is minimal [16]. However, with recent increases in technology and social media use among children and youth, electronic bullying has become an increasing problem that children may experience virtually anywhere [17]. Victims of school and electronic bullying report feeling disconnected from their school, performing poorly at school, and experiencing depressive symptoms and/or suicidal ideation [18]. Targeted bullying based on race, sexual orientation, or disability is associated with worse physical and psychological health problems among victims than other types of bullying [19]. Children who bully are also at increased risk for depression and suicidal ideation, and criminal activity later in life [20]. School-based anti-bullying programs and policies that include parent involvement, firm disciplinary policies, and improved playground and lunch room supervision have been shown most effective at reducing and preventing school bullying [21]. Figure 4.4 presents data on Boston children's experiences with bullying.

## Health of Boston's Children

**Figure 4.1 School Enrollment by Type of School,  
Ages 6-17**



|   | BOSTON               | Black                | Latino               | White                |
|---|----------------------|----------------------|----------------------|----------------------|
| Public                                      | 70.3%<br>(66.6-74.0) | 68.8%<br>(61.9-75.7) | 82.4%<br>(76.5-88.4) | 54.0%<br>(47.7-60.3) |
| Private/<br>Parochial/<br>Home-<br>schooled | 19.0%<br>(16.0-22.0) | 14.2%<br>(9.0-19.4)  | 10.7%<br>(6.3-15.1)  | 38.0%<br>(31.8-44.1) |
| Charter                                     | 10.7%<br>(8.1-13.3)  | 17.0%<br>(11.3-22.6) | 6.9%<br>(2.4-11.3)   | 8.0%<br>(4.5-11.6)   |

NOTES: Data for Asian children are not presented due to insufficient sample size. Data for multiracial/other race are not shown.

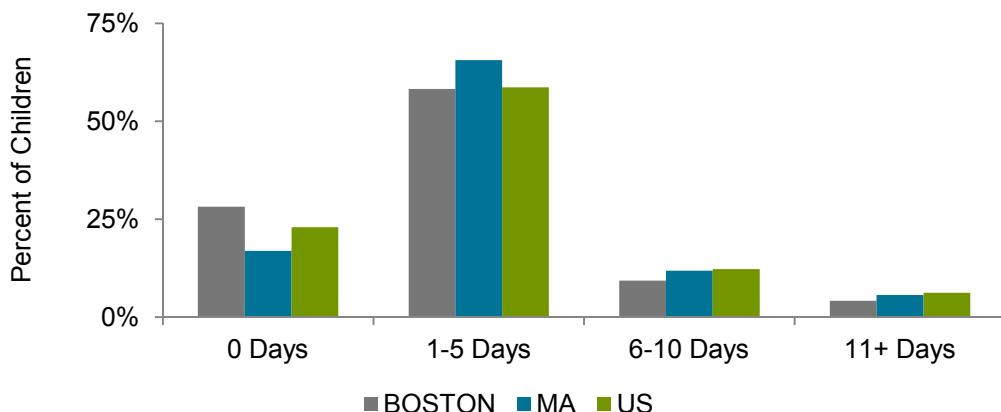
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 4.1** presents data on Boston children's enrollment in different types of schools overall and stratified by race and ethnicity. Seven out of ten Boston children ages 6-17 years were enrolled in public school. Less than 1% of Boston children were home-schooled (data not shown). A higher percentage of Black and Latino children were enrolled in public school than White children. The percentage of children enrolled in charter schools was similar across racial and ethnic groups, however a higher percentage of White children were enrolled in private or parochial schools or were home-schooled, than Black and Latino children.

A higher percentage of children for whom at least one parent or caregiver had a bachelor's degree or higher attended private or parochial school or were home-schooled than children whose parent or caregiver had a lower level of educational attainment (data not shown). A higher percentage of children whose parent or caregiver's educational attainment was less than a high school diploma/GED attended public school than children whose parent or caregiver had a bachelor's degree or higher (data not shown).

**Figure 4.2 School Days Missed in Past 12 Months Due to Illness or Injury, Ages 6-17**



|               | 0 Days               | 1-5 Days             | 6-10 Days            | 11+ Days          |
|---------------|----------------------|----------------------|----------------------|-------------------|
| BOSTON        | 28.2%<br>(24.3-32.1) | 58.3%<br>(54.1-62.5) | 9.3%<br>(7.0-11.7)   | 4.2%<br>(2.5-5.8) |
| Massachusetts | 16.9%<br>(14.0-19.8) | 65.7%<br>(62.2-69.1) | 11.8%<br>(9.6-14.0)  | 5.6%<br>(3.9-7.3) |
| United States | 22.9%<br>(22.2-23.7) | 58.7%<br>(57.8-59.5) | 12.2%<br>(11.7-12.8) | 6.2%<br>(5.7-6.6) |

NOTE: Data do not include children who were home-schooled.

DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health 2011-2012

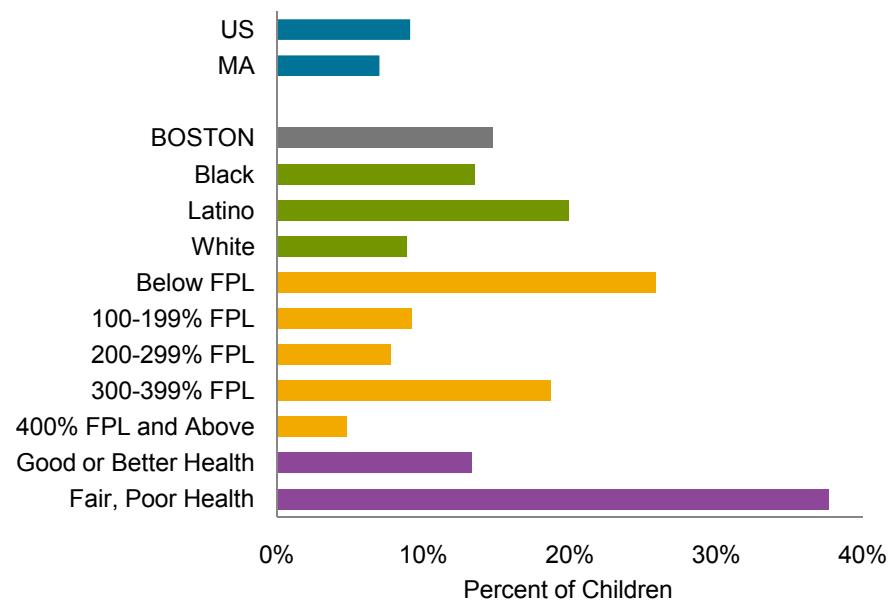
DATA ANALYSIS: Boston Public Health Commission Research & Evaluation

**Figure 4.2** presents information about school attendance for Boston children ages 6-17. Slightly more than one quarter of all Boston children ages 6-17 years did not miss any days of school due to illness or injury in the past year. This percentage was higher among Boston children than children in Massachusetts or the United States as a whole. A similar percentage of Boston children missed 1-5 days, 6-10 days, and 11 or more days of school due to illness or injury as children in Massachusetts or the United States as a whole.

The number of days of missed school due to illness or injury did not vary by school type, including public school, private or parochial school, and charter schools (data not shown). Also, the number of days of missed school due to illness or injury did not vary among those in good or better health compared with those in fair or poor health (data not shown).

## Health of Boston's Children

**Figure 4.3 Children Who Had Ever Repeated a Grade in School Since Starting Kindergarten, Ages 6-17**



|                                 |                   |
|---------------------------------|-------------------|
| United States                   | 9.1% (8.5-9.6)    |
| Massachusetts                   | 7.0% (5.1-8.8)    |
| BOSTON                          | 14.7% (11.6-17.9) |
| Race/Ethnicity of Child         |                   |
| Black                           | 13.5% (8.6-18.5)  |
| Latino                          | 20.0% (13.1-26.8) |
| White                           | 8.8% (5.4-12.3)   |
| Federal Household Poverty Level |                   |
| Below FPL                       | 25.9% (17.7-34.0) |
| 100-199% FPL                    | 9.2% (4.0-14.4)   |
| 200-299% FPL                    | 7.8% (3.4-12.1)   |
| 300-399% FPL                    | 18.7% (8.1-29.4)  |
| 400% FPL and Above              | 4.8% (1.7-7.8)    |
| Child General Health            |                   |
| Good or Better Health           | 13.3% (10.2-16.4) |
| Fair, Poor Health               | 37.6% (19.8-55.5) |

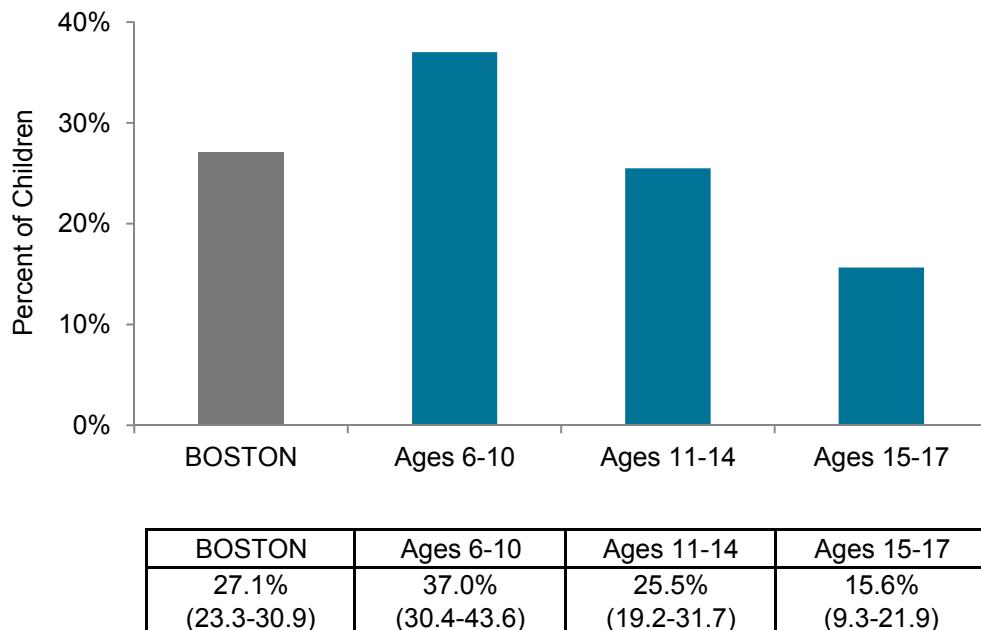
NOTES: Data for Asian children are not presented due to insufficient sample size. Data for multiracial/other race are not shown. General health for children is indicated as "good or better" where respondents reported general health status to be "excellent", "very good", or "good."

DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 4.3** presents information about the percentage of children who had ever repeated a grade in school stratified by race and ethnicity, federal household poverty level (FPL), and child general health status. Approximately one out of seven Boston children ages 6-17 years had repeated a grade in school since starting kindergarten, a higher percentage than children in Massachusetts as a whole or the United States.

In Boston, a higher percentage of Latino children had repeated a grade in school since starting kindergarten than White children. Also, a higher percentage of children whose general health was fair or poor had repeated a grade in school since starting kindergarten than children whose general health was good or better.

**Figure 4.4 Bullied in Past Year, Ages 6-17**

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 4.4** presents data on children that were bullied based on parent and caregiver reports according to age group. Over one-quarter (27.1%) of Boston children ages 6-17 years were bullied in the past year. A higher percentage of children ages 6-10 years were bullied in the past year (37.0%) than children ages 15-17 years (15.6%).

There were no differences in the percentage of children that were bullied by gender or among racial and ethnic groups (data not shown).

## Parents and Caregivers and the School Environment

This section presents data on how parents and caregivers perceive their children's school environments. It includes information about parents' and caregivers' perceptions of the quality of their child's education and perceptions of school safety. Also included are data on the number of times parents or caregivers were contacted by schools about problems with their child. These data may provide some insight into the extent to which parents and caregivers look to schools as allies in raising healthy and happy children.

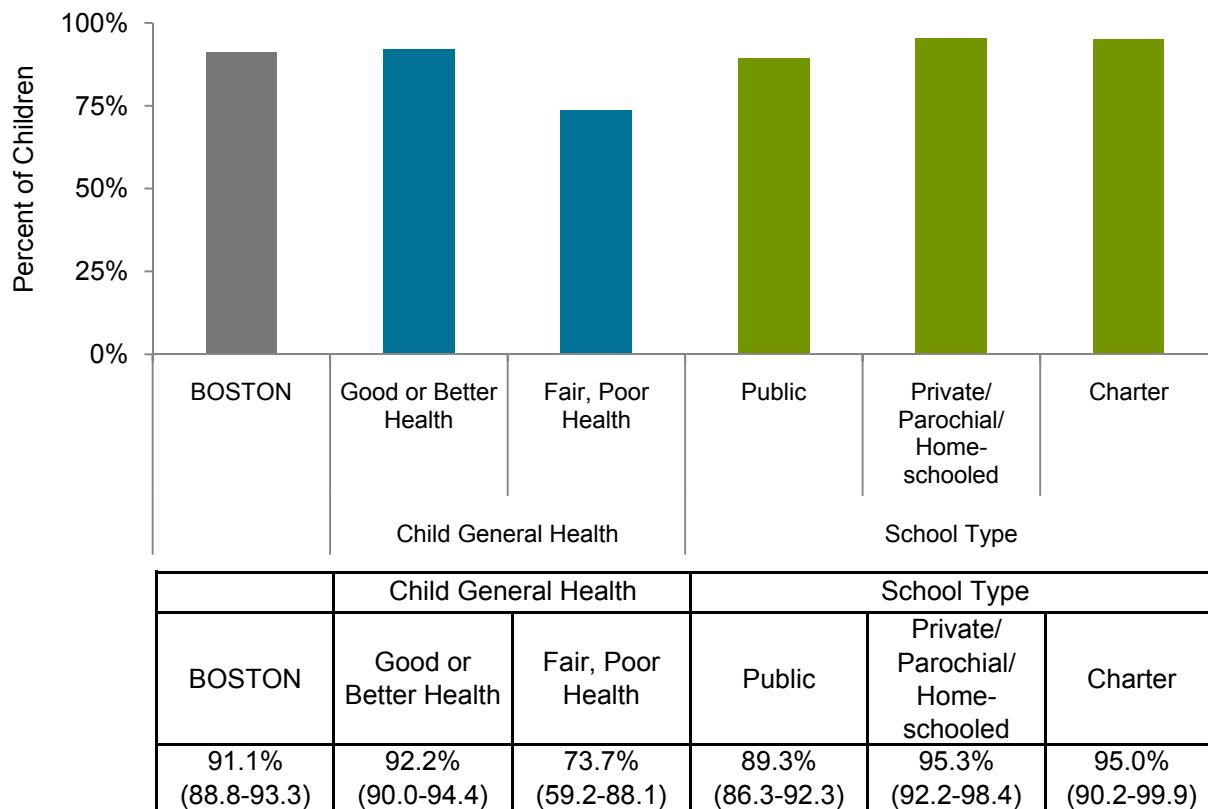
Positive parent perceptions of their children's school environment have been associated with increased parental involvement and engagement with the school, especially for parents of elementary-aged children [22]. Parent satisfaction and involvement with schools helps build integrated environments that support children's development and academic success [22]. Figure 4.5 presents information on how satisfied Boston parents and caregivers were with the quality of their child's education.

In addition to overall satisfaction with their child's education, parents and caregivers were asked about their perceptions of their child's safety at school. Safe school environments are critical for children to achieve academic and personal success [23]. Fear of violence at school or stress related to compromised school safety can have developmental and long term psychological effects and decrease a child's ability to concentrate and learn [23]. Safe and supportive school environments promote self-esteem, positive social development, and self-efficacy among students [24]. Figure 4.6 presents the percentage of Boston children whose parents felt they were usually or always safe at school.

The number of times parents or caregivers are contacted by their child's school for problems their child was having provides some insight into relationships between parents or caregivers and schools. Increased contact from schools to parents or caregivers about children's difficulties could suggest that schools are reaching out to support a child. On the other hand, it could represent schools placing the onus on the parent or caregiver to manage a child's behavior when the school finds the child disruptive. Figure 4.7 presents data on the number of times within the past 12 months parents or caregivers were contacted by schools for problems with their child.

## Parents and Caregivers and the School Environment

**Figure 4.5 Parent/Caregiver Satisfied\* with Quality of Child's Education, Children Ages 6-17**



\*Parents/caregivers were either somewhat satisfied or very satisfied with the quality of education that their child received at school.

NOTE: General health for children is indicated as "good or better" where respondents reported general health status to be "excellent," "very good," or "good."

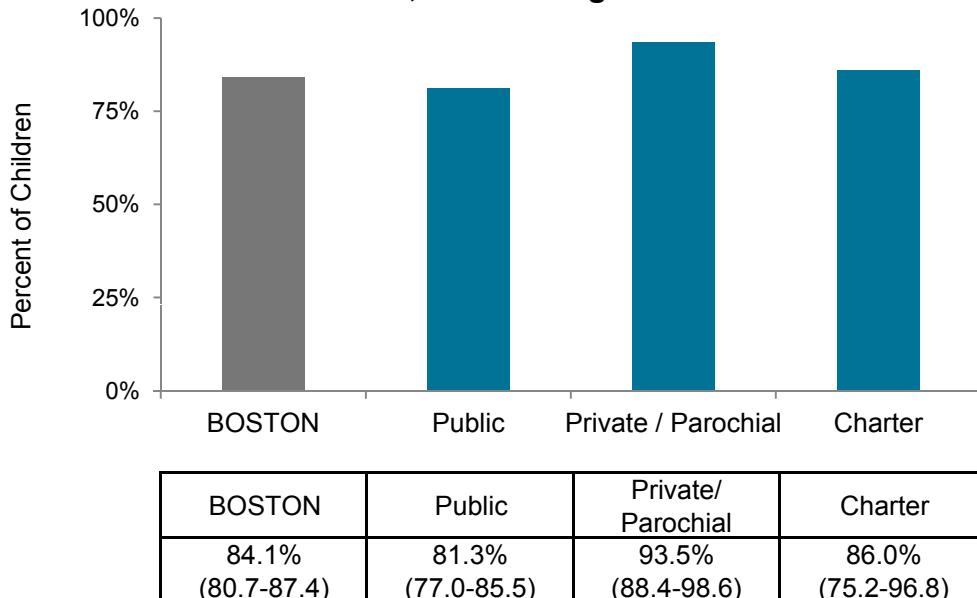
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 4.5** presents data on parents' or caregivers' perceptions of the quality of their child's education stratified by child health status and school type. Approximately nine out of ten Boston children ages 6-17 years lived in households where the parent or caregiver was very satisfied or somewhat satisfied with the quality of education that his or her child was receiving. A higher percentage of children who were in good or better general health had parents or caregivers that were very satisfied or somewhat satisfied with the quality of education that their child was receiving than children in fair or poor health.

The percentage of children who lived in households where the parent or caregiver was very satisfied or somewhat satisfied with the quality of education was similar regardless of racial or ethnic group, primary language spoken at home, and the type of school the child attended (data not shown).

**Figure 4.6 Parent/Caregiver Felt Child Was Safe\* at School, Children Ages 6-17**



\*Parents/caregivers reported that they felt that their child was either usually or always safe at school.

