

## **State of Hunger in Massachusetts**

### **Detailed Methodology**

Poblacion A, Bovell-Ammon A, Cantave C, Cook J, Mills S, McAleer E, Ackerman M, Lemmerman J, Minc L, Bivona SL, Wang M, Ettinger de Cuba S. State of Hunger in Massachusetts – Detailed Methodology. Children’s HealthWatch, 2020.

### **Massachusetts Food Insecurity Microanalysis Data Results**

Beginning with the earliest available national estimates of food insecurity and hunger prevalence in 1997 based on data from the Current Population Survey (CPS), this specific document contains a time series of prevalence estimates of food insecurity for the state of Massachusetts disaggregated by race and ethnicity.

Though the CPS sample is substantial, for analyses involving several levels of disaggregation and/or geographies below the national level, some standard errors of estimates can become quite large, reducing data accuracy. By using data from the 3-year average datasets, measurement error was minimized leading to more accurate estimates. Thus, the prevalence estimates rely on three-year average CPS data covering the years 1997-2017.

### **East Boston Neighborhood Health Center Survey Results**

During the months of May to July of 2019, Children’s HealthWatch collected data from 296 East Boston Neighborhood Health Center (EBNHC) participants using the Community Data Collection and Analysis Tool which comprises 47 validated questions about socio-demographic characteristics, health conditions, economic circumstances, family hardships, receipt of food assistance from the public and private food assistance system, family and neighborhood strengths, and personal experiences of discrimination. Survey participants each received a \$10 grocery gift card as compensation for their participation.

Despite the possibility of accessing the survey from different digital platforms (smartphones, tablets, and other devices), the majority of participants used available computers at the Health Center. In addition, participants relied on EBNHC care navigators to help them to fill in the survey if necessary. Participants were not tracked by the tool and no personally identifying information was collected during this research. Study data were collected and managed using REDCap electronic data capture tools hosted at Boston University, CTSI 1UL1TR001430.<sup>1</sup> REDCap (Research Electronic Data Capture) is a secure, web-based application designed to support data capture for research studies, providing 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources.

### **Participant Characteristics**

The first 22 questions were drawn from the Children's HealthWatch survey, an ongoing cross-sectional study monitoring the health and well-being of young children and families in medical centers across the United States. Participants provided information on self-identified race, ethnicity and sexual identity, education attainment, marital and employment status, number of jobs and hours worked, health insurance and health status of both adults and children, and number of household members younger and older than 17 years. In addition, participants responded to household hardships questions, such as food insecurity, housing instability, household energy insecurity, and problems getting childcare and health care. The survey was available in English and Spanish.

## Measures

**Race and ethnicity:** The survey employed the standard two-part US Census question asking about Hispanic or Latinx ethnicity and then a more detailed question about race. For context, it is important to define terminology used in this report. Latinx: Gender neutral term describing someone living in the United States with origins from Mexico, Cuba, the Dominican Republic, Puerto Rico, and Central or South America (this is a newer term that encompasses people often referred to as Hispanic and Latino). This is the largest ethnic group residing in East Boston according to the latest decennial Census 2010 (52.9%).<sup>2</sup> White: A term used to describe a socially based, racial classification of those with light toned skin who do not identify as a person of color or Latinx. It frequently refers to those with European ancestry living in the United States. People who identify as white comprised 37.2 percent of East Boston's population in 2010. Black or African American: Black is a term used to describe a socially based, racial classification of those with dark-toned skin or what are thought to be non-European features, and frequently refers to those with ancestry in Africa. African American is a term that is often used to describe Black Americans who share a long history in the US and whose ancestors were enslaved by whites. Black and African Americans constitute a small percentage of East Boston's population (3.2% in 2010).

Since racial and ethnic identities are social constructs, data were described by ethnic origin among those who identified themselves as Latinx. Race followed the same rationale and was shown by participants' cultural/country of origin, skin tone, and ethnic identities.

**Marital status:** participants reported their current marital status. For analytic purposes, the variable was categorized as having a partner (married/cohabitation) or not having a partner (single/separated/divorced/widowed).

**Education Attainment:** Participants indicated their highest level of education from "some high school or less", "high school graduate or GED", "technical school or some college", "college graduate", or Master's level or higher".

**Employment:** Participants stated their current employment status. If employed, they also specified number of jobs and hours worked per week.

**Adult and Child Health Insurance:** Participants indicated type(s) of health insurance they and their children have. For analytic purposes, the variable was categorized as public insurance versus private insurance.

