Health of Boston Update

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Boston Public Health Commission
Board Meeting
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Research and Evaluation Office (REO)

• **Research** - conduct research on the health experience of Boston residents with community and academic partners and provide technical assistance to programs

• **Evaluation** - assist programs and various collaborative initiatives in identifying, measuring, and assessing outcomes of interest through the development of logic models, review of surveys and program data collection instruments and development of evaluation plans

• **Surveillance and Analysis** - systematically collect, analyze, and interpret Boston resident health-related data for dissemination through reports, presentations, data requests
Regular Surveillance Data Sources
(annual, biennial)

• Vital Records (Birth and Death Records) – MDPH

• Hospital Patient Encounters (ED visits, Hospitalizations, Observational Stays) – CHIA

• Substance Misuse Treatment Admissions—MDPH

• American Community Survey – U.S. Census Bureau

• Youth Risk Behavior Survey – Boston Public Schools

• Boston Behavioral Risk Factor Survey - BPHC
Boston Behavioral Risk Factor Surveillance System (BBRFSS)

- Biennial telephone survey conducted since 1999
  - Survey design modeled after CDC BRFSS
  - Independently conducted by BPHC, via vendor
  - Random digit-dial probability sample of Boston adult residents living in non-institutional households
  - Cross-sectional data – i.e., does not link respondents over time

- 10 surveys and total of 27,168 adult respondents since 1999
- Provides direct population estimates
BBRFSS Indicators

• **Demographics/Social Determinants (stratifiers):** Race/Ethnicity, Sex, Age, Years Lived in U.S., Sexual Orientation, Gender Identity, Education Level, Household Income, Marital Status

• **Other Social Determinants (stratifiers):** Food Security, Housing Status, Perceived Neighborhood Safety, Violence, Racism, Adverse Childhood Experiences (ACEs)

• **Health Behavior Indicators:** Tobacco Use, Alcohol Use/Misuse, Marijuana Use, SSB consumption, Physical Activity

• **Chronic Disease Indicators:** Asthma, Obesity, Hypertension, Diabetes, Oral Health

• **General and Mental Health Indicators:** Days Heath Not Good (Physical and Mental), Persistent Sadness, Persistent Anxiety, Treatment for Depression

• **Access to Care Indicators:** Cancer Screenings, Health Insurance, Dental Insurance, Primary Care Physician, Cost Barriers to Care
Who BBRFSS doesn’t reach by design (hard-to-reach population groups):

- Homeless
- Incarcerated
- Nursing homes or long-term care facilities
- College students living in dormitories
- Residents who do not speak English or Spanish
Health of Boston

Health of Boston 2016-2017
Health of Boston 2016-2017: Online Access


- [https://analytics.boston.gov/app/health-of-boston-2017](https://analytics.boston.gov/app/health-of-boston-2017) (Online Data Visualization, Version 1.0)
Health of Boston Contents
(15 Chapters, 663 pages of Descriptive Statistics)

- Executive Summary
- Summary Tables
- Health Equity
- Demographics
- Social Determinants
- Community Assets
- Environment Health
- Access to Care
- Maternal and Child Health
- Health-Related Behaviors
- Chronic Disease
- Cancer
- Infectious Disease
- Sexual Health
- Injury and Exposure to Violence
- Mental Health
- Substance Misuse
- Death
Health of Boston

• Assess the health of Boston residents using population-level health surveillance data
  • Estimate the scope and magnitude of health events and determinants across resident population/population groups
  • Estimate the geographic, demographic, and temporal distribution of health events and determinants
  • Focus on health inequities, social determinants of health (SDoH) and outcomes/status over the life course
  • More “what” than “why”
• Share information with those who can use it
Health of Boston Data informing the Boston Community Health Needs Assessment (Boston CHNA) informing the Boston Community Health Improvement Plan (Boston CHIP)
Health of Boston Data