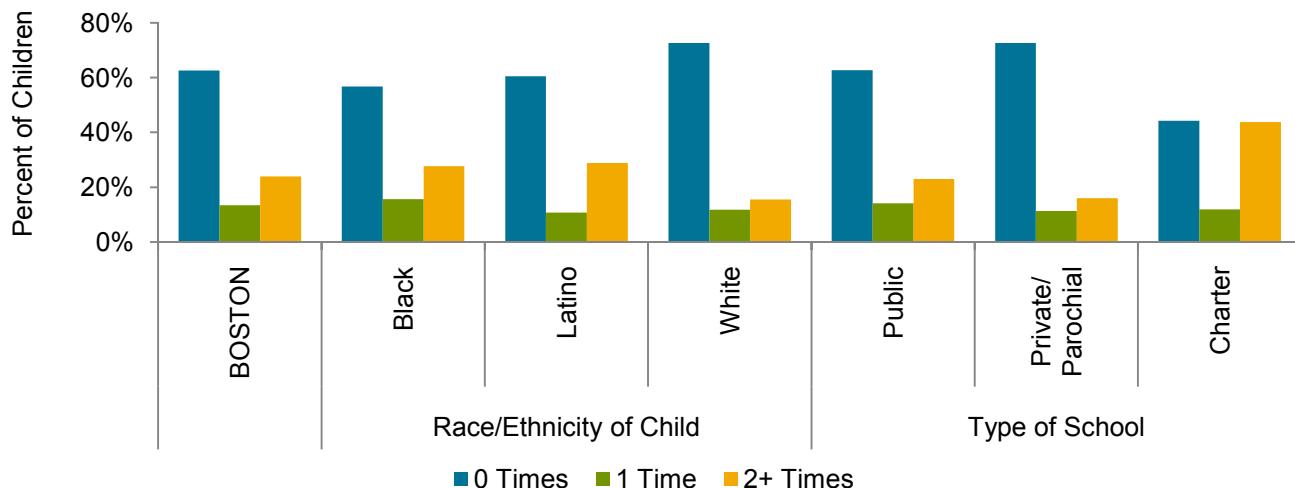
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 4.6** presents percentages of Boston children whose parents felt they were usually or always safe at school stratified by school type. Among Boston children ages 6-17 years who were enrolled in school and were not home schooled, 84.1% lived in households where the parent or caregiver felt that his or her child was always safe or usually safe at school. A higher percentage of children who attended private or parochial school lived in households where the parent or caregiver felt that his or her child was always safe or usually safe at school than children who attended public school.

## Parents and Caregivers and the School Environment

**Figure 4.7 Number of Times within Past 12 Months Parent/Caregiver Contacted by School for Problems with Child, Children Ages 6-17**



NOTES: Data for Asian children are not presented due to insufficient sample size. Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 4.7** presents the number of times within the past 12 months parents or caregivers were contacted by schools regarding problems with their child stratified by racial and ethnic groups and school type. Nearly two-thirds (62.6%) of Boston children had parents or caregivers that were never contacted by their school for problems related to their child in the past year. A higher percentage of Black and Latino children had parents or caregivers that were contacted by their school two or more times in the past year for problems with their child than White children. Also, a higher percentage of children who attended charter schools had parents or caregivers that were contacted two or more times in the past year for problems with their child than children who attended public or private or parochial schools.

### **Summary: Children at School**

Experiences with school, including parent and caregiver perceptions of the school environment, can affect children's present health and well-being, and influence their opportunities for the future.

Boston children may attend public schools, charter schools, or private and parochial schools. Less than 1% of Boston children were home schooled. A majority of Boston school-aged children were enrolled in public school. However, higher percentages of Black and Latino children were enrolled in public school than White children, and higher percentages of White children were enrolled in private or parochial school than Black and Latino children. A higher percentage of children whose parents or caregivers had higher educational attainment attended private or parochial school or were home-schooled than children whose parents or caregivers had less education.

Poor school attendance and repeating a grade are risk factors for and indicators of low school engagement [10, 11, 13]. A higher percentage of Boston children had repeated a grade in school than children in Massachusetts or the United States as a whole. A higher percentage of Latino children had repeated a grade in school since starting kindergarten than White children. Additionally, a higher percentage of children in fair or poor health had repeated a grade in school since starting kindergarten than children in good or better health. There were no differences in school attendance by child's general health status.

Research indicates the value of strong parent/caregiver-school relationships [22]. Parents' and caregivers' perceptions of their child's school, therefore, are important measures. Parents' and caregivers' satisfaction with the quality of their child's education did not differ by racial and ethnic group or type of school. However, higher percentages of children in good or better general health had parents or caregivers who were satisfied with the quality of their child's education than children in fair or poor health. Additionally, higher percentages of children who attended private or parochial school had parents or caregivers who reported feeling their child was safe at school than children who attended public school. Over one-quarter of Boston school-aged children were bullied in the past year, with a higher percentages of young students reported being bullied than older students.

References:

1. Child Trends Data Bank. (2013). *Educational attainment: Indicators on children and youth*. Retrieved August 1, 2013 from: <http://www.childtrends.org/?indicators=educational-attainment>
2. Dotterer, A. M., & Lowe, K. (2011). Classroom context, school engagement, and academic achievement in early adolescence. *Journal of Youth and Adolescence*, 40(12), 1649-1660.
3. Centers for Disease Control and Prevention (2009). *School connectedness: Strategies for increasing protective factors among youth*. Retrieved August 1, 2013 from: <http://www.cdc.gov/HealthyYouth/adolescenthealth/pdf/connectedness.pdf>
4. Boston Public Schools (2013). *Boston Public Schools at a Glance 2012-2013*. Retrieved August 1, 2013 from: [http://www.bostonpublicschools.org/files/bps\\_at\\_a\\_glance\\_13-0425\\_0.pdf](http://www.bostonpublicschools.org/files/bps_at_a_glance_13-0425_0.pdf)
5. Massachusetts Charter Public School Association (2013). *Find a Charter School*. Retrieved August 1, 2013 from: <http://www.masscharterschools.org/schools/boston>
6. National Parochial School Association (2013). *Parochial Schools of Massachusetts*. Retrieved August 1, 2013 from: <http://www.parochial.com/massachusetts/list.html>
7. Association of Independent Schools in New England (2013). *Independent Schools Search Results: Boston*. Retrieved August 1, 2013 from: <http://wwwaisne.org/search.html?boarding=&grade=&q=Boston%2CMA&boarding=on&day=on>
8. Boston Public Schools (2013). *Student Assignment Policy*. Retrieved August 1, 2013 from: <http://www.bostonpublicschools.org/assignment>
9. Improving School Choice External Advisory Committee (2013). *Improving School Choice*. Retrieved August 1, 2013 from: <http://bostonschoolchoice.org/>
10. Roby, D. E. (2004). Research on school attendance and student achievement: A study of Ohio schools. *Educational Research Quarterly*, 28(1), 3-16
11. Zhang, M. (2003). Links between school absenteeism and child poverty. *Pastoral Care in Education*, 21(1), 10-17.
12. King, N. J., & Bernstein, G. A. (2001). School refusal in children and adolescents: A review of the past 10 years. *Journal of the American Academy of Child & Adolescent Psychiatry*, 40(2), 197-205.
13. Pharris-Ciurej, N., Hirschman, C., & Willhoff, J. (2012). The 9th grade shock and the high school dropout crisis. *Social Science Research*, 41(3), 709-730.
14. Jimerson, S. R. (2001). Meta-analysis of grade retention research: Implications for practice in the 21st century. *School Psychology Review*, 30(3), 420-437
15. Shepherd, M. A. (2011). Effects of ethnicity and gender on teachers' evaluation of students' spoken responses. *Urban Education*, 46(5), 1011-1028.
16. Smokowski, P. R., & Kopasz, K. H. (2005). Bullying in school: An overview of types, effects, family characteristics, and intervention strategies. *Children & Schools*, 27(2), 101-110.
17. Juvonen, J., & Gross, E. F. (2008). Extending the school grounds?—Bullying experiences in cyberspace. *Journal of School Health*, 78(9), 496-505.
18. Schneider SK, O'Donnell L, Stueve A, Coulter RWS (2011). Cyberbullying, school bullying, and psychological distress: a regional census of high school students. *American Journal of Public Health*, 102: 171-177.
19. Russell ST, Sinclair KO, Poteat VP, Koenig BW (2012). Adolescent health and harassment based on discriminatory bias. *American Journal of Public Health*, 102: 493-495.
20. Van der Wal, M. F., De Wit, C. A., & Hirasing, R. A. (2003). Psychosocial health among young victims and offenders of direct and indirect bullying. *Pediatrics*, 111(6), 1312-1317.

## **Health of Boston's Children**

21. Ttofi, M. M., & Farrington, D. P. (2011). Effectiveness of school-based programs to reduce bullying: A systematic and meta-analytic review. *Journal of Experimental Criminology*, 7(1), 27-56.
22. Griffith, J. (2000). School climate as group evaluation and group consensus: Student and parent perceptions of the elementary school environment. *The Elementary School Journal*, 35-61.
23. WestEd. (2010). *California Healthy Kids Survey (CHKS): California School District Secondary School Survey Results Fall 2009/Spring 2010, Core Module A. "Core Narrative"*
24. Furlong, M., Paige, L. Z., & Osher, D. (2003). The Safe Schools/Healthy Students (SS/HS) Initiative: Lessons learned from implementing comprehensive youth development programs. *Psychology in the Schools*, 40(5), 447-456.

**Chapter 5** presents data on child and family experiences in the community. This includes use of community resources, participation in physical activity, and neighborhood safety and cohesion, all of which can positively impact a child's well-being [1,2]. Positive connections to community in childhood have been linked to improvements in educational attainment, behavioral outcomes, emotional health, social functioning, and physical health [1, 2].



## Children and Families in Boston Communities

## **Child and Family Engagement with Community Resources and Physical Activity**

This section presents information on engagement with community organizations, use of parks and recreation centers, and participation in physical activity. Programs that encourage physical activity and opportunities to interact with others have multiple benefits for children [3, 4].

Participation in high quality afterschool programs has been associated with improved school performance, social functioning, and emotional well-being [5]. Figure 5.1 presents data on participation in sports, clubs, and other organizations after school and on weekends.

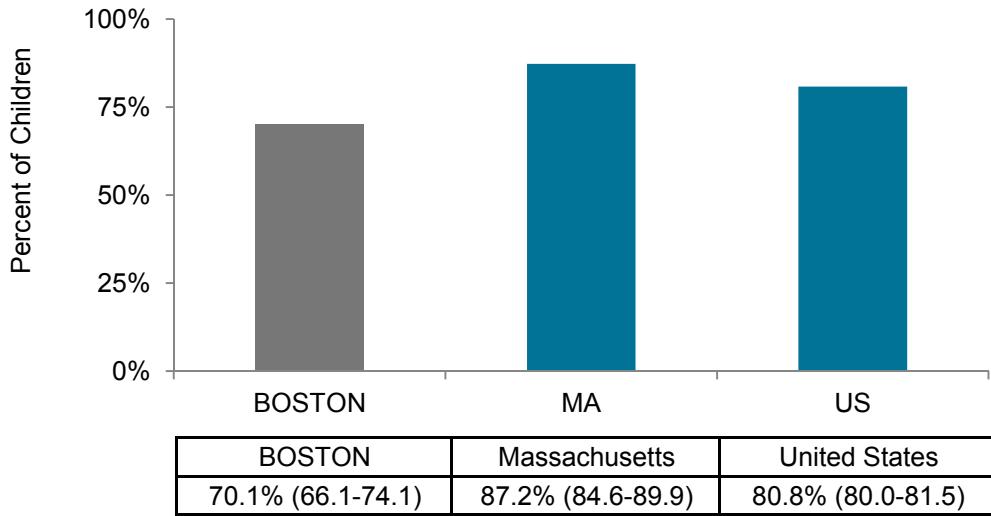
The availability of safe, high quality parks and playgrounds, community centers, and other recreational facilities in communities provides opportunities for physical activity and socialization for children and families. Figures 5.2 and 5.3 present data on Boston children's use of neighborhood parks and community recreation centers, while Figure 5.4 presents data on the satisfaction of parents and caregivers with the recreation opportunities available for children in their communities.

Time spent outdoors and use of recreational facilities among children have been associated with increased physical activity [6]. Children that are less physically active are more likely to be overweight or obese and to experience associated psychological, psychosocial, and physical problems than children who are more physically active [7]. Literature shows that, historically, low-income urban communities and communities of color have had inequitable access to community resources that promote physical activity [6]. Figure 5.5 presents information on the percentage of children who participated in at least 20 minutes of vigorous physical activity per day, while Figure 5.6 presents information on how and where children usually get their exercise.

Bicycling is one form of exercise that can be beneficial to children from a health and environmental perspective, however it carries a risk of injury and death if done without proper safety precautions. Wearing a helmet is a primary way to protect against traumatic head injury and death, yet not all children wear them [8]. Barriers to bicycle safety among children include poorly fitting or uncomfortable helmets and the concern that wearing a helmet is unacceptable to peers [8]. Figure 5.7 presents data on helmet use among Boston children.

## **Child and Family Engagement with Community Resources and Physical Activity**

**Figure 5.1 Participation in Sports, Clubs, and/or Organizations After School in Past Year,  
Ages 6-17**



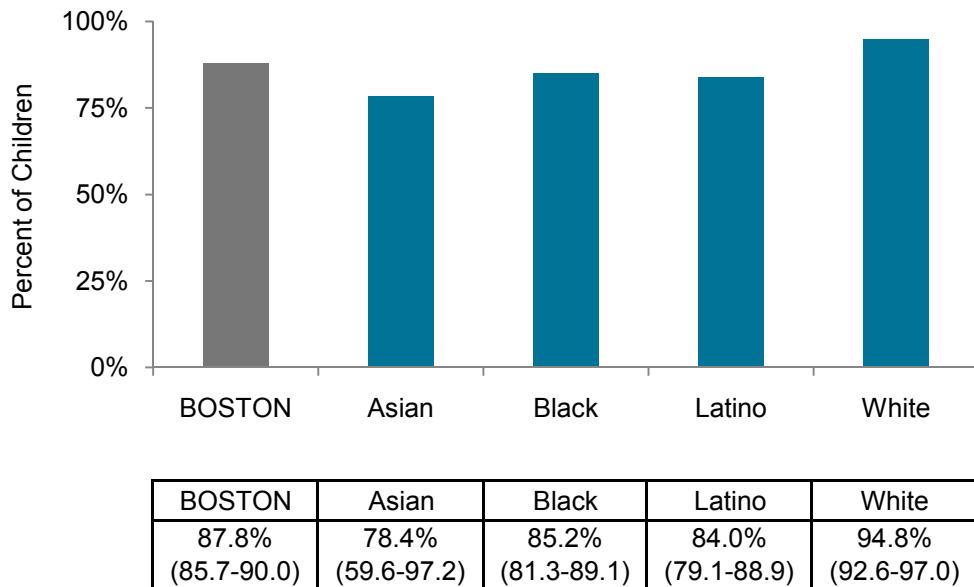
DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.1** presents information about Boston children's participation in activities after school and on weekends. Seven out of ten Boston children ages 6-17 years participated in afterschool sports, clubs, or organizations. A lower percentage of Boston children participated in these activities than children in Massachusetts or the United States as a whole.

Although not presented here, among Boston children ages 6-17 years who participated in sports, clubs, or organizations after school or on weekends, three out of four (74.5%) had a parent or caregiver who always attended or usually attended events related to those activities. A higher percentage of children ages 6-10 years (82.0%) had parents or caregivers who always attended or usually attended than children ages 15-17 years (65.5%). Among gender groups (female and male), and among Black, Latino, and White children, percentages were similar. Among children who lived in households where the primary language spoken was Spanish, a lower percentage had parents or caregivers who always or usually attended afterschool activities than children who lived in households where the primary language spoken was English.

**Figure 5.2 Child Had Been to a Neighborhood Park or Playground in Past Year, Ages 0-17**



NOTE: Data for multiracial/other race are not shown.

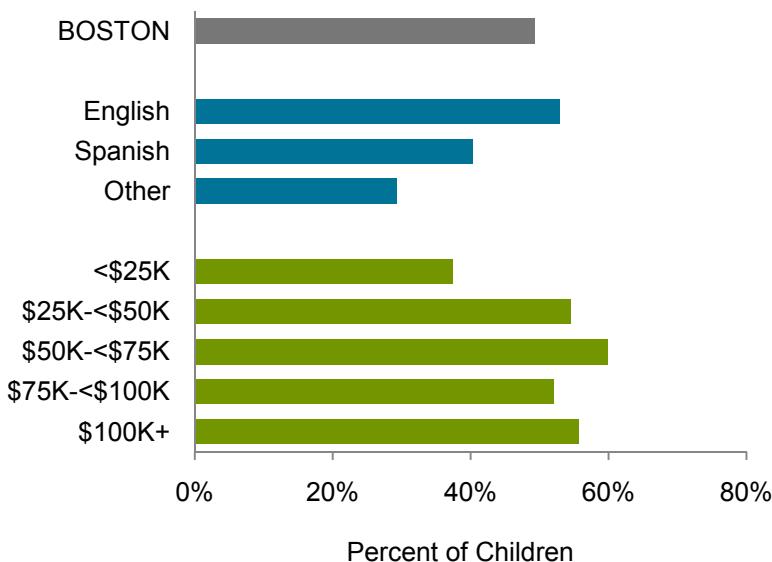
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.2** presents data on the use of neighborhood parks and playgrounds. The majority (87.8%) of Boston children had been to a park or playground in their neighborhood in the past year. A higher percentage of White children visited a neighborhood park or playground in the past year than Black or Latino children.

## **Child and Family Engagement with Community Resources and Physical Activity**

**Figure 5.3 Child Had Been to a Community or Recreation Center in Past Year, Ages 0-17**



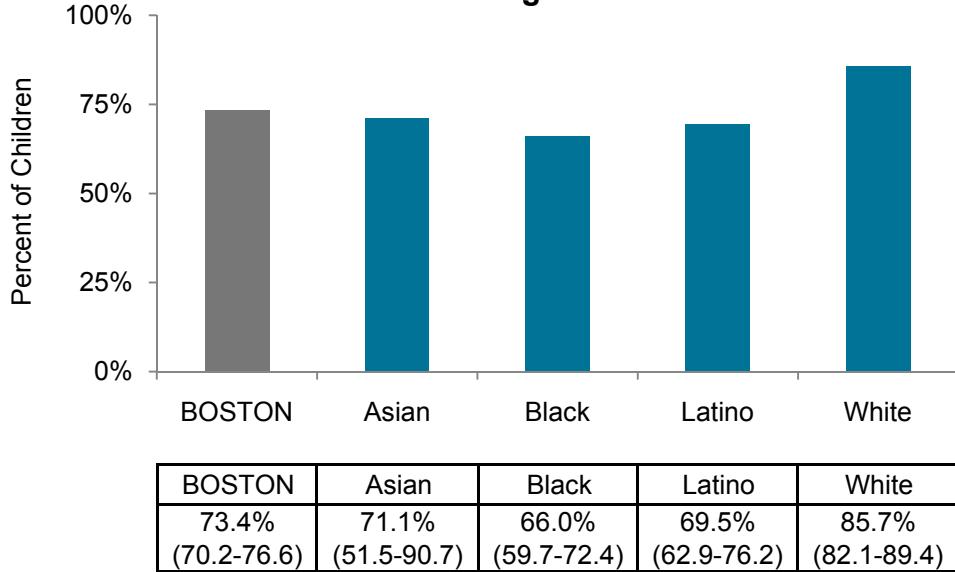
|                                 |                   |
|---------------------------------|-------------------|
| BOSTON                          | 49.3% (45.9-52.7) |
| Primary Language Spoken at Home |                   |
| English                         | 52.9% (49.1-56.6) |
| Spanish                         | 40.3% (31.0-49.7) |
| Other                           | 29.4% (16.5-42.2) |
| Annual Household Income         |                   |
| <\$25K                          | 37.5% (30.5-44.4) |
| \$25K-<\$50K                    | 54.5% (45.7-63.3) |
| \$50K-<\$75K                    | 59.8% (50.3-69.3) |
| \$75K-<\$100K                   | 52.1% (43.6-60.6) |
| \$100K+                         | 55.7% (49.6-61.9) |

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.3** presents data on children's use of community and recreation centers. Nearly half (49.3%) of Boston children had been to a community or recreation center in their neighborhood in the past year. A lower percentage of children who lived in households where the primary language spoken was neither English nor Spanish had been to a community or recreation center in the past year. A lower percentage of children who lived in households with annual income less than \$25,000 visited a community or recreation center in the past year than children who lived in households in any other income bracket except \$75,000 to less than \$100,000.