**Adult and Child Health Status:** Participants were asked to rate their own health and their child's general health using an adapted version of the single-validated health status question from the National Health and Nutrition Examination Survey (NHANES) and oral health using a question adapted from the Pediatric Oral Health Quality of Life survey.<sup>3</sup> Adult and children's health status were categorized as excellent/good or fair/poor.

**Food insecurity:** Participants responded to the Hunger Vital Sign™,<sup>4</sup> which is the first two items from the United States Household Food Security Survey Module (HFSSM): "Within the past 12 months you worried whether your food would run out before you got money to buy more" and "Within the past 12 months the food you bought just didn't last and you didn't have money to get more." Households of participants who endorsed either "Always true" or "Sometimes true" to either or both questions were classified as food insecure.

**Housing Instability:** Families were categorized as experiencing housing instability if they reported one or more of the following: (1) being behind on rent or mortgage in the previous year (2) moving  $\geq 2$  times in the past year (multiple moves), and/or (3) homelessness within the child's lifetime (living in a shelter, motel, temporary or transitional living situation, or scattered-site housing or no steady place to sleep at night).<sup>5</sup>

**Energy Insecurity:** Participants responded to the Energy Vital Sign<sup>6</sup> and their households classified as energy insecure if they reported one or more of the following circumstances in the past year: utility shutoff threatened or occurred, cooking stove used for heat, and one or more days without necessary heat or cooling.

**Child Care Constraints:** Participants indicated whether problems accessing childcare made it difficult for them to work or study.

**Health Care Hardships:** This domain includes **forgone care and health cost sacrifices**. Forgone care refers to a household member who had unmet needs for health care services, prescriptions, and/or dental care because of the inability to afford care. Health cost sacrifices refer to families struggling to afford other basic needs because of out-of-pocket medical spending. This was measured by asking caregivers whether the cost of medical care or prescription medications made it extremely difficult to afford basic needs such as food, housing, or utilities.<sup>7</sup>

**Program Participation:** Participants reported current household participation in the following programs: the Supplemental Nutrition Assistance Program (SNAP), Medicaid, Earned Income Tax Credit (EITC), Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), subsidized housing or public housing, energy or water assistance, SSI, SSI-disability, Temporary Assistance for Needy Families (TANF), Head Start, free or reduced priced school meals, summer meals, childcare subsidy, and/or unemployment insurance.

**Voter registration:** participants responded to their likelihood to register to vote using the Pew Research Center question.<sup>8</sup>

**Family and Neighborhood Protective Factors:** Family protective factors questions were adapted from the Parent's Assessment of Protective Factors (PAPF).<sup>9</sup> Neighborhood and Community questions were drawn from the National Survey of Children's Health 2016.<sup>10</sup>

**Experiences of Discrimination (EOD):** A validated set of questions asks how many times someone has experienced discrimination at any time in their life.<sup>11</sup> After each question, the participant indicates one of the following: Never, Once, Two or Three times, Four or more times. Discrimination includes having been prevented from doing something, having been hassled, or having been made to feel inferior in a variety of situations, such as in school, at work or receiving medical care, due to one's race, ethnicity, or color. For analytic purposes, the variable was categorized as "no experiences of discrimination", "experienced discrimination in one or two settings" or "experienced discrimination in three or more settings".

Given the research interests of the Project Bread and Children's HealthWatch, the EOD survey was adapted from the original settings to incorporate "assistance programs such as SNAP (food stamps), WIC, or welfare", "assistance programs such as a food pantry, backpack program, soup kitchen or summer food program", and "Health Center or Food Source Hotline".

### **EBNHC Quantitative Analysis**

Given the small sample size collected for this project, descriptive statistics were performed using Pearson's chi-squared test with a significance level of  $p < 0.05$  using Stata/IC 14 (StataCorp LP, College Station, Texas). The report contains statistical analysis for differences by food security status for economic hardships, program participation, family and neighborhood protective factors and experiences of discrimination. Focus group participants each received a \$25 grocery gift card as compensation for their participation.

### **East Boston Neighborhood Health Center Focus Group Results**

To complement the quantitative findings, Project Bread conducted a series of two focus groups in December 2019 at East Boston Neighborhood Health Center. The purpose of the focus groups was to more fully explore how individuals in this community access federal nutrition programs and the specific barriers they face in doing so.

EBNHC staff assisted in recruiting participants and provided translation services and childcare for families. Project Bread provided funding to support \$25 grocery gift cards for each participant and healthy snacks for the sessions. Each session was 90 minutes long and audio was recorded with participant consent. Consent forms were given to participants to sign at the beginning of each focus group; the Spanish-speaking translator explained the content of the consent form for the participants to understand. No personally identifiable information was collected during this research.