Potential Areas For Improvement

• Accessibility
• Timeliness of Data Roll Out
• Minimize Data Redundancy
• Expand beyond descriptive statistics
• Coverage of *hard-to-reach* population groups
Health of Boston Rebrand

From static biennial report to.... dynamic varied data/information streams

• Health of Boston Online Data Dashboard
• Health of Boston Topical or Population Group Reports
• Health of Boston Data Update Briefs
• Health of Boston Customized Data/Analysis Requests
Health of Boston Rebrand
From static biennial report to dynamic varied information streams

Health of Boston Online Data Dashboard

• Systematically presents analyzed Boston resident health-related data similar to data presented in legacy biennial reports but without accompanying interpretive text
• Will include analytical results based on statistical testing of comparisons and trends
• Interactive/downloadable data in graphs, charts, tables, maps
• Data and analysis updated as data source updates received (annually)
• Version 1.0 currently available at Boston Analytics (HOB 2016-2017)
• Version 2.0 in development
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Selected Indicator:
Binge Drinking

Binge Drinking Among Adults by Selected Indicators, 2015

Note: Binge drinking is defined as having 5 or more drinks on an occasion for men or 4 or more drinks on an occasion for women.
Data source: Boston Behavioral Risk Factor Survey (2015), Boston Public Health Commission
Health of Boston Rebrand
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Health of Boston Topical and/or Population Group-Based Reports

• Deeper-Dive (beyond basic descriptive statistics) reflecting BPHC priority areas including health equity, hard-to-reach population groups, the role of social determinants
• Examples: LGBT Resident Health, Chinatown Chinese Resident Health
• Optimizing data utility – applying fairly novel approaches/methods (e.g., PSM, combined data sources, weighted and unweighted data)
• Analysis informed by bureau/program and community input
• Opportunity for BPHC policy/program tie-in
Health of Boston Rebrand
From static biennial report to dynamic varied information streams

Health of Boston Data Update Briefs
• Periodic Specific mini-topic focus
• Quick release, highlighting latest data/findings

Health of Boston Customized Data/Analysis Requests
• Provide customized analyses not covered by the portal, reports, briefs on request (Research@bphc.org)
Births Among Females Ages 15-17 by Race/Ethnicity and Year

Data Source: Boston resident live births, Massachusetts Department of Public Health
• Statistically significant change over time (Bo-61, B-66, L-74)
Data not presented for Asian residents or White residents (2014, 2016, 2017) due to small number of cases
Infant Mortality by Race/Ethnicity and Year

Data Source: Boston resident live births, Massachusetts Department of Public Health
Data not presented for Asian residents due to small number of cases
Asthma Emergency Department Visits†, Ages 0-5, by Race/Ethnicity and Year

- Boston
- Asian
- Black
- Latino
- White
Asthma Hospitalizations†
by Race/Ethnicity and Year

* Statistically significant change over time
† Age-adjusted rates per 10,000 residents

DATA SOURCE: Acute hospital case-mix databases, Massachusetts Center for Health Information and Analysis
Obesity Among Adults by Race/Ethnicity, 2013, 2015, and 2017 Combined

* Statistically significant difference compared to White residents

Hypertension Among Adults by Race/Ethnicity, 2013, 2015, 2017 Combined

* Statistically significant difference compared to White residents

Diabetes Among Adults by Race/Ethnicity, 2013, 2015, 2017

* Statistically significant difference compared to White residents

Obesity Among Adults by Neighborhood, 2013, 2015, and 2017 Combined

Boston: 22.8% (21.6-24.0) of adults were obese

NOTE: "BB" includes the Back Bay, Beacon Hill, Downtown, the North End, and the West End. "SE" includes the South End and Chinatown.

Hypertension Among Adults by Neighborhood, 2013, 2015, and 2017 Combined

Boston: 24.7% (23.7-25.8) of adults had hypertension

NOTE: "BB" includes the Back