**Figure 5.4 Parents/Caregivers Who Were Satisfied\*  
with Youth Recreational Activities,  
Children Ages 0-17**



\*Parents/caregivers were either somewhat satisfied or very satisfied with the youth recreational activities in their neighborhood.

NOTE: Data for multiracial/other race are not shown.

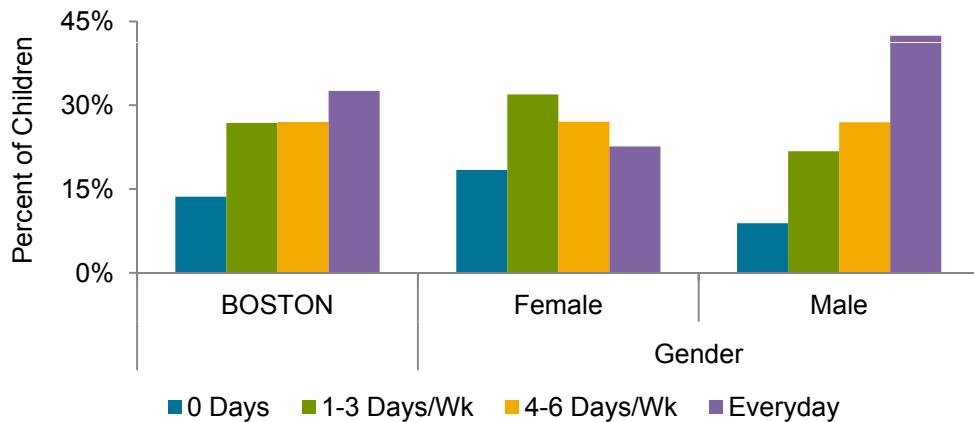
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.4** presents data on parent or caregiver satisfaction with youth recreational activities. Nearly three-quarters (73.4%) of Boston children lived in households where the parent or caregiver was very satisfied or somewhat satisfied with the youth recreational activities available in his or her neighborhood. A higher percentage of White children lived in households where the parent or caregiver was very satisfied or somewhat satisfied with the youth recreational activities available in his or her neighborhood than Black or Latino children.

## Child and Family Engagement with Community Resources and Physical Activity

**Figure 5.5 Twenty or More Minutes of Vigorous Physical Activity\*, Ages 6-17**



|             | BOSTON               | Gender               |                      |
|-------------|----------------------|----------------------|----------------------|
|             |                      | Female               | Male                 |
| 0 Days      | 13.6%<br>(10.5-16.7) | 18.4%<br>(13.3-23.4) | 8.9%<br>(5.4-12.3)   |
| 1-3 Days/Wk | 26.8%<br>(22.9-30.7) | 31.9%<br>(25.8-38.0) | 21.8%<br>(17.0-26.5) |
| 4-6 Days/Wk | 27.0%<br>(23.3-30.7) | 27.1%<br>(21.7-32.4) | 27.0%<br>(22.0-31.9) |
| Everyday    | 32.6%<br>(28.5-36.7) | 22.6%<br>(17.5-27.7) | 42.4%<br>(36.5-48.4) |

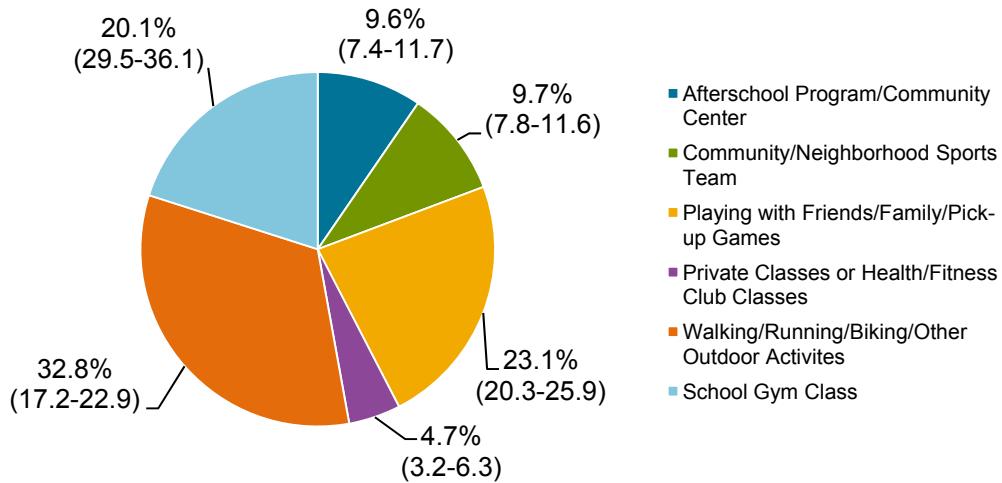
\* Vigorous physical activity was defined as physical activity that made the child sweat and breathe hard.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.5** presents data on percentages of children who participated in at least 20 minutes of vigorous physical activity daily. Slightly less than one-third (32.6%) of Boston children ages 6-17 years engaged in physical activity everyday that made them sweat or breathe hard for at least twenty minutes. A higher percentage of boys than girls engaged in physical activity everyday that made them sweat or breathe hard for at least twenty minutes.

**Figure 5.6 Primary Mode of Exercise, Ages 0-17**



DATA SOURCE: Boston Survey of Children's Health, 2012

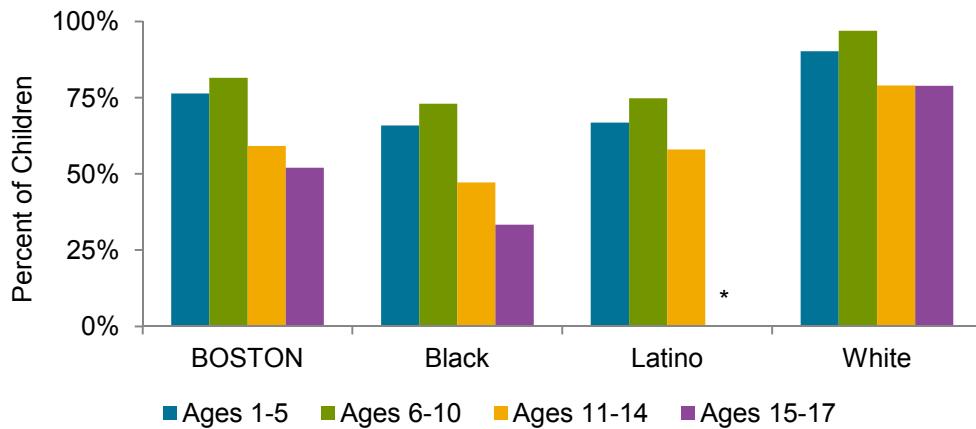
DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.6** presents data on children's primary mode of exercise. In Boston, the three most common ways in which children got their exercise were outdoor activities (e.g., walking, running, biking; 32.8%), playing with friends or family (23.1%), and school gym class (20.1%).

Higher percentages of Black (24.0%) and Latino (25.0%) children primarily got their exercise from school gym class than White children (12.0%) (data not shown). Also, higher percentages of children who lived in households with annual incomes of less than \$25,000 and \$25,000 to less than \$50,000 primarily got their exercise from school gym class (25.9% and 30.0%, respectively) than children from households with incomes above \$50,000 (13.4%) (data not shown).

## Child and Family Engagement with Community Resources and Physical Activity

**Figure 5.7 Regular Helmet Use Among Children Who Ride Bicycles, Ages 1-17**



\*Insufficient sample size

NOTES: Data for Asian children are not presented due to insufficient sample size. Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.7** presents data on regular bicycle helmet usage. In Boston, helmet usage differed by age and racial and ethnic group. Higher percentages of children in the two youngest age groups regularly wore a helmet than the two oldest age groups. A higher percentage of White children regularly wore a helmet than Black children in all age groups. A higher percentage of White children ages 1-5 years and ages 6-10 years wore a helmet regularly than Latino children in the same age groups.

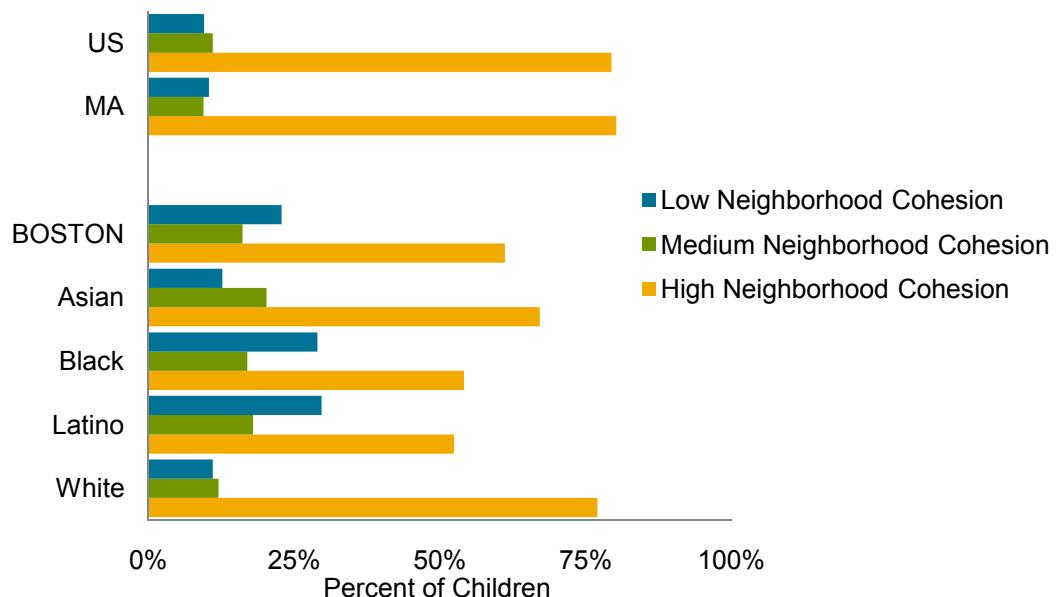
## Community Quality of Life

This section presents information on parent and caregiver reports of neighborhood cohesion and safety—community characteristics shown to promote healthy development and resilience in children [9].

Social capital, defined as the presence of community cohesion and meaningful social networks in a given neighborhood, can affect health and quality of life among children by allowing for a greater sense of support for families; promoting faster dissemination of health information among community members that encourage healthy norms and behaviors and control unhealthy ones; and increasing awareness and access to community resources [10, 11]. Many social theorists argue that people living in urban environments have fewer social ties within their neighborhood and feel less overall community cohesion [12]. Other researchers claim that while this may be true of neighborhood cohesion in large cities, urban environments can also facilitate other types of social ties, such as professional and social connections between families that live in different parts of a city, that aren't centered in the traditional neighborhood [12]. This may help to explain the lower percentage of parents and caregivers reporting community cohesion in Boston than in Massachusetts or the nation, as shown in Figure 5.8. It is also possible, of course, that other characteristics of Boston are contributing to these differences. Figure 5.8 also presents neighborhood cohesion data stratified by racial and ethnic group.

Having a safe, supportive neighborhood is important for child health and development and has been associated with stronger connections with family, peers, and community members; increased participation in afterschool programs and community activities; and increased volunteerism and community service by children [13]. Conversely, unsafe neighborhoods can have negative effects on child health and well-being. For example, children who live in unsafe neighborhoods are more likely to become victims or perpetrators of violent crime [14, 15]. Also, children who have witnessed violence or crime in their neighborhood have been found to exhibit higher levels of aggression, delinquency, depression, post traumatic stress disorder (PTSD), substance abuse and withdrawal, and lower levels of school achievement [16, 17, 18]. Parental perceptions of neighborhood safety influence the extent and nature of children's interaction with their surrounding environments, and thus the extent to which they can engage in health promoting behaviors [19]. Children whose parents are worried about neighborhood violence, for example, walk and bike to local destinations less than other children, spend more time indoors watching television and less time engaging in physical activity, and are thus at greater risk of obesity and other conditions related to sedentary behaviors [19]. Figures 5.9 and 5.10 present percentages of children whose parents or caregivers felt their child was unsafe in his or her neighborhood, and Figure 5.11 presents exposure to neighborhood violence among Boston children as reported by parents and caregivers.

**Figure 5.8 Parent/Caregiver-Reported Neighborhood Cohesion, Ages 0-17**



|                                | Low Neighborhood Cohesion | Medium Neighborhood Cohesion | High Neighborhood Cohesion |
|--------------------------------|---------------------------|------------------------------|----------------------------|
| United States                  | 9.5% (9.1-10.0)           | 11.0% (10.5-11.5)            | 79.4% (78.8-80.1)          |
| Massachusetts                  | 10.4% (8.3-12.5)          | 9.4% (7.5-11.3)              | 80.2% (77.6-82.8)          |
| BOSTON                         | 22.8% (19.7-25.9)         | 16.1% (13.4-18.8)            | 61.1% (57.6-64.6)          |
| <b>Race/Ethnicity of Child</b> |                           |                              |                            |
| Asian                          | 12.7% (2.2-23.1)          | 20.3% (0.0-40.7)             | 67.1% (47.2-87.0)          |
| Black                          | 28.9% (22.5-35.4)         | 17.0% (12.0-22.0)            | 54.1% (47.3-60.9)          |
| Latino                         | 29.7% (23.0-36.3)         | 17.9% (12.2-23.6)            | 52.4% (45.3-59.6)          |
| White                          | 11.0% (7.6-14.5)          | 12.0% (8.2-15.9)             | 77.0% (72.2-81.7)          |

NOTES: Data for multiracial/other race are not shown. The neighborhood cohesion (NC) variable was calculated based on the number of the following statements with which respondents definitely/somewhat agreed (1="Low NC", 2="Medium NC", 3="High NC"): "People in this neighborhood help each other out", "We watch out for each other's children in this neighborhood", and "If my child were outside playing and got hurt or scared, there are adults nearby whom I trust to help my child".

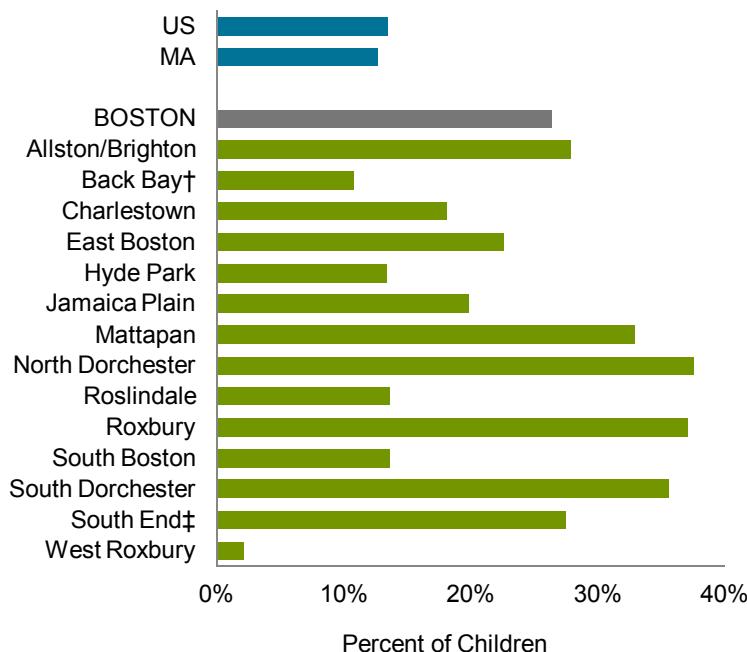
DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.8** presents parent or caregiver reports of neighborhood cohesion. Higher percentages of children in Massachusetts and the United States as a whole lived in households where their parent or caregiver reported high neighborhood cohesion than Boston children. In Boston, approximately three of five children (61.1%) resided in households where their parent or caregiver reported high neighborhood cohesion. A higher percentage of White children lived in households where their parent or caregiver reported high neighborhood cohesion than Black or Latino children.

## Health of Boston's Children

**Figure 5.9 Parents/Caregivers Who Felt Child Was Unsafe\* in Neighborhood, Ages 0-17**



| Location               | Percent of Children |
|------------------------|---------------------|
| United States          | 13.4% (12.9-14.0)   |
| Massachusetts          | 12.6% (10.3-14.8)   |
| BOSTON                 | 26.3% (23.2-29.4)   |
| Neighborhood           |                     |
| Allston/Brighton       | 27.8% (12.0-43.6)   |
| Back Bay <sup>†</sup>  | 10.7% (0.0-22.9)    |
| Charlestown            | 18.1% (1.6-34.6)    |
| East Boston            | 22.5% (9.1-35.9)    |
| Hyde Park              | 13.3% (4.4-22.3)    |
| Jamaica Plain          | 19.8% (9.4-30.2)    |
| Mattapan               | 32.9% (20.6-45.2)   |
| North Dorchester       | 37.5% (28.1-46.8)   |
| Roslindale             | 13.6% (6.0-21.1)    |
| Roxbury                | 37.0% (25.2-48.8)   |
| South Boston           | 13.6% (5.2-22.0)    |
| South Dorchester       | 35.6% (27.4-43.8)   |
| South End <sup>‡</sup> | 27.4% (12.5-42.4)   |
| West Roxbury           | 2.1% (0.1-4.1)      |

\*Parents/caregivers reported that they felt that child is either sometimes or never safe in community or neighborhood.

<sup>†</sup>Includes Beacon Hill, Downtown, the North End, and the West End

<sup>‡</sup>Includes Chinatown

NOTE: Data for children that live in Fenway are not presented due to insufficient sample size.