The protocol focused on four federal nutrition programs: SNAP, WIC, School Meals, and Summer Meals. At each session, notes were taken by a fluent Spanish-speaker and have been combined with the audio recordings to produce a summary of findings. Findings from the focus groups adds details to the quantitative survey responses in order to tell a more complete story of the experiences of members of the East Boston community.

## Advisory Committee

Recognizing that hunger and food insecurity affect large, diverse swaths of society, and that institutionalized discrimination and inequity exacerbate these conditions for women (especially mothers), immigrants, people of color and those with low-incomes, Children's HealthWatch and Project Bread formed a racially diverse advisory group of experts in food insecurity, racial equity and other related issues to enhance the understanding of the research results. This team of experts ensured that issues related to social justice regarding interpretation of the research results, and framing and messaging of the report were accurate, appropriate, and sensitive. The group convened at four different key points in time to provide critical review and guidance on: 1) the draft research plan, 2) the preliminary research results, 3) the final research results and policy recommendations, draft project report and messaging, and 4) the final report and draft dissemination plan.

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<sup>1</sup> Paul A. Harris, Robert Taylor, Robert Thielke, Jonathon Payne, Nathaniel Gonzalez, Jose G. Conde, Research electronic data capture (REDCap) – A metadata-driven methodology and workflow process for providing translational research informatics support, *J Biomed Inform.* 2009 Apr;42(2):377-81.

<sup>2</sup> Boston Public Health Commission – Health of Boston 2016-2017. Chapter 1 Demographics. Available at: [https://www.bphc.org/healthdata/health-of-boston-report/Documents/4\\_C1\\_Demographics\\_Pages%20from%202016-17\\_HOB\\_final-4.pdf](https://www.bphc.org/healthdata/health-of-boston-report/Documents/4_C1_Demographics_Pages%20from%202016-17_HOB_final-4.pdf)

<sup>3</sup> Centers for Disease Control and Prevention. National Health and Nutrition Examination Survey: NHANES III (1988–1994) [Internet]. Atlanta (GA): CDC; [cited 2019 Feb 28]. Available at: <https://wwwn.cdc.gov/nchs/nhanes/nhanes3/default.aspx> [Google Scholar](#)

<sup>4</sup> Hager ER, Quigg AM, Black MM, et al. Development and validity of a 2-item screen to identify families at risk for food insecurity. *Pediatrics.* 2010; 126:e26–e32.

<sup>5</sup> Sandel M, Sheward R, Ettinger de Cuba S, et al. Unstable housing and caregiver and child health in renter families. *Pediatrics.* 2018;141(2):e20172199

<sup>6</sup> Cook JT, Frank DA, Casey PH, Rose-Jacobs R, Black MM, Chilton M et al. A brief indicator of household energy security: associations with food security, child health, and child development in US infants and toddlers. *Pediatrics.* 2008; 122(4):e867– 75.

<sup>7</sup> Ettinger de Cuba S, Coleman S, Jeng K, Cook J, Chilton M, Cutts DB. Health care costs, child health and development, and household expense trade-offs. Paper presented at: Pediatric Academic Societies Annual Conference; 2010 May 2; Vancouver, BC.

<sup>8</sup> Pew Research Center. Available at: <http://assets.pewresearch.org/wp-content/uploads/sites/5/2014/10/Pew-Research-2012-Election-Questions.pdf>

<sup>9</sup> Center for the Study of Social Policy. Parent's Assessment of Protective Factors (PAPF). Available at: <https://cssp.org/resource/papf-instrument-english/>

<sup>10</sup> Data Resource Center for Child & Adolescent Health. National Survey of Children's Health 2016. Available at: [http://childhealthdata.org/learn/NSCH/topics\\_questions/2016-nsch-guide-to-topics-and-questions#sql](http://childhealthdata.org/learn/NSCH/topics_questions/2016-nsch-guide-to-topics-and-questions#sql)

<sup>11</sup> Krieger N, Smith K, Naishadham D, Hartman C, Barbeau EM. Experiences of discrimination: validity and reliability of a self-report measure for population health research on racism and health. *Social Science & Medicine.* 2005; 61(7):1576-1596. Available at: [https://scholar.harvard.edu/files/davidwilliams/files/measuring\\_discrimination\\_resource\\_feb\\_2012\\_0\\_0.pdf](https://scholar.harvard.edu/files/davidwilliams/files/measuring_discrimination_resource_feb_2012_0_0.pdf)