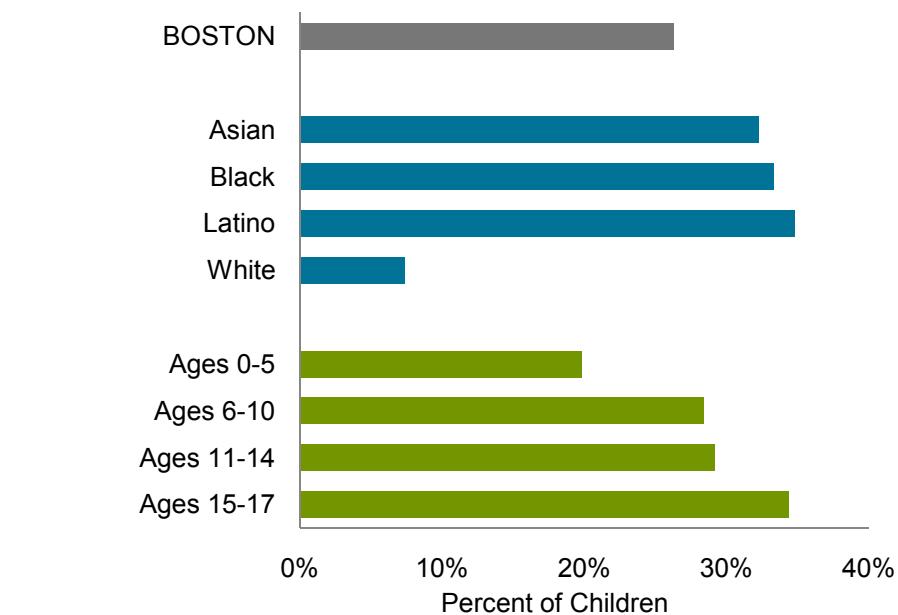
DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.9** presents data on parent and caregiver perceptions of neighborhood safety by neighborhood and compares Boston data with data for Massachusetts and the United States as a whole. A higher percentage of Boston children lived in households where their parent or caregiver felt that his or her child was unsafe in their neighborhood than children in Massachusetts and the United States as a whole.

lived in the Back Bay (including Beacon Hill, Downtown, the North End, and the West End), Hyde Park, Roslindale, South Boston, and West Roxbury lived in households where their parent or caregiver felt that his or her child was unsafe in their neighborhood than children in Boston overall.

**Figure 5.10 Parents/Caregivers Who Felt Child Was Unsafe\* in Neighborhood, Ages 0-17**



|                         |                   |
|-------------------------|-------------------|
| BOSTON                  | 26.3% (23.2-29.4) |
| Race/Ethnicity of Child |                   |
| Asian                   | 32.2% (12.1-52.3) |
| Black                   | 33.3% (27.3-39.2) |
| Latino                  | 34.8% (28.3-41.3) |
| White                   | 7.3% (4.5-10.2)   |
| Age                     |                   |
| Ages 0-5                | 19.8% (15.0-24.6) |
| Ages 6-10               | 28.4% (22.0-34.8) |
| Ages 11-14              | 29.1% (22.5-35.8) |
| Ages 15-17              | 34.3% (26.4-42.2) |

\*Parents/caregivers reported that they felt that child is either sometimes or never safe in community or neighborhood.

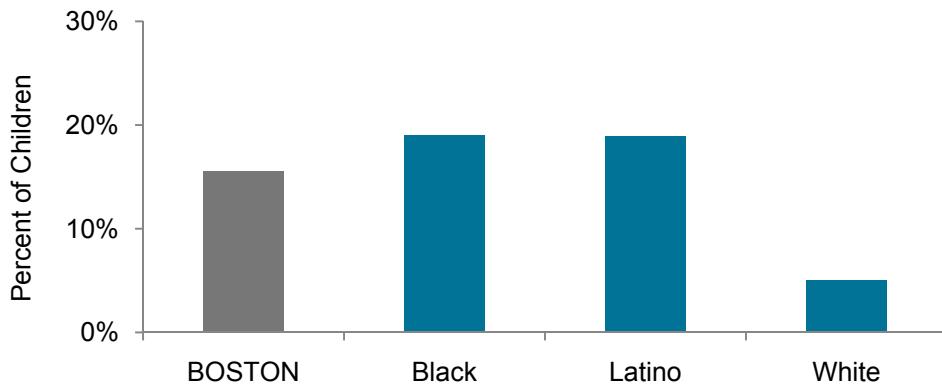
NOTE: Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.10** presents data on parent or caregiver perceptions of neighborhood safety by racial and ethnic group and age. A lower percentage of White children lived in households where their parent or caregiver felt that his or her child was unsafe in their neighborhood than Asian, Black, or Latino children. A lower percentage of children ages 0-5 years lived in households where their parent or caregiver felt that their child was unsafe in his or her neighborhood than children 15-17 years.

**Figure 5.11 Children Who Had Witnessed Violence in Their Neighborhood, Ages 0-17**



NOTES: Data for multiracial/other race not shown. Data for Asian children are not presented due to insufficient sample size.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 5.11** presents data on children who had witnessed violence in their neighborhood, as reported by parents or caregivers. In Boston, 15.6% of children had witnessed violence in their neighborhoods. A higher percentage of Black and Latino children had witnessed violence in their neighborhoods than White children.

## **Summary: Children and Families in Boston Communities**

In addition to experiences at home and at school, encounters that children and families have within their communities influence child health, well-being, and quality of life.

Involvement in sports, clubs, and youth organizations, such as the use of parks and playgrounds and community recreation centers, often occurs on a community basis. At the time of the survey, fewer children in Boston participated in these activities than children in Massachusetts and the United States overall. Among Black, Latino, and White children, participation in these activities was similar, although a higher percentage of White children than Black or Latino children had been to a park or playground in the past year. In addition, a higher percentage of White children lived in households where their parent or caregiver was satisfied with youth recreational activities available in their neighborhood, engaged in vigorous physical activity outside the school setting, and wore bicycle helmets while riding their bikes.

The community social environment can promote or detract from healthy development and resilience among children [1, 2, 9]. About three out of five Boston children lived in households where their parent or caregiver reported high (as opposed to medium or low) neighborhood cohesion, which is lower than reported neighborhood cohesion for Massachusetts and the United states as a whole. A greater percentage of Boston children had parents and caregivers that reported feeling that their child was unsafe in their neighborhood than children in Massachusetts and the United States. A higher percentage of White children lived in households where their parent or caregiver reported high neighborhood cohesion than Black or Latino children while a lower percentage of White children had parents or caregivers that reported feeling that their child was unsafe in their neighborhood than parents and caregivers of Asian, Black, and Latino children. While 15.6% of Boston children had witnessed violence in their neighborhoods, a higher percentage of Black and Latino children had witnessed violence than White children.

## Health of Boston's Children

### References:

1. Earls, F., & Carlson, M. (2001). The social ecology of child health and well-being. *Annual Review of Public Health*, 22(1), 143-166.
2. Komro, K. A., Flay, B. R., & Biglan, A. (2011). Creating nurturing environments: A science-based framework for promoting child health and development within high-poverty neighborhoods. *Clinical Child and Family Psychology Review*, 14(2), 111-134.
3. Trost, S. G., Rosenkranz, R. R., & Dzewaltowski, D. (2011). Physical activity levels among children attending after-school programs. *Medical Science Sports Exercise*, 40(4), 622-629.
4. Vandell, D. L., Pierce, K. M., & Dadisman, K. (2005). Out-of-school settings as a developmental context for children and youth. *Advances in Child Development and Behavior*, 33, 43-77.
5. Shernoff, D. J. (2010). Engagement in after-school programs as a predictor of social competence and academic performance. *American Journal of Community Psychology*, 45(3-4), 325-337.
6. Garcia, R., Flores, E. S., & Chang, S. M. L. (2003). Healthy children, healthy communities: Schools, parks, recreation, and sustainable regional planning. *Fordham Urban Law Journal*, 31, 1267.
7. Ebbeling, C. B., Pawlak, D. B., & Ludwig, D. S. (2002). Childhood obesity: public-health crisis, common sense cure. *The Lancet*, 360(9331), 473-482.
8. Rezendes, J. L. (2006). Bicycle helmets: overcoming barriers to use and increasing effectiveness. *Journal of Pediatric Nursing*, 21(1), 35-44.
9. Bernat, D. H., & Resnick, M. D. (2006). Healthy youth development: Science and strategies. *Journal of Public Health Management Practice*, Nov.(Supp), S10-S16.
10. Drukker, M., Kaplan, C., Feron, F., & Van Os, J. (2003). Children's health-related quality of life, neighbourhood socio-economic deprivation and social capital. A contextual analysis. *Social Science & Medicine*, 57(5), 825-841.
11. Carpiano R.M., Kimbro R.T. Neighborhood social capital, parenting strain, and personal mastery among female primary caregivers of children (2012). *Journal of Health and Social Behavior*, 53 (2), pp. 232-247
12. White, K. J. C., & Guest, A. M. (2003). Community lost or transformed? Urbanization and social ties. *City & Community*, 2(3), 239-259.
13. Wilkenfeld, B., Moore, K. A., Lippman, L. (2008). Neighborhood support and children's connectedness. *Child Trends*.
14. Herrenkohl, T. I., Maguin, E., Hill, K. G., Hawkins, J. D., Abbott, R. D., & Catalano, R. F. (2000). Developmental risk factors for youth violence. *Journal of Adolescent Health*, 26(3), 176-186.
15. Kendrick, D., Mulyaney, C., Burton, P., Watson, M. (2005). Relationships between child, family and neighborhood characteristics and childhood injury: A cohort study. *Social Science & Medicine*, 60, 1905-1915.
16. Finkelhor, D., Turner, H., Ormrod, R., Hamby, S., & Kracke, K. (2009) Children's exposure to violence: A comprehensive national survey. *DIANE Publishing*.
17. Fowler, P. J., Tompsett, C. J., Braciszewski, J. M., Jacques-Tiura, A. J., & Baltes, B. B. (2009). Community violence: A meta-analysis on the effect of exposure and mental health outcomes of children and adolescents. *Development and Psychopathology*, 21(1), 227.
18. Barr, S. C., Hanson, R., Begle, A. M., Kilpatrick, D. G., Saunders, B., Resnick, H., & Amstadter, A. (2012). Examining the moderating role of family cohesion on the relationship between witnessed community violence and delinquency in a national sample of adolescents. *Journal of Interpersonal Violence*, 27(2), 239-262.
19. Weir, L. A., Etelson, D., & Brand, D. A. (2006). Parents' perceptions of neighborhood safety and children's physical activity. *Preventive Medicine*, 43(3), 212-217.

**Chapter 6** starts with a demographic and socioeconomic profile of children with special health care needs (CSHCN) in Boston. The chapter includes data on the experiences of CSHCN in the health care system and in the contexts of home, school, and community. The term “children with special health care needs” is defined by the federal Maternal and Child Health Bureau (MCHB) to include children “who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally” [1]. This definition is operationalized through a set of screening questions which ascertain whether a particular child differs from peers in functional ability and/or needs more or specialized services, including medical care, therapies or medication [2]. This screener, used in national studies, was incorporated into the BSCH to permit identification of children with special health care needs in the Boston sample. Families that care for a child with special health care needs become uniquely familiar with health care and other service systems based on their heightened need for and increased interaction with them.



## Children with Special Health Care Needs at Home, at School, and in the Community

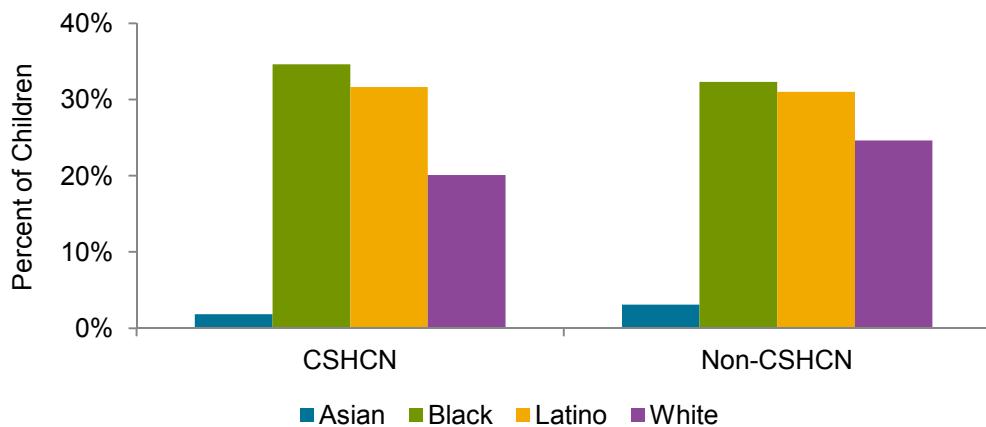
## **Demographic Characteristics of Children with Special Health Care Needs in Boston**

This section presents demographic data on CSHCN in Boston. Among Boston children, 19.3% met screening criteria for CSHCN. This percentage is similar to Massachusetts and national percentages of CSHCN [3]. Children who met the CSHCN criteria were found in all demographic groups: at all income levels, in all racial, ethnic, and language groups, and in all neighborhoods across the city.

Given the increased need for health and related services among CSHCN, comprehensive insurance coverage is crucial for these children and their families [4]. Research indicates that families with a child covered by Medicaid have fewer out-of-pocket expenses than their privately insured counterparts and are more likely to report their non-covered medical costs as being reasonable [4]. Findings as to whether having Medicaid or private insurance impacts access to health care and other services are inconsistent [4]. Although, research does indicate that privately insured families with a child with special health care needs were more likely to report having coverage that allowed them to see the providers they felt were needed for their child than families with a child covered by Medicaid [4]. For all children, including CSHCN, the percent of the population with private insurance has decreased steadily since the 1980s, while Medicaid coverage has been expanded [4].

## Demographic Characteristics of Children with Special Health Care Needs in Boston

**Figure 6.1 Children with Special Health Care Needs by Race and Ethnicity, Ages 0-17**



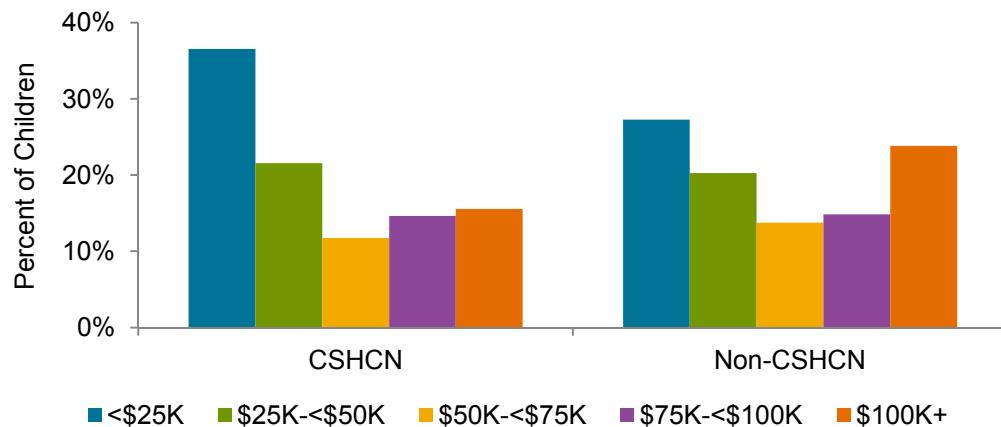
NOTE: Data for multiracial/other race are not shown.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.1** presents data on the racial and ethnic breakdown of CSHCN and non-CSHCN. The racial and ethnic distribution of CSHCN and non-CSHCN was similar. As shown in Figure 6.1, the percent of CSHCN in each racial and ethnic group was closely aligned with the percent of non-CSHCN in each racial and ethnic group.

**Figure 6.2 Children with Special Health Care Needs by Annual Household Income, Ages 0-17**



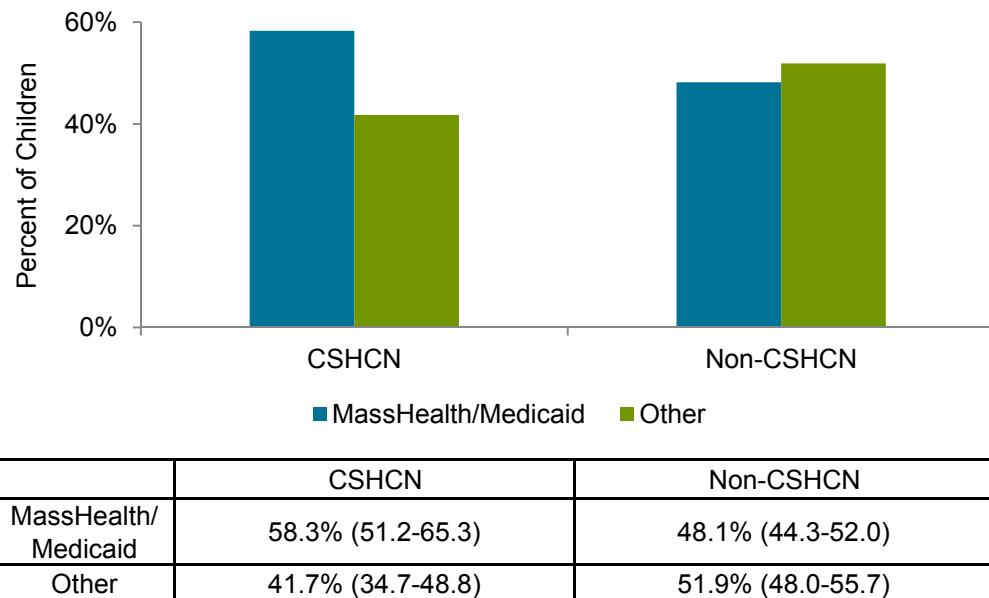
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.2** presents data on household income for CSHCN and non-CSHCN. There were no statistical differences in the percentage of CSHCN who resided in households in the first four income groups, compared with non-CSHCN. Compared to non-CSHCN, a smaller percentage of CSHCN are from the wealthiest families with income of \$100,000 or more. Among CSHCN, a higher percentage resided in households with annual incomes of less than \$25,000 than all other income levels. This may simply reflect the distribution of income among families in Boston: more families fell into this lowest income group than any other category (see Figure 1.6).

## Demographic Characteristics of Children with Special Health Care Needs in Boston

**Figure 6.3 Children with Special Health Care Needs by Health Insurance Type, Ages 0-17**

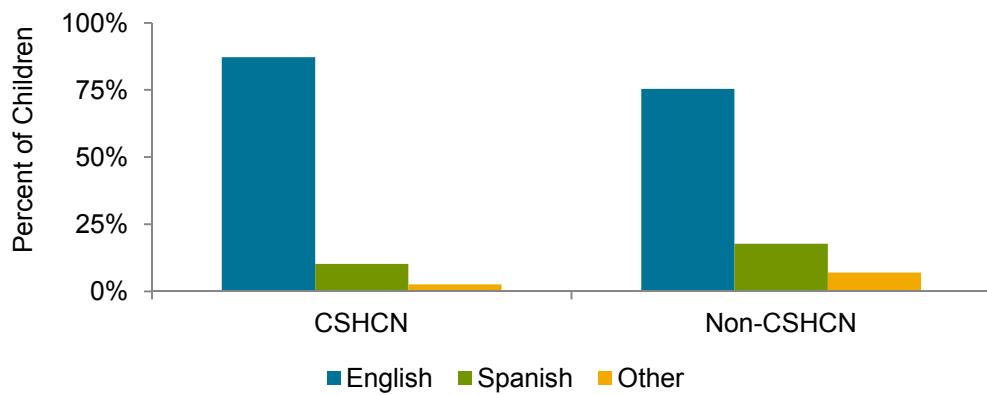


DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.3** presents percentages of CSHCN compared with non-CSHCN by health insurance type. There was no difference in the percentage of CSHCN by health insurance type compared with non-CSHCN.

**Figure 6.4 Children with Special Health Care Needs by Primary Language Spoken at Home, Ages 0-17**



DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.4** presents data on the percentage of CSHCN compared with non-CSHCN by primary language spoken at home. A higher percentage of CSHCN lived in households in which English was the primary language than non-CSHCN. A lower percentage of CSHCN lived in the households in which the primary language was neither English nor Spanish than non-CSHCN. These disparities may reflect real differences between populations; it is more likely, however, that they reflect more limited diagnosis of children in families whose primary language is neither English nor Spanish or more limited awareness of and access to enhanced services among these families.

## Children with Special Health Care Needs at Home

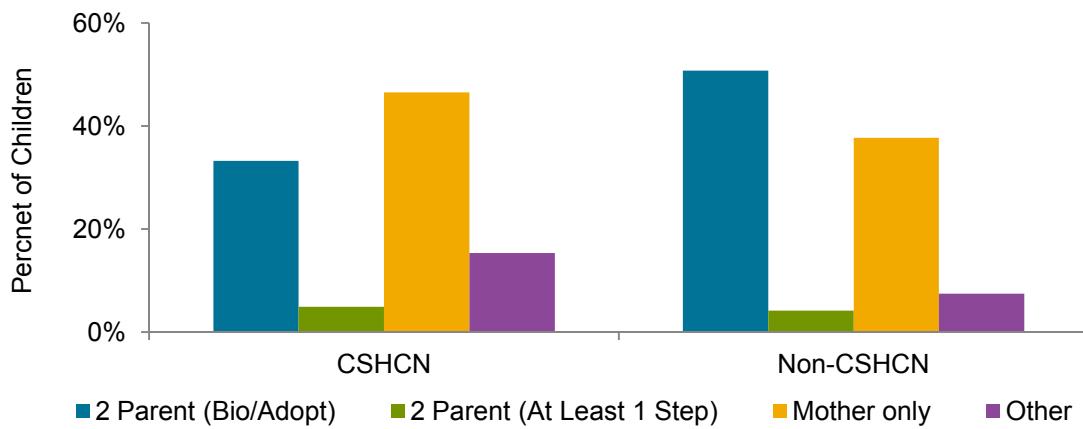
This section presents data on family structure and housing type for CSHCN compared to non-CSHCN. Also presented are data pertaining to CSHCN and exposure to a defined set of “adverse childhood experiences” (ACEs) known to affect development and long-term health in children (see Chapter 3 and Figures 3.11, 3.12, and 3.13).

Families that include a child with special health care needs are impacted in complex ways. In some cases, having a child with special health care needs can bring a family closer together, while in other cases, stressors unique to having a child with special health care needs can have negative impacts on families and the family structure [5]. Research shows that CSHCN are more likely to live with single parents, often their mothers, than other children [6]. In addition, CSHCN who do not live with either biological parent are more likely to live in households run by women [6]. Figure 6.5 presents data on family structure among CSHCN.

As for all children, safe and affordable housing is important for the health and well-being of CSHCN [7]. However, depending on the nature of the child’s disability and his or her need for specialized medical equipment, families with a CSHCN, particularly low-income families, may face special challenges in securing housing that is adequate for the entire family. Figure 6.6 presents data on housing type among CSHCN.

As described in Chapter 3 of this report, research indicates that children who have been exposed to ACEs have a greater chance of poor health outcomes in adolescence and adulthood. According to the BSCH, CSHCN in Boston have more exposure to ACEs than non-CSHCN. More research is needed, however, to clarify the nature of the increased exposure. Figure 6.7 presents data on the frequency with which CSHCN had a history of exposure to ACEs compared with non-CSHCN.

**Figure 6.5 Children with Special Health Care Needs by Family Structure, Ages 0-17**



|                                | CSHCN             | Non-CSHCN         |
|--------------------------------|-------------------|-------------------|
| 2 Parent (Biological/Adoptive) | 33.2% (26.6-39.9) | 50.7% (46.9-54.5) |
| 2 Parent (At Least 1 Step)     | 4.9% (2.0-7.8)    | 4.2% (2.6-5.7)    |
| Mother only                    | 46.5% (39.1-53.9) | 37.7% (33.9-41.5) |
| Other                          | 15.3% (10.2-20.5) | 7.4% (5.5-9.3)    |

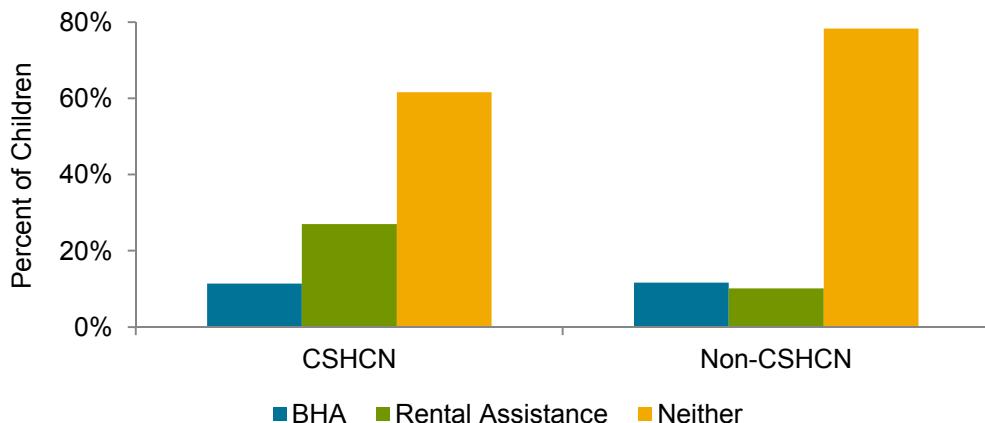
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.5** presents the percentage of CSHCN compared with non-CSHCN by family structure. A lower percentage of CSHCN lived in two-parent families than non-CSHCN. A higher percentage of CSHCN lived in other family structures (neither two parents nor mother only) than non-CSHCN.

## Children with Special Health Care Needs at Home

**Figure 6.6 Children with Special Health Care Needs by Housing Type, Ages 0-17**



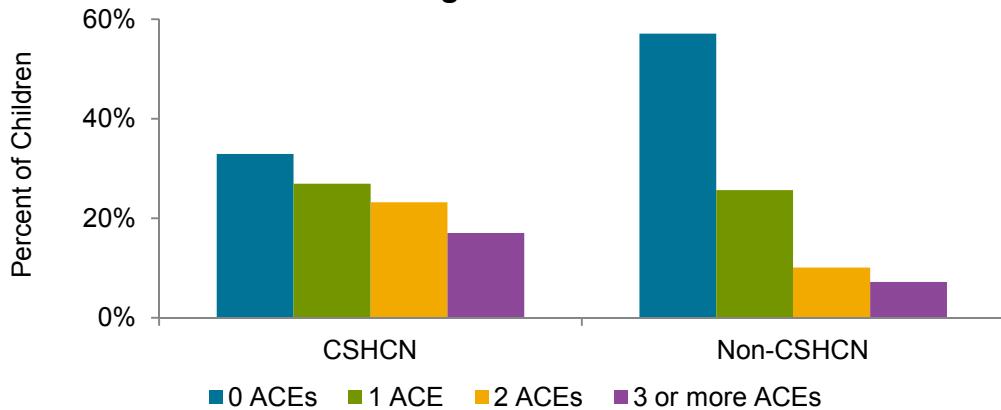
NOTE: Children whose parents/caregivers reported being BHA residents (BHA) live in a building owned by the Boston Housing Authority, whereas children whose parents/caregivers reported receiving rental assistance are part of a household that receives "Section 8" or another form of rental assistance.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.6** presents the percentage of CSHCN compared with non-CSHCN by housing type. A lower percentage of CSHCN lived in two-parent (biological/adoptive) families than non-CSHCN. There was no difference in the percentage of CSHCN residing in Boston Housing Authority housing (BHA), however, compared with non-CSHCN. Among non-CSHCN, the percentage of children residing in BHA households was similar to the percentage of those in households receiving rental assistance. However, among CSHCN, a higher percentage lived in households that received rental assistance than in BHA housing. This situation may be explained by a need to go outside Boston Housing Authority units to meet some accommodation need and/or priority status for rental assistance given to households that include a child or an adult with a disability.

**Figure 6.7 Adverse Childhood Experiences (ACEs) of Children with Special Health Care Needs, Ages 0-17**



DATA SOURCE: Boston Survey of Children's Health, 2012

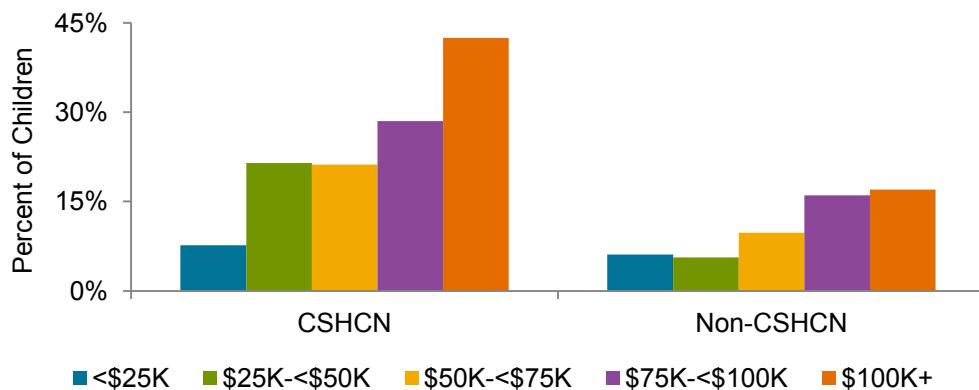
DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.7** presents data on exposure to ACEs among CSHCN and non-CSHCN. A higher percentage of CSHCN had two ACEs than non-CSHCN and a higher percentage of CSHCN had three or more ACEs than non-CSHCN.

## Children with Special Health Care Needs and the Cost of Health Care

This section presents data on out-of-pocket health care expenses for CSHCN. CSHCN and their families are uniquely reliant on health and related services (e.g. therapies, equipment manufacturers, etc). Frequent and sometimes specialized medical care for CSHCN can place a large financial burden on families [8]. More research is needed to clarify the extent to which family socioeconomic status impacts the level and variety of services that a child with special health care needs receives. Figure 6.8 presents data on yearly out-of-pocket expenditures of more than \$500 by families at different levels of annual household income.

**Figure 6.8 Parent/Caregiver Spent >\$500 on Child's Medical Expenses in Past Year by Annual Household Income, Children Ages 0-17**



|              | CSHCN             | Non-CSHCN         |
|--------------|-------------------|-------------------|
| <\$25K       | 7.7% (2.5-12.8)   | 6.1% (2.5-9.7)    |
| \$25K-\$50K  | 21.4% (7.0-35.8)  | 5.6% (2.2-9.1)    |
| \$50K-\$75K  | 21.2% (7.0-35.4)  | 9.7% (5.0-14.5)   |
| \$75K-\$100K | 28.5% (13.3-43.6) | 16.0% (8.4-23.7)  |
| \$100K+      | 42.4% (29.0-55.9) | 17.0% (11.7-22.3) |

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.8** presents data on yearly out-of-pocket expenditures of more than \$500 by families at different levels of household income. When comparing CSHCN and non-CSHCN whose parent or caregiver spent more than \$500, a higher percentage of CSHCN resided in households with an annual household income of \$100,000 or more compared to non-CSHCN. There were no differences between other annual household income levels. When comparing CSHCN whose parent or caregiver spent more than \$500, a lower percentage of CSHCN resided in households with an annual household income of less than \$25,000 compared to CSHCN residing in households with an annual household income of \$75,000 or more.

### **Children with Special Health Care Needs at School**

This section presents data on CSHCN in the school setting. CSHCN vary greatly in the nature, extent and complexity of their health care needs. Some may have complex physical needs but be unaffected in terms of cognition and behavior; others may have impairments entirely in the emotional, behavioral or developmental domains; still others are affected in multiple domains. These variations affect children's experiences at school in different ways.

An Individualized Family Service Plan (IFSP) is required by law for all children who receive Early Intervention (EI) services and their families [9]. EI services are available to children ages 0-3 with developmental disabilities or delays [9]. In Massachusetts, and in a small number of other states, EI services are also available to children 0-3 who are at high risk of delay [9]. Typical EI services include audiology or hearing services, speech and language services, counseling and training for family members and other caregivers, and a wide range of therapies [9]. Under Part C of the Individuals with Disabilities Education Act (IDEA) families and program staff create a plan that outlines all services necessary to support a child's needs and his or her families' priorities, resources, and concerns [10].

An Individualized Education Program (IEP) is required by law for all children enrolled in public school who receive special education and related services [11]. By law, an IEP is developed by parents, teachers, and other school staff in order to create an individualized program that will address a student's academic and functional skills [11]. IEPs are intended to allow accommodations unique to a student's ability to promote his or her academic and social success [11]. The components of a student's IEP are dictated by Part B of the Individuals with Disabilities Education Act (IDEA). Some IEP components required by law include annual goals for the child, a list of special education and related services to be provided to the child or on behalf of the child, and progress measurements, among many others [11]. IEPs are reviewed on a yearly basis and any necessary revisions are made [11]. Figure 6.9 presents information on Boston children with an IFSP or IEP among all children in Boston.

Many CSHCN are at increased risk for absenteeism, which can negatively impact academic performance by affecting their learning capabilities, engagement in school, and overall desire to learn [12]. In turn, poor academic performance can impact the health and well-being of CSHCN throughout the course of their lives [12]. Poor school attendance is also one of the strongest predictors of dropping out of high school, which limits employment and economic opportunities in adulthood [13]. Figure 6.10 presents information on missed school days for CSHCN compared to non-CSHCN.

## Children with Special Health Care Needs at School

**Figure 6.9 Percent of Children with Developmental Delays Requiring an IFSP or IEP, Ages 0-17**

|                                | %    | CI          |
|--------------------------------|------|-------------|
| BOSTON                         | 11.5 | (9.4-13.6)  |
| <b>Age</b>                     |      |             |
| Ages 0-5                       | 4.5  | (2.5-6.6)   |
| Ages 6-10                      | 10.6 | (7.5-13.7)  |
| Ages 11-14                     | 18.9 | (13.0-24.8) |
| Ages 15-17                     | 19.4 | (12.6-26.2) |
| <b>Gender</b>                  |      |             |
| Female                         | 8.2  | (5.6-10.9)  |
| Male                           | 14.9 | (11.6-18.1) |
| <b>Annual Household Income</b> |      |             |
| <\$25K                         | 16.7 | (11.5-21.9) |
| \$25K-<\$50K                   | 14.3 | (8.1-20.6)  |
| \$50K-<\$75K                   | 5.4  | (2.7-8.0)   |
| \$75K-<\$100K                  | 8.1  | (4.6-11.7)  |
| \$100K+                        | 10.2 | (6.7-13.6)  |

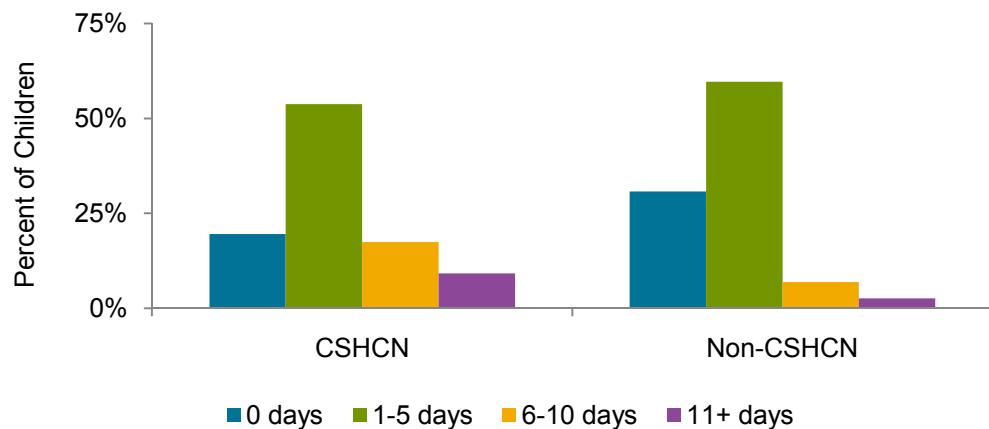
NOTE: These data are a percent of all Boston children, rather than children with special health care needs only.

DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.9** presents data on children whose parents or caregivers reported that his or her child was enrolled in Early Intervention or Special Education. Approximately one in nine Boston children (11.5%) were reported as having an Individualized Family Services Plan (IFSP – indicative of enrollment in Early Intervention) or Individualized Education Plan (IEP – indicative of enrollment in special education). Not surprisingly, a lower percentage of Boston children ages 0 to 5 years had an IEP or IFSP than children over age 5: some delays only become evident as a child grows and more sophisticated functioning is expected in all domains. A higher percentage of Boston's male children had an IEP or IFSP than female children and a higher percentage of children from households with annual incomes less than \$25,000 or between \$25,000 and less than \$50,000 had an IEP or IFSP than children from households with annual income between \$50,000 and less than \$75,000.

**Figure 6.10 School Days Missed in Past Year Due to Illness or Injury, Ages 6-17**



DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

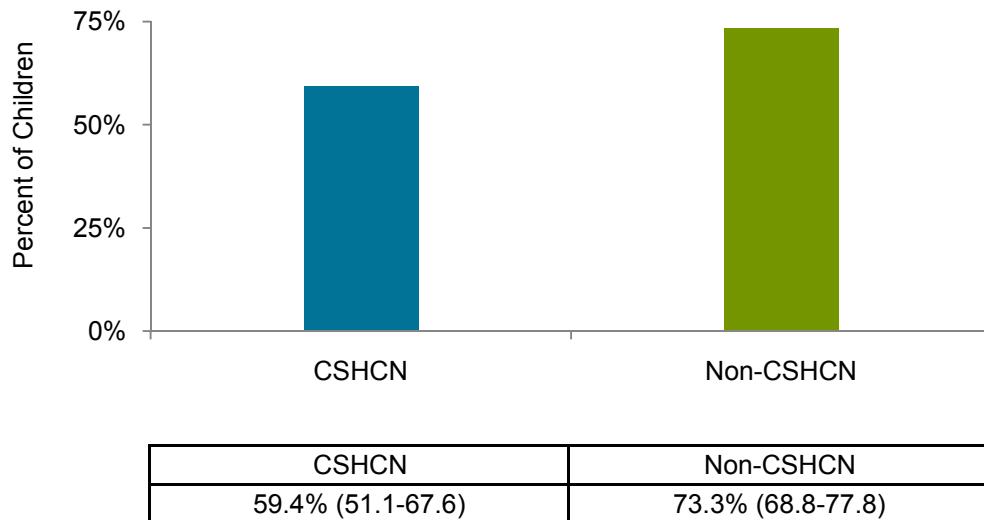
**Figure 6.10** presents data on the number of days of school missed in the past year due to illness or injury by CSHCN status. A higher percentage of CSHCN missed 6 to 10 days of school due to illness or injury than non-CSHCN. There were no significant differences between CSHCN and non-CSHCN in terms of school days missed for all other number of day categories. This pattern may reflect the fact that most CSHCN do not have needs that entail "sick days" out of school. The number who do spend time at home or in hospitals receiving medical care may show up in the figure for "11+ days missed" but represent a small segment of the CSHCN population, making it hard to draw statistical conclusions about them.

## **Children with Special Health Care Needs and Their Families in the Community**

This section presents data on engagement with community programs and resources among CSHCN. Participation in a wide range of community programs can be beneficial to the physical, mental, and emotional health of CSHCN [14]. Including CSHCN in programs provides them with opportunities to socialize and interact with peers and other members of their community which may promote attainment of new knowledge and skills, including social skills [14].

Participation in sports, recreation, and other physical activities, in particular, has been shown to provide specific benefits for CSHCN [15]. Regular physical activity is associated with achieving or maintaining healthy levels of muscular strength and endurance, two factors shown to help slow functional decline associated with some disabling conditions [15]. In addition, sports and other physical activities promote teamwork and the formation of friendships [14]. Participation in a variety of activities also promotes the expression of creativity, the development of coping abilities, and the development of self-identity, enhancing self-esteem and quality of life [16, 17]. Figure 6.11 presents data on CSHCN's participation in sports and afterschool activities, while Figure 6.12 presents data on CSHCN's use of community and recreational facilities.

**Figure 6.11 Child Participated in Sports or Club Activities After School or on Weekends, Ages 6-17**



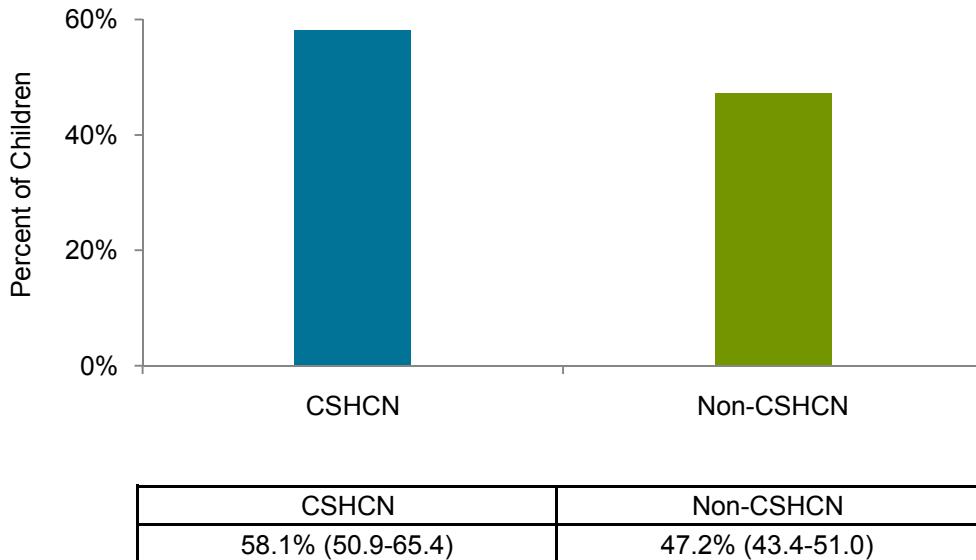
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.11** presents data on the percentage of CSHCN that participated in sports or a club activity after school or on weekends. Among children ages six to seventeen, approximately sixty percent of CSHCN participated in a sports or club activity after school or on weekends. This is lower than the percentage of non-CSHCN who participated in a sports or club activity.

## **Children with Special Health Care Needs and Their Families in the Community**

**Figure 6.12 Child Attended a Community or Recreation Center in Past Year, Ages 0-17**



DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 6.12** presents data on CSHCN who attended a community or recreation center in the past year. Approximately half of all Boston children (49.3%) attended a community or recreation center in the past year (data not shown). There were no differences between children with and without special health care needs in percentage of attendance.

### **Summary:**

### **Children with Special Health Care Needs at Home, at School, and in the Community**

Children with special health care needs are a diverse population in terms of demographics and experiences with the health care system, at home, and in the community. The percentage of CSHCN in Boston is similar to the percentage for Massachusetts overall and the nation. There were no differences comparing CSHCN to non-CSHCN by race and ethnicity or insurance type.

The challenges of caring for a child with a special health care need can be a strain on families [5]. A lower percentage of CSHCN lived in two-parent families than non-CSHCN and a higher percentage lived in households receiving public rental assistance. A higher percentage of CSHCN had been exposed to three or more ACEs than non-CSHCN.

About one in nine Boston children had an individualized family services plan (IFSP) or individualized education program (IEP), indicating enrollment in Early Intervention before age 3 or special education after age 3. A higher percentage of Boston's male children had an IEP or IFSP than female children and a higher percentage of children from households with annual incomes less than \$25,000 or between \$25,000 and less than \$50,000 had an IEP or IFSP than children from households with annual income between \$50,000 and less than \$75,000. A higher percentage of CSHCN missed 6-10 days of school due to illness or injury than non-CSHCN. Among children ages six to seventeen, a higher percentage of non-CSHCN participated in a sport or club activity than CSHCN. There was no difference in the percentage of participation of children with and without special health care needs at a community or recreation center in the past year.

## References

1. McPherson M, Arango P, Fox H, et al (1998). A new definition of children with special health care needs. *Pediatrics*, 102, 137-140.
2. Child and Adolescent Health Measurement Initiative (2012). Who Are Children with Special Health Care Needs (CSHCN). Data Resource Center, supported by Cooperative Agreement 1-U59-MC06980-01 from the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). Available at [www.childhealthdata.org](http://www.childhealthdata.org). Revised 4/2/12.
3. National Survey of Children's Health. NSCH 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. Retrieved 7/12/13 from [www.childhealthdata.org](http://www.childhealthdata.org).
4. Newacheck, P. W., Houtrow, A. J., Romm, D. L., Kuhlthau, K. A., Bloom, S. R., Van Cleave, J. M., & Perrin, J. M. (2009). The future of health insurance for children with special health care needs. *Pediatrics*, 123(5), e940-e947.
5. Reichman, N. E., Corman, H., & Noonan, K. (2008). Impact of child disability on the family. *Maternal and Child Health Journal*, 12(6), 679-683.
6. Cohen, P. N., & Petrescu-Prahova, M. (2006). Gendered living arrangements among children with disabilities. *Journal of Marriage and Family*, 68(3), 630-638.
7. Krieger, J., & Higgins, D. L. (2002). Housing and health: time again for public health action. *American Journal of Public Health*, 92(5), 758-768.
8. Hill, K. S., & Perrin, J. M. (2005). Financial burden for families of children with special health care needs. *Maternal and Child Health Journal*, 9(2), 207-218.
9. National Dissemination Center for Children with Disabilities (NICHCY) ( 2012). *Writing the IFSP for your child*. Accessed July 9, 2013 from: <http://nichcy.org/babies/ifsp>
10. Massachusetts Health and Human Services Department (2012). Individualized family service plan development. *Health and Human Services*. Accessed July 9, 2013 from: <http://www.mass.gov/eohhs/gov/departments/dph/programs/family-health/early-intervention/family-info/individualized-family-service-plan-ifsp-dev.html>
11. US Department of Education (2007). A guide to the individualized education program. *Department of Education*. Accessed July 9, 2013 from: <http://www2.ed.gov/parents/needs/speced/iepguide/index.html>
12. Bethell, C., Forrest, C. B., Stumbo, S., Gombojav, N., Carle, A., & Irwin, C. E. (2012). Factors promoting or potentially impeding school success: Disparities and state variations for children with special health care needs. *Maternal and Child Health Journal*, 16(1), 35-43.
13. Roby, D. E. (2004). Research on school attendance and student achievement: A study of Ohio schools. *Educational Research Quarterly*, 28(1), 3-16.
14. Murphy, N. A., & Carbone, P. S. (2008). Promoting the participation of children with disabilities in sports, recreation, and physical activities. *Pediatrics*, 121(5), 1057-1061.
15. Durstine, J. L., Painter, P., Franklin, B. A., Morgan, D., Pitetti, K. H., & Roberts, S. O. (2000). Physical activity for the chronically ill and disabled. *Sports Medicine*, 30(3), 207-219.
16. Dykens, E. M., Rosner, B. A., & Butterbaugh, G. (1998). Exercise and sports in children and adolescents with developmental disabilities. Positive physical and psychosocial effects. *Child and Adolescent Psychiatric Clinics of North America*, 7(4), 757-71.
17. Rice, S. G. (2008). Medical conditions affecting sports participation. *Pediatrics*, 121(4), 841-848.



**Chapter 7** presents data on the general and mental health status of children's parents and caregivers, childcare, and participation in public benefit programs. Parents and caregivers are among the most influential people in children's lives. As such, their experiences, health and well-being are important to consider among the factors that shape child health.



## Parent and Caregiver Experiences Raising Children in Boston

## **Health and Well-Being of Boston Parents and Caregivers**

This section includes information about the health and well-being of parents and caregivers, including general health and mental health status, ability to cope with the demands of parenthood, and frequency with which they may experience feelings of anger towards their children.

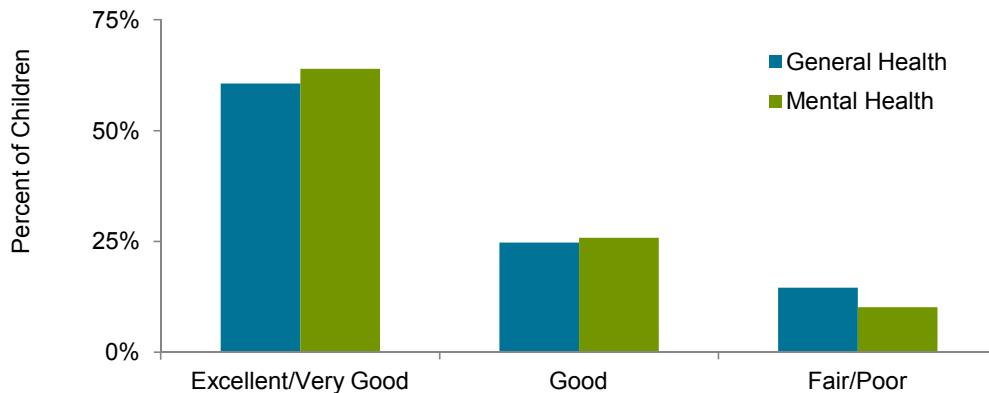
Parental physical and mental health can significantly affect a child's health and well-being. Studies indicate that children whose parents reported or suffered poor health were found to have poorer overall health [1]. Additionally, children whose parents were depressed or had other affective disorders were more likely to develop mood disorders and behavioral problems, as well as to have difficulty in emotional development and attachment [2, 3]. Much of what we know about parent health status and impact on child health stems from research on maternal depression during and in the months following pregnancy. Risk factors for maternal depression (both during and after pregnancy) include low self-esteem, low social support, and major life events such as experiencing a miscarriage or experiencing financial hardship [4]. Early detection and treatment of parental affective disorders and parenting stress are critical for improving both parental and child outcomes [5]. While prevalence of disorders such as maternal depression do not differ by socioeconomic status, studies show that low-income mothers are much less likely to be diagnosed or to access care [5]. Thus, by increasing access to care and improving low-income mothers' experiences with the health care system, important disparities in both maternal and child health may be narrowed [5]. Figures 7.1 through 7.3 present data on parent and caregiver general health status and mental health status by selected variables.

Multiple factors may make coping with the challenges of parenthood especially difficult for some parents. For example, parents of children with chronic health conditions tend to feel more stress from parenting, both directly relating to care for their child's health, and to parenting generally [6]. Low-income parents, parents with a history of depression, and parents with a history of abuse are at increased risk for parental depression or parenting stress [4]. Figure 7.4 presents data on parent and caregiver ability to cope with the demands of parenthood.

Intense and ongoing parental anger toward children, especially when anger and negative parenting behaviors are blamed on the child and viewed as unchangeable, is a risk factor for child maltreatment [7]. Figure 7.5 presents data on how often parents or caregivers felt angry with their child during the past month.

## Health and Well-Being of Boston Parents and Caregivers

**Figure 7.1 Parent/Caregiver Health Status,  
Children Ages 0-17**



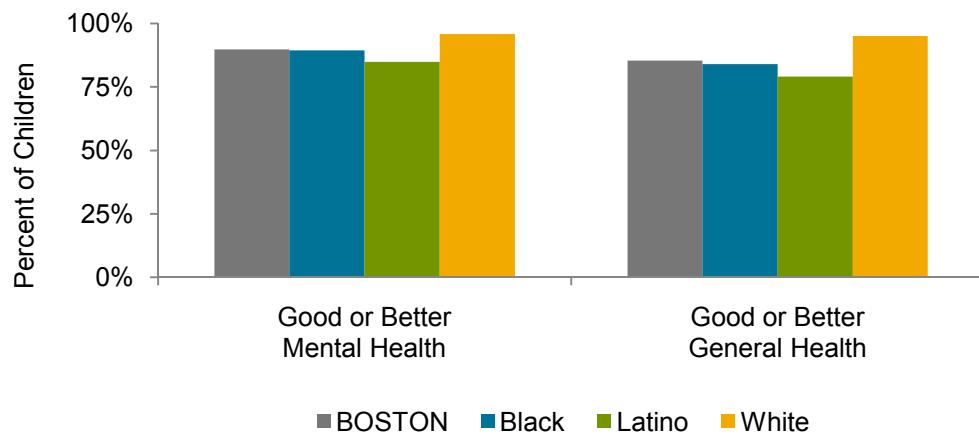
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 7.1** presents data on parent or caregiver general health and mental health status. In Boston, a higher percentage of children in good or better health had parents or caregivers who were also in good or better health, than children in fair or poor health. Conversely, a higher percentage of children in fair or poor health had parents or caregivers who were also in fair or poor health than children in good or better health. In Boston, over 60% of children had parents or caregivers in excellent or very good general health and excellent or very good mental health. Approximately 10% of children had parents or caregivers in fair or poor mental health. In addition, approximately 15% of children had parents or caregivers in fair or poor general health.

## Health of Boston's Children

**Figure 7.2 Parent/Caregiver Health Status,  
Children Ages 0-17**



|        | Good or Better<br>Mental Health | Good or Better<br>General Health |
|--------|---------------------------------|----------------------------------|
| BOSTON | 89.8% (87.7-92.0)               | 85.4% (82.9-87.9)                |
| Black  | 89.3% (85.6-93.1)               | 84.0% (79.5-88.4)                |
| Latino | 84.8% (80.0-89.7)               | 79.1% (73.6-84.6)                |
| White  | 95.8% (93.8-97.8)               | 95.1% (92.6-97.6)                |

NOTES: General and mental health for parents/caregivers are indicated as "good or better" where respondents reported them to be "excellent", "very good", or "good." Data for Asian children are not presented due to insufficient sample size. Data for multiracial/other race are not shown.

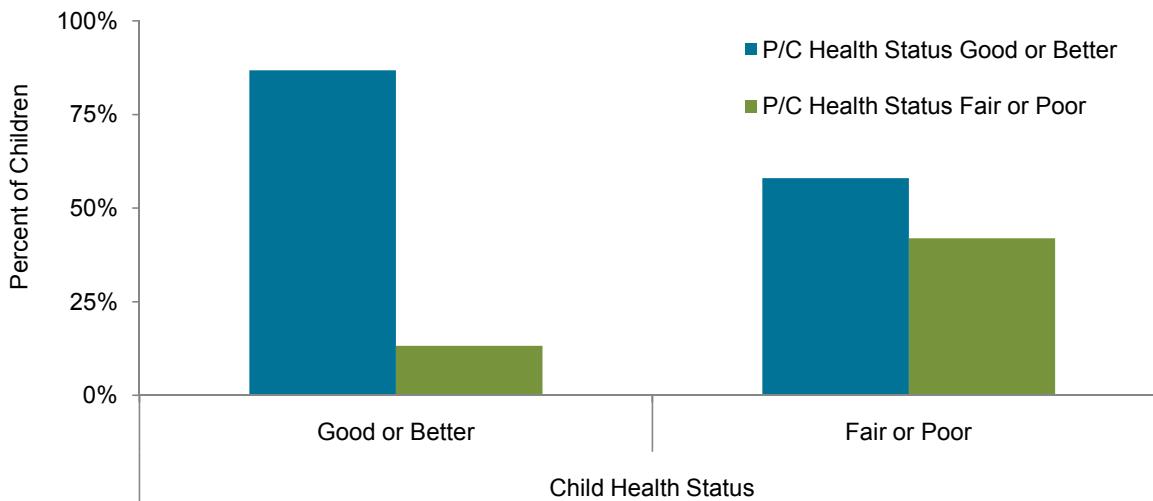
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 7.2** presents data on parent or caregiver general and mental health status by racial and ethnic group. In Boston, over 85% of children had parents or caregivers in good or better general health and good or better mental health. A higher percentage of White children had parents or caregivers in good or better general health and mental health than Black and Latino children.

## Health and Well-Being of Boston Parents and Caregivers

**Figure 7.3 Parent/Caregiver Health Status by Child Health Status, Children Ages 0-17**



NOTE: General health for children and for parents/caregivers is indicated as "good or better" where respondents reported them to be "excellent", "very good", or "good."

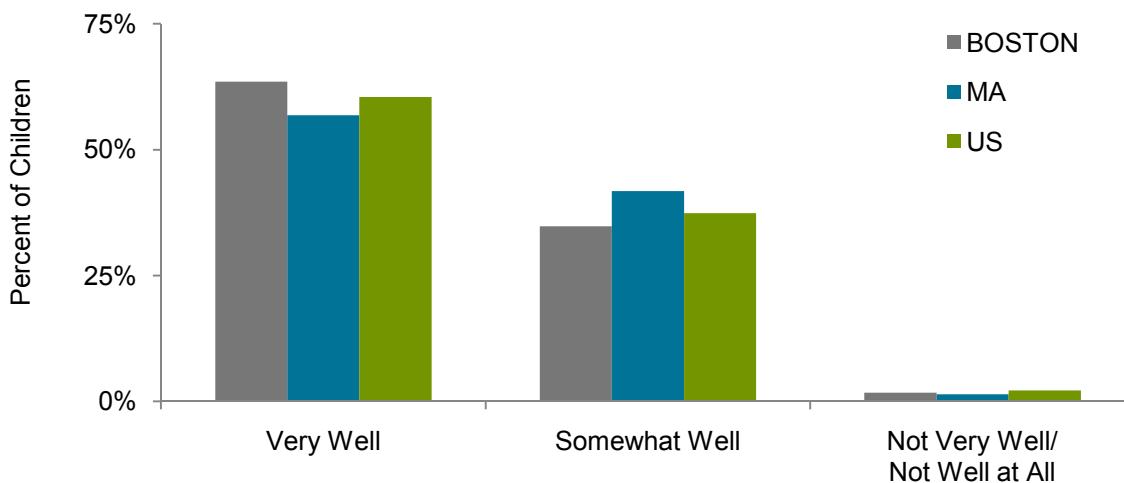
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 7.3** presents data on parent or caregiver health status by child health status. In Boston, a higher percentage of children in good or better health had parents or caregivers who were also in good or better health than children in fair or poor health. Conversely, a higher percentage of children in fair or poor health had parents or caregivers who were also in fair or poor health than children in good or better health.

## Health of Boston's Children

**Figure 7.4 Parent/Caregiver Ability to Cope with the Demands of Parenthood, Children Ages 0-17**



|               | Very Well         | Somewhat Well     | Not Very Well/<br>Not Well at All |
|---------------|-------------------|-------------------|-----------------------------------|
| BOSTON        | 63.5% (60.2-66.8) | 34.8% (31.5-38.0) | 1.7% (1.0-2.5)                    |
| Massachusetts | 56.8% (53.8-59.8) | 41.8% (38.8-44.7) | 1.4% (0.7-2.2)                    |
| United States | 60.5% (59.8-61.2) | 37.4% (36.7-38.1) | 2.2% (1.9-2.4)                    |

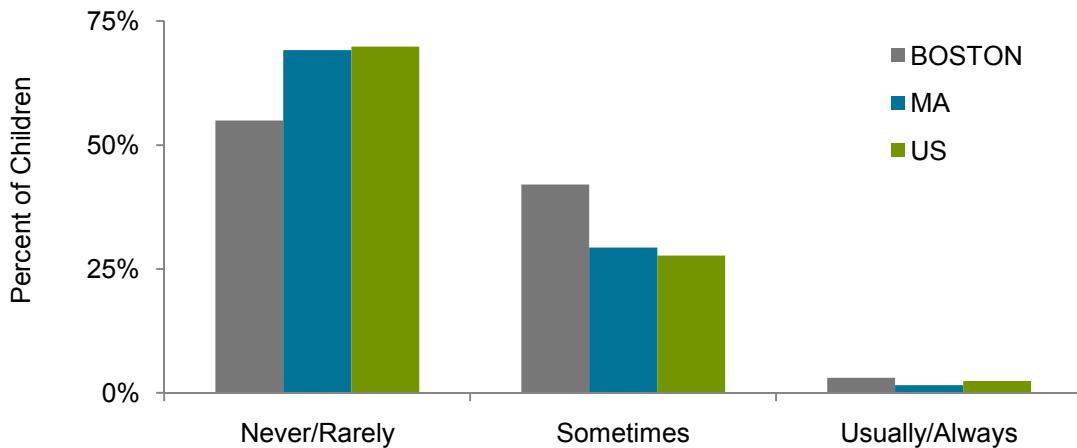
DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 7.4** presents data on parent or caregiver ability to cope with the demands of parenthood. In Boston, 63.5% of children had parents or caregivers who reported they were coping very well with the demands of parenthood. This percentage was higher than Massachusetts but similar to the United States.

## Health and Well-Being of Boston Parents and Caregivers

**Figure 7.5 Parent/Caregiver Felt Angry with Child During the Past Month, Children Ages 0-17**



DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 7.5** presents data on whether parents or caregivers felt angry with their child during the past month. In Boston, slightly more than half (54.9%) of all children had parents or caregivers who reported that they never or rarely felt angry with their child in the past month. This percentage was lower than the percentages for Massachusetts children and children in the United States.

## **Impact of Childcare on Family Employment and Participation in Public Benefit Programs**

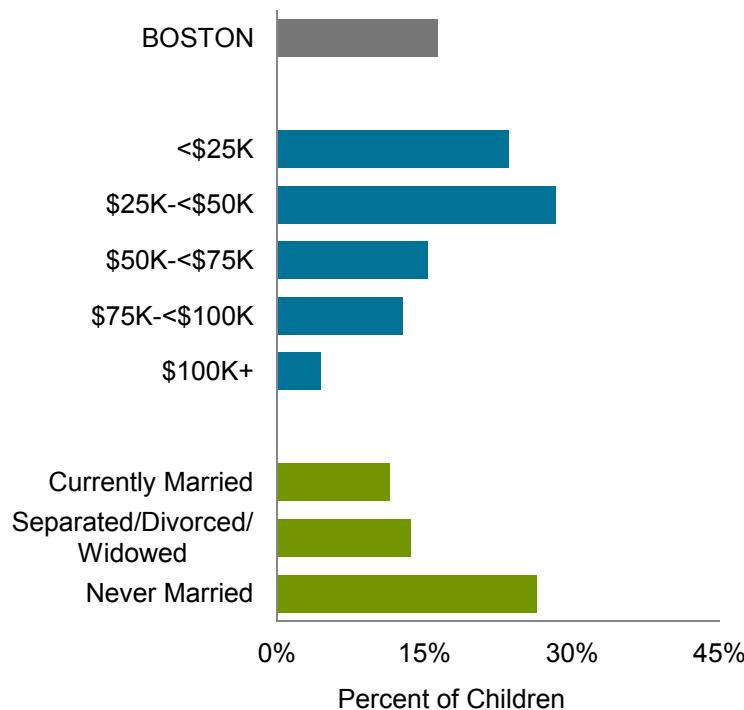
This section includes data on the impact of childcare on family employment, and parent and caregiver participation in public benefit programs. Each of these highlight practical challenges that parents and caregivers face on a daily basis and resources many rely upon to meet the basic needs of their families.

Access to childcare for young children, either at childcare centers or family daycare, is critical for working parents. Over the past several decades, there has been a marked increase in the number of families with two working parents, and single parent families in which the parent works [8]. Thus, demand for childcare at centers or family daycare has been consistently on the rise [8]. Childcare related problems such as affordability, unreliable childcare, or problems with a child's health that need parental attention have been linked to parental trouble obtaining and/or maintaining employment, especially among low income families [9, 10]. Research suggests that employment disruptions related to childcare are less common among families who receive childcare subsidies that help increase access to high-quality childcare options [11]. Figure 7.6 presents data on children whose family members' employment has been affected by childcare.

Poverty, especially during the early years of life, has a substantial effect on children's health and development [12]. Families' access to public benefit programs such as the Supplemental Nutrition Assistance Program or SNAP (formerly the food stamp program) and cash assistance can help reduce family financial burden and serve as a protective factor against the harmful effects of poverty, including food insecurity, poor nutrition, familial conflict and stress, and parental stress [12]. As an example, family enrollment in food stamp programs has been shown to decrease poor children's risk of hospitalization, poor health, iron deficiency, anemia, deficits in cognitive development, and behavioral and emotional problems [13]. Figure 7.7 presents data on children and/or family members who participated in public benefit programs.

## Impact of Childcare on Family Employment and Participation in Public Benefit Programs

**Figure 7.6 Children Whose Family  
Members' Employment was Affected by  
Childcare Issues, Ages 0-5**



|                                 |                   |
|---------------------------------|-------------------|
| BOSTON                          | 16.3% (12.0-20.5) |
| Annual Household Income         |                   |
| <\$25K                          | 23.6% (13.1-34.0) |
| \$25K-<\$50K                    | 28.3% (14.6-42.0) |
| \$50K-<\$75K                    | 15.3% (2.9-27.6)  |
| \$75K-<\$100K                   | 12.7% (5.2-20.2)  |
| \$100K+                         | 4.4% (1.4-7.4)    |
| Parent/Caregiver Marital Status |                   |
| Currently Married               | 11.4% (7.0-15.9)  |
| Separated/Divorced/<br>Widowed  | 13.5% (2.9-24.2)  |
| Never Married                   | 26.3% (16.2-36.5) |

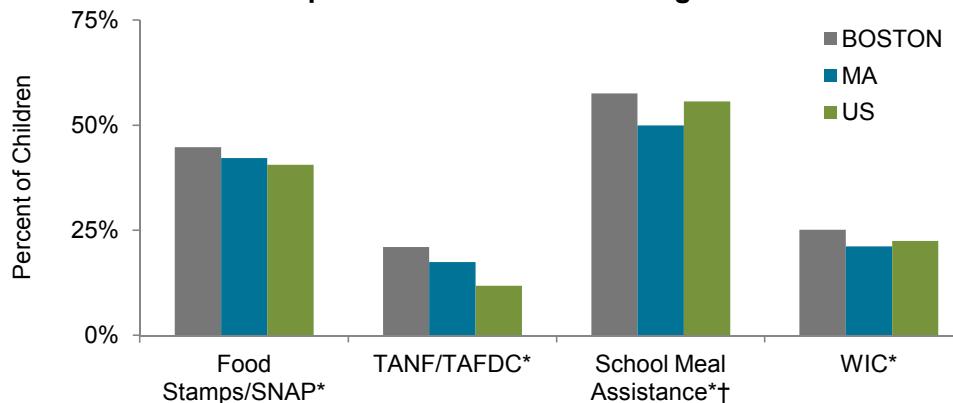
DATA SOURCE: Boston Survey of Children's Health, 2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 7.6** presents data on children whose family members' employment has been affected by childcare. In Boston, 16.3% of children under the age of six years had family members who encountered employment-related difficulties due to issues with childcare. Higher percentages of children who lived in households with annual incomes of less than \$25,000 or \$25,000 to less than \$50,000 had a family member who encountered employment-related difficulties than children living in households with annual income of \$100,000 or more. Also, a lower percentage of children whose parent or caregiver was currently married had a family member who encountered employment issues related to childcare than children whose parent or caregiver was never married.

## Health of Boston's Children

**Figure 7.7 Children and/or Family Members Who Participated in Public Benefit Programs**



\*Only asked of households with income less than or equal to 300% of FPL

†Only asked of households with more than one child aged 2 years and above

DATA SOURCES: Boston Survey of Children's Health, 2012; National Survey of Children's Health, 2011-2012

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

**Figure 7.7** presents data on children and/or family members who participated in public benefit programs. The parents or caregivers of children residing in households with annual incomes less than or equal to 300% of the federal poverty level (FPL) were asked about their participation in various government assistance programs. A similar percentage of Boston children compared with Massachusetts children and children in the United States participated in the following public benefit programs: food stamps or the Supplemental Nutrition Assistance Program (SNAP), school meal assistance (among children ages 2 years and older), and Women, Infants and Children (WIC). A higher percentage of Boston children resided in families who participated in transitional assistance programs such as Temporary Assistance for Needy Families, and Transitional Aid to Families with Dependent Children (TANF/TAFDC), than the United States overall.

## **Summary:**

### **Parent and Caregiver Experiences**

### **Raising Children in Boston**

Parents and caregivers are among the most influential people in children's lives. As such, the health and well-being of parents and caregivers can impact children's physical and emotional health and well-being. In Boston, a higher percentage of children in good or better health had parents or caregivers who also were in good or better health, compared with children in fair or poor health. A majority of Boston children had parents or caregivers in good or better general and mental health. However, a higher percentage of White children had parents or caregivers in good or better general health and mental health than Black and Latino children. Over half of Boston children had parents or caregivers who reported they were coping very well with the demands of parenthood, a proportion higher than in Massachusetts overall, but similar to the national percentage. A lower percentage of Boston children had parents or caregivers who reported that they never or rarely felt angry with their child recently than children in Massachusetts and the United States.

Access to reliable, high-quality childcare is critical for working parents and can be challenging. Many Boston parents have encountered employment-related difficulties due to issues with childcare. These difficulties were more prevalent among children living in low-income households and children living with parents who were never married than children living in households with annual incomes of \$100,000 or more and children living with married parents.

Access to public benefit programs can help reduce low-income families' financial burden and serve as a protective factor for children against the harmful effects of poverty. Among children residing in households with annual incomes less than or equal to 300% of FPL, a similar percentage of Boston children participated in some public assistance programs as children statewide and nationally. These included the Supplemental Nutrition Assistance Program (SNAP); school meal assistance; and Women, Infants, and Children (WIC). A higher percentage of Boston children lived in households that participated in transitional assistance programs such as Temporary Assistance for Needy Families and Transitional Aid to Families with Dependent Children (TANF/TAFDC) than the United States overall.

## Health of Boston's Children

### References

1. Case, A., & Paxson, C. (2002). Parental behavior and child health. *Health Affairs*, 21(2), 164-178.
2. Goodman, S. H., Rouse, M. H., Connell, A. M., Broth, M. R., Hall, C. M., & Heyward, D. (2011). Maternal depression and child psychopathology: A meta-analytic review. *Clinical child and family psychology review*, 14(1), 1-27.
3. Beardselee, W.R., Versage, E.M. & Gladstone, T.R. (1998). Children of affectively ill parents: A review of the past 10 years. *Journal of the American Academy of Child & Adolescent Psychiatry*, 37(11), 1134-1141.
4. Leigh, B., & Milgrom, J. (2008). Risk factors for antenatal depression, postnatal depression and parenting stress. *BMC psychiatry*, 8(1), 24.
5. McDaniel, M & Lowenstein, C (2013). Depression in Low-Income Mothers of Young Children: Are They Getting the Treatment They Need? *The Urban Institute*.
6. Cousino, M. K., & Hazen, R. A. (2013). Parenting Stress among Caregivers of Children with Chronic Illness: A Systematic Review. *Journal of Pediatric Psychology*.
7. Pidgeon, A. M., & Sanders, M. R. (2009). Attributions, parental anger and risk of maltreatment. *International Journal of Child Health and Human Development*, 2(1), 57-69.
8. Fox, L., Han, W. J., Ruhm, C., & Waldfogel, J. (2013). Time for children: Trends in the employment patterns of parents, 1967–2009. *Demography*, 50(1), 25-49.
9. Dodson, L. (2006). After welfare reform: You choose your child over the job. *Focus*, 24, 25-28.
10. Gordon, R. A., Kaestner, R., & Korenman, S. (2008). Childcare and work absences: Trade-offs by type of care. *Journal of Marriage and the Family*, 70, 239-254.
11. Forry, N. D., & Hofferth, S. L. (2011). Maintaining Work: The Influence of Childcare Subsidies on Childcare—Related Work Disruptions. *Journal of Family Issues*, 32(3), 346-368.
12. Duncan, G. J., & Brooks-Gunn, J. (2000). Family poverty, welfare reform, and child development. *Child development*, 71(1), 188-196.
13. Children's Sentinel Nutrition Assessment Program [C-SNAP] (2007). Food Stamps as Medicine: A New Perspective on Children's Health. *Children's Health Watch Special Report*.

# Boston Survey of Children's Health Questions used in Health of Boston's Children Report

## Notes about Survey Questions

In the following questions from the Boston Survey of Children's Health (BSCH), **[S.C.]** stands for "Survey Child", defined as the child selected as the subject of the survey. In households with multiple children 17 years old or younger, one child was selected at random to be the "Survey Child" (see "Methods" section for more information on selection of the "Survey Child").

**[MOTHER TYPE]** refers to a child's mother or other female caregiver and **[FATHER TYPE]** refers to a child's father or other male caregiver.

For questions that include the phrase [During the past 12 months/Since **[S.C.]**'s birth], respondents were asked about the past 12 months if **[S.C.]** was older than 1 year. Respondents were asked about the time since [his/her] birth if **[S.C.]** was younger than 1 year.

Many charts and tables throughout this report show data stratified by different variables. These include stratifications by household income group, child age group, child place of birth, family structure, health insurance type, highest level of parent/caregiver educational attainment, parent/caregiver marital status, race and ethnicity, child health status, special health care need status, and more. The BSCH survey questions listed below for each figure number only include questions directly related to the primary indicator presented in the figure, and do not include survey questions related to these stratifications. Figures that did not include BSCH data are not included below.

## Chapter 1: Demographic Profile of Boston's Children and Families

### Figure 1.4: Foreign-Born Children by Race and Ethnicity, Ages 0-17

BSCH Survey Question(s):

Was **[S.C.]** born in the United States?

### Figure 1.5: Primary Language Spoken at Home Among Households with Children, Ages 0-17

BSCH Survey Question(s):

What is the primary language spoken in your home?

### Figure 1.6: Annual Household Income Distribution of Families with Children, Ages 0-17

BSCH Survey Question(s):

Please think about your total combined FAMILY income during (FILL LAST CALENDAR YEAR) for all members of the family. Can you tell me that amount before taxes?

[INCLUDE MONEY FROM JOBS, CHILD SUPPORT, SOCIAL SECURITY, RETIREMENT INCOME, UNEMPLOYMENT PAYMENTS, PUBLIC ASSISTANCE, AND SO FORTH. ALSO, INCLUDE INCOME FROM INTEREST, DIVIDENDS, NET INCOME FROM BUSINESS, FARM, OR RENT, AND ANY OTHER MONEY INCOME RECEIVED.]

Note: If survey respondent did not provide a numerical estimate, they were provided a series of estimates, asking if their combined family income was more than or less than the estimate, to assess annual household income (estimates were in increments of \$10,000, 5,000, \$2,500, and \$1,000).

### Figure 1.9: Annual Household Income by Race and Ethnicity of Child, Ages 0-17

See BSCH question(s) used to determine household income above (Figure 1.6).

## **Health of Boston's Children**

### **Figure 1.10: Highest Level of Parent/Caregiver Educational Attainment by Race and Ethnicity of Child, Ages 0-17**

BSCH Survey Question(s):

What is the highest grade or year of school you have/[S.C.]'s [MOTHER TYPE] and/or [FATHER TYPE] has completed?

### **Figure 1.11: Employment Status of Parent/Caregiver, Children Ages 0-17**

BSCH Survey Question(s):

Are you currently working for pay?

Are you working full-time or part-time?

## **Chapter 2: Health and Health Services**

### **Figure 2.1: Child General Health, Ages 0-17**

BSCH Survey Question(s):

In general, how would you describe [S.C.]'s health? Would you say [his/her] health is excellent, very good, good, fair, or poor?

### **Figure 2.2: Children in Good or Better General Health, Ages 0-17**

See BSCH questions used to determine child general health above (Figure 2.1).

### **Figure 2.3: Child Weight Status Based on Body Mass Index (BMI), Ages 11-17**

BSCH Question(s):

Without shoes, how tall is [S.C.] now?

Without shoes, how much does [S.C.] weigh now?

(see Note to Readers section for information on how BMI was calculated and weight status determined)

### **Figure 2.4: Child Weight Status Based on Body Mass Index (BMI), Ages 11-17**

See BSCH questions used to determine weight status above (Figure 2.3).

### **Figure 2.5: Child Dental Health, Ages 1-7**

BSCH Question(s):

How would you describe the condition of [S.C.]'s teeth: excellent, very good, good, fair, or poor?

### **Figure 2.6: Children with Good or Better Dental Health Status, Ages 1-17**

See BSCH questions used to determine dental health status above (Figure 2.5).

### **Figure 2.7: Diagnoses of Children by Race and Ethnicity**

BSCH Question(s):

Has a doctor or other health care provider ever told you that [S.C.] had...

Attention Deficit Disorder or Attention-Deficit/Hyperactivity Disorder, that is, ADD or ADHD?

Depression?

Anxiety problems?

Behavioral or conduct problems, such as oppositional defiant disorder or conduct disorder?

Autism, Asperger's Disorder, pervasive developmental disorder, or other autism spectrum disorder?

Intellectual disability or mental retardation?

Cerebral palsy?

Speech or other language problems?

Migraine headaches?

Asthma?

Diabetes?

Epilepsy or seizure disorder?

A brain injury or concussion?

Blood problems such as anemia or sickle cell disease?

Any kind of food or digestive allergy?

### **Figure 2.8: Selected Conditions by Gender**

BSCH Question(s):

See BSCH questions used regarding diagnoses of specific conditions above (Figure 2.7).

### **Figure 2.9: Place that Child Usually Goes When He/She is Sick, Ages 0-17**

BSCH Question(s):

Is there a place that [S.C.] USUALLY goes when [he/she] is sick or you need advice about [his/her] health?

What kind of place is it?

What kind of place does [S.C.] go to most often?

Is it a doctor's office, emergency room, hospital outpatient department, clinic, or some other place?

### **Figure 2.10: Children Who Received Preventive Medical Care in Past Year, Ages 0-17**

BSCH Question(s):

During the past 12 months/Since [his/her] birth, how many times did [S.C.] see a doctor, nurse, or other health care provider for preventive medical care such as a physical exam or well-child checkup?

### **Figure 2.11 Children Who Received Preventive Dental Care in Past Year, Ages 1-7**

BSCH Question(s):

During the past 12 months, how many times did [S.C.] see a dentist for preventive dental care, such as check-ups and dental cleanings?

### **Figure 2.12: Children Who Had Seen a Specialist in Past Year, Ages 0-17**

BSCH Question(s):

Specialists are doctors like surgeons, heart doctors, allergy doctors, skin doctors, and others who specialize in one area of health care. During the past 12 months/Since [his/her] birth, did [S.C.] see a specialist?

### **Figure 2.13: Children with Health Insurance Coverage, Ages 0-17**

BSCH Question(s):

Does [S.C.] have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as MassHealth or Medicaid?

### **Figure 2.14: Insured Children with MassHealth/Medicaid Coverage, Ages 0-17**

BSCH Question(s):

Is that coverage MassHealth or Medicaid?

See BSCH questions used to determine health insurance coverage and type above (Figure 2.13).

### **Figure 2.15: Parent/Caregiver Spent More Than \$500 on Child's Medical Expenses in Past Year, Children Ages 0-17**

BSCH Question(s):

The next question is about the amount of money paid during the past 12 months/since [his/her] birth for [S.C.]'s medical care. Please do not include health insurance premiums or costs that were or will be reimbursed by insurance or another source. But do include out-of-pocket payments for all types of health-related needs such as co-payments, dental or vision care, medications, special foods, adaptive clothing, durable equipment, home modifications, and any kind of therapy. During the past 12 months/since [his/her] birth, would you say that the family paid more than \$500, \$250-\$500, less than \$250, or nothing for [S.C.]'s medical care?

### **Figure 2.16: Parent/Caregiver Had Problems Paying Child's Medical Bills in the Past Year, Children Ages 0-17**

BSCH Question(s):

In the past 12 months did your family have problems paying or were unable to pay any of [S.C.]'s medical bills? Include bills for doctors, dentists, hospitals, therapists, medication, equipment, or home care.

## **Health of Boston's Children**

### **Figure 2.17: Problems Encountered in Past Year When Child Needed Medical Care, Children Ages 0-17**

BSCH Question(s):

Please tell me yes or no which of the following have been a problem when [S.C.] needed medical care [in the past 12 months/since [his/her] birth]?

Could not afford care

Did not have insurance

There was a problem with my health plan

Could not find a doctor who accepts child's insurance

Could not get transportation/Had difficulty getting to doctor's office

Could not get or had difficulty getting an appointment

Could not take the time off of work

Was not satisfied with the doctor

Did not know where to find care

Did not know where to find a doctor who speaks the same language that I do

There was a vaccine shortage so my child could not get vaccinated

Did not have a referral for a specialist

### **Figure 2.18: How Often Parent/Caregiver Felt That Doctors Did Not Do Everything They Should for Their Child's Medical Care, Children Ages 1-17**

BSCH Question(s):

How often do you feel that doctors do not do everything they should for your child's medical care? Would you say frequently, occasionally, rarely, or never?

## **Chapter 3: Children at Home**

### **Figure 3.1: Family Structure of Child's Household, Children Ages 0-17**

BSCH Question(s):

What is your relationship to [S.C.]?

Including the adults and all the children, how many people live in this household?

For the other people that live in your household with you and [S.C.], what is their relationship to [S.C.]?

### **Figure 3.2: Marital Status of Parent/Caregiver Living with Child, Children Ages 0-17**

BSCH Question(s):

IF THE RESPONDENT WAS THE MOTHER: Are you and [S.C.]'s [FATHER TYPE] currently married, separated, divorced, or never married?

IF THE RESPONDENT WAS THE FATHER: Are you and [S.C.]'s [MOTHER TYPE] currently married, separated, divorced, or never married?

IF THE RESPONDENT WAS NEITHER THE MOTHER NOR THE FATHER, THEN READ: Are [S.C.]'s [MOTHER TYPE] and [FATHER TYPE] currently married, separated, divorced, or never married?

### **Figure 3.3: Children Who Lived in Homes Owned (Not Rented) by Parent/Caregiver, Ages 0-17**

BSCH Question(s):

Do you own or rent your home?

### **Figure 3.4 Children who Had Moved Residences More Than Twice, Ages 0-17**

BSCH Question(s):

How many times has [S.C.] ever moved to a new address?

### **Figure 3.5: Children who Lived in Public Housing or Households Receiving Rental Assistance by General Health Status, Ages 0-17**

BSCH Question(s):

Are you:

- (1) A public housing resident living in a building owned by the Boston Housing Authority;  
(2) Part of a household that receives rental assistance such as "Section 8" or any other rental assistance program; or  
(3) Neither of the above

**Figure 3.6: Days Per Week Child's Family Ate a Meal Together, Children Ages 0-17**

BSCH Question(s):

During the past week, on how many days did all the family members who live in the household eat a meal together?

**Figure 3.7: Usual Hours of Sleep Per School Night Children Ages 6-17**

BSCH Question(s):

How many hours of sleep does [S.C.] usually get on school nights?

**Figure 3.8: Time Spent on Average Weekday Watching TV/Videos or Playing Video Games, Children Ages 0-17**

BSCH Question(s):

On an average weekday, about how much time does [S.C.] usually spend in front of a TV watching TV programs, videos, or playing video games or with computers, cell phones, handheld video games, and other electronic devices, doing things other than schoolwork?

**Figure 3.9: Average Daily Sugar-Sweetened Beverages Consumed, Ages 0-17**

BSCH Question(s):

During the past 7 days, how many times did [S.C.] drink a can, bottle, or glass of soda or pop, such as Coke, Pepsi, or sweetened fruit,drinks, such as Kool-aid, cranberry juice cocktail or lemonade? DO NOT include 100% fruit juice or diet soda or diet pop.

**Figure 3.10: Children Who Lived in Households Where Someone Smokes Tobacco, Ages 0-17**

BSCH Question(s):

Does anyone living in your household use cigarettes, cigars, or pipe tobacco?

**Figure 3.11: Adverse Childhood Experiences (ACEs), Children Ages 0-17**

BSCH Question(s):

Since [S.C.] was born, how often has it been very hard to get by on your family's income – hard to cover the basics like food or housing? Would you say very often, somewhat often, rarely, or never?

Did [S.C.] ever live with a parent or guardian who got divorced or separated after [S.C.] was born?

Did [S.C.] ever live with a parent or guardian who died?

Did [S.C.] ever live with a parent or guardian who served time in jail or prison after [S.C.] was born?

Did [S.C.] ever see or hear any parents or adults in [his/her] home slap, hit, kick, punch, or beat each other up?

Did [S.C.] ever witness any violence in [his/her] neighborhood?

Did [S.C.] ever live with anyone who was mentally ill or suicidal, or severely depressed for more than a couple of weeks?

Did [S.C.] ever live with anyone who had a problem with alcohol or drugs?

**Figure 3.12: Frequency of Adverse Childhood Experience (ACEs), Children Ages 0-17**

For BSCH questions used to determine a child's exposure to Adverse Childhood Experiences, see above (Figure 3.11).

**Figure 3.13: Frequency of Adverse Childhood Experience (ACEs), Children Ages 0-17**

For BSCH questions used to determine a child's exposure to Adverse Childhood Experiences, see above (Figure 3.11).

## **Health of Boston's Children**

### **Figure 3.14: Children Born Prematurely by Federal Household Poverty Level, Ages 0-17**

BSCH Question(s):

Was [S.C.] born prematurely, that is, more than 3 weeks before [his/her] due date?

### **Figure 3.15: Age at Which Breastfeeding Stopped Among Children Who Were Fed Breast Milk, Ages 0-5**

BSCH Question(s):

Was [S.C.] ever breastfed or fed breast milk?

[IF YES] How old was [he/she] when [he/she] completely STOPPED breastfeeding or being fed breast milk?

### **Figure 3.16: Children Whose Parent/Caregiver Participated in an Infant Home Visiting Program, Ages 0-3**

BSCH Question(s):

Some new parents are helped by programs that send nurses, healthcare workers, social workers, or other professionals to their home to help prepare for the new baby or take care of the baby or mother. Between the time [you were / [his/her] mother was] pregnant with [S.C.] and up until the present day, did someone from such a program visit your home?

### **Figure 3.17: Children Who Received Care 10+ Hours/Week from a Non-Relative, Ages 0-5**

BSCH Question(s):

Does [S.C.] receive care for at least 10 hours per week from someone not related to [him/her]? This could be a day care center, preschool, Head Start program, nanny, au pair, or any other non-relative.

Note: Child care should be reported regardless of whether care is paid or unpaid, or provided by certified or uncertified providers. Occasional babysitting is not included.

## **Chapter 4: Children at School**

### **Figure 4.1: Type of School Enrolled in Last Year by Race and Ethnicity of Child, Ages 6-17**

BSCH Question(s):

At any time during the past 12 months, was [S.C.] enrolled in a public school, charter school, private school, parochial school, or home school?

What kind of school is [S.C.] currently enrolled in? Is it a public school, private school, home-school, parochial school, or charter school? IF THE CHILD WAS ENROLLED IN MORE THAN ONE TYPE OF SCHOOL DURING THE CURRENT OR LAST SCHOOL YEAR, ASK THE TYPE OF SCHOOL THAT THE CHILD HAS MOST RECENTLY ATTENDED.

### **Figure 4.2: School Days Missed in Past 12 Months Due to Illness or Injury, Ages 6-17**

BSCH Question(s):

During the past 12 months, about how many days did [S.C.] miss school because of illness or injury?

### **Figure 4.3: Children Who Ever Repeated a Grade in School Since Starting Kindergarten, Ages 6-17**

BSCH Question(s):

Since starting kindergarten, has [S.C.] repeated any grades?

### **Figure 4.4: Bullied in Past Year, Ages 6-17**

BSCH Question(s):

During the past 12 months, has [S.C.] ever been bullied?

### **Figure 4.5: Parent/Caregiver Satisfied With Quality of Child's Education, Ages 6-17**

BSCH Question(s):

How satisfied are you with the quality of education that [S.C.] receives at school? Would you say that you are very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?

### **Figure 4.6: Parent/Caregiver Felt Child was Safe at School, Children Ages 6-17**

BSCH Question(s):

How often do you feel [S.C.] is safe at school?

**Figure 4.7: Number of Times within Past 12 Months Parent/Caregiver Contacted by School for Problems with Child, Children Ages 6-17**

BSCH Question(s):

During the past 12 months, how many times has [S.C.]'s school contacted you or another adult in your household about any problems [he/she] is having with school?

**Chapter 5: Children and Families in Boston Communities**

**Figure 5.1: Participation in Afterschool Sports, Clubs, and/or Organizations in Past Year, Ages 6-17**

BSCH Question(s):

During the past 12 months, was [S.C.] on a sports team or did [he/she] take sports lessons, or participate in clubs or organizations after school or on weekends?

**Figure 5.2: Child Had Been to a Neighborhood Park or Playground in Past Year, Ages 0-17**

BSCH Question(s):

In the past 12 months, has [S.C.] been to a park or playground in your neighborhood?

**Figure 5.3: Child Had Been to a Community or Recreation Center in Past Year, Ages 0-17**

BSCH Question(s):

In the past 12 months, has [S.C.] been to a community center, a recreation center, or boys' or girls' club in your neighborhood?

**Figure 5.4: Parents/Caregivers Who Are Satisfied with Youth Recreational Activities by Race and Ethnicity of Child, Children Ages 0-17**

BSCH Question(s):

How satisfied are you with the youth recreational activities available in your neighborhood?

**Figure 5.5: Twenty or More Minutes of Vigorous Physical Activity, Ages 6-17**

BSCH Question(s):

During the past week, on how many days did [S.C.] exercise, play a sport, or participate in physical activity for at least 20 minutes that made [him/her] sweat and breathe hard?

**Figure 5.6: Child's Primary Mode of Exercise, Ages 0-17**

BSCH Question(s):

How does [S.C.] typically get most of his/her exercise? This might include playing on a sports team, in school gym class, or playing outdoors.

**Figure 5.7: Regular Helmet Use Among Children Who Ride Bicycles, Ages 1-17**

BSCH Question(s):

When [S.C.] is riding a bike, does [he/she] wear a helmet for...

- (1) All of [his/her] rides
- (3) Most of [his/her] rides
- (4) Some of [his/her] rides
- (6) Never
- (7) [he/she] does not have access to a helmet, or
- (8) [he/she] does not ride a bike

**Figure 5.8: Parent/Caregiver-Reported Neighborhood Cohesion, Ages 0-17**

BSCH Question(s):

How much do you agree or disagree with each of these statements about your neighborhood or community (definitely agree, somewhat agree, somewhat disagree, definitely disagree, don't know).

"People in this neighborhood help each other out."

"We watch out for each other's children in this neighborhood."

"If my child were outside playing and got hurt or scared, there are adults nearby whom I trust to help my child."

## **Health of Boston's Children**

### **Figure 5.9: Parents/Caregivers Who Felt Child was Unsafe in Neighborhood, Ages 0-17**

BSCH Question(s):

How often do you feel [S.C.] is safe in your community or neighborhood? Would you say never, sometimes, usually, or always?

### **Figure 5.10: Parents/Caregivers Who Felt Child was Unsafe in Neighborhood, Ages 0-17**

For BSCH questions used to determine parent/caregiver perceptions of neighborhood safety, see above (Figure 5.9)

### **Figure 5.11: Children Who Had Witnessed Violence in Their Neighborhood, Ages 0-17**

BSCH Question(s):

Did [S.C.] ever witness any violence in [his/her] neighborhood?

## **Chapter 6: Children with Special Health Care Needs at Home, at School, and in the Community**

### **Figure 6.1: Children with Special Health Care Needs by Race and Ethnicity**

BSCH Question(s):

The next questions are about any kind of health problems, concerns, or conditions that may affect [S.C.]'s behavior, learning, growth, or physical development.

Does [S.C.] currently need or use medicine prescribed by a doctor, other than vitamins?

Is [his/her] need for prescription medicine because of ANY medical, behavioral, or other health condition?

Is this a condition that has lasted or is expected to last 12 months or longer?

Does [S.C.] need or use more medical care, mental health, or educational services than is usual for most children of the same age?

Is [his/her] need for medical care, mental health or educational services because of ANY medical, behavioral, or other health condition?

Is this a condition that has lasted or is expected to last 12 months or longer?

Is [S.C.] limited or prevented in any way in [his/her] ability to do the things most children of the same age can do?

Is [his/her] limitation in abilities because of ANY medical, behavioral, or other health condition?

Is this a condition that has lasted or is expected to last 12 months or longer?

Does [S.C.] need or get special therapy, such as physical, occupational, or speech therapy?

Is [his/her] need for special therapy because of ANY medical, behavioral, or other health condition?

Is this a condition that has lasted or is expected to last 12 months or longer?

Does [S.C.] have any kind of emotional, developmental, or behavioral problem for which [he/she] needs treatment or counseling?

Has [his/her] emotional, developmental or behavioral problem lasted or is it expected to last 12 months or longer?

(See *Note to Readers* section for how children were determined to have a special health care need).

### **Figure 6.2: Children with Special Health Care Needs by Annual Household Income, Ages 0-17**

For BSCH questions used to determine CSHCN status, see above (Figure 6.1).

For BSCH questions used to determine annual household income, see above (Figure 1.6).

### **Figure 6.3: Children with Special Health Care Needs by Health Insurance Type, Ages 0-17**

For BSCH questions used to determine CSHCN status, see above (Figure 6.1).

### **Figure 6.4: Children with Special Health Care Needs by Primary Language Spoken at Home, Ages 0-17**

BSCH Question(s):

For BSCH questions used to determine CSHCN status, see above (Figure 6.1).

For BSCH questions used to determine primary language spoken at home, see above (Figure 1.5).

### **Figure 6.5: Children with Special Health Care Needs by Family Structure, Ages 0-17**

For BSCH questions used to determine CSHCN status, see above (Figure 6.1). For BSCH questions used to

determine family structure, see above (Figure 3.1).

### **Figure 6.6: Children with Special Health Care Needs by Housing Type, Ages 0-17**

For BSCH questions used to determine CSHCN status, see above (Figure 6.1).

For BSCH questions used to determine housing type, see above (Figure 3.5).

### **Figure 6.7: Adverse Childhood Experiences (ACEs) of Children with Special Health Care Needs, Ages 0-17**

For BSCH questions used to determine exposure to Adverse Childhood Experiences, see above (Figure 3.11).

### **Figure 6.8: Parent/Caregiver Spent >\$500 on Child's Medical Expenses in Past Year by Annual Household Income, Children Ages 0-17**

BSCH Question(s):

During the past 12 months/ Since [his/her] birth, would you say that the family paid more than \$500, \$250-\$500, less than \$250, or nothing for [S.C.]'s medical care?

### **Figure 6.9: Percent of Children with Developmental Delays Requiring an IFSP or IEP, Ages 0-17**

BSCH Question(s):

Does [S.C.] have any developmental problems for which [he/she] has a written intervention plan called an Individualized Family Services Plan or an IFSP? OR Individualized Education Program or IEP?]

### **Figure 6.10: School Days Missed in Past Year Due to Illness or Injury, Ages 6-17**

BSCH Question(s):

During the past 12 months, about how many days did [S.C.] miss school because of illness or injury?

### **Figure 6.11: Child Participated in Sports or Club Activity After or on Weekends, Ages 6-17**

BSCH Question(s):

During the past 12 months, was [S.C.] on a sports team or did [he/she] take sports lessons, or participate in clubs or organizations after school or on weekends?

### **Figure 6.12: Child Attended Community or Recreation Center in Past Year, Ages 0-17**

BSCH Question(s):

In the past 12 months, has [S.C.] been to a community center, a recreation center, or boys' or girls' club in your neighborhood?

## **Chapter 7: Parent and Caregiver Experiences Raising Children in Boston**

### **Figure 7.1: Parent/Caregiver Health Status, Children Ages 0-17**

BSCH Question(s):

Would you say that, in general, your health is excellent, very good, good, fair, or poor?

Would you say that, in general, your mental and emotional health is excellent, very good, good, fair, or poor?

### **Figure 7.2: Parent/Caregiver Health Status, Children Ages 0-17**

For BSCH questions used to determine parent/caregiver health status, see above (Figure 7.1)

### **Figure 7.3: Parent/Caregiver Health Status by Child's Health Status, Children Ages 0-17**

For BSCH questions used to determine parent/caregiver health status, see above (Figure 7.1)

### **Figure 7.4: Parent/Caregiver Ability to Cope with the Demands of Parenthood, Children Ages 0-17**

BSCH Question(s):

In general, how well do you feel you are coping with the day to day demands of [parenthood / raising children]? Would you say that you are coping very well, somewhat well, not very well, or not well at all?

### **Figure 7.5: Parent/Caregiver Felt Angry with Child During the Past Month, Children Ages 0-17**

BSCH Question(s):

During the past month, how often have you felt angry with [S.C.]?

## **Health of Boston's Children**

### **Figure 7.6: Children Whose Family Members' Employment was Affected by Child Care Issues, Ages 0-5**

BSCH Question(s):

During the past 12 months / Since [S.C.]'s birth, did you or anyone in the family have to quit a job, not take a job, or greatly change your job because of problems with child care for **[S.C.]**?

### **Figure 7.7: Children and/or Family Members Who Participated in Public Benefit Programs**

BSCH Question(s):

At any time during the past 12 months, even for one month, did anyone in this household receive any cash assistance from a state or city welfare program, such as Transitional Assistance, Massachusetts TANF or TAFDC?

During the past 12 months/Since [his/her] birth, did **[S.C.]**/any child in the household receive Food Stamps or Supplemental Nutrition Assistance Program benefits?

During the past 12 months, did **[S.C.]**/any child in the household receive free or reduced-cost breakfasts or lunches at school?

Does anyone who lives in the household currently receive benefits from the Women, Infants, and Children (WIC) Program?

In the last 12 months, did you or other adults in your household ever get emergency food from a church, a food pantry, or food bank?

In the last 12 months, did you or other adults in your household ever eat any meals at a soup kitchen or shelter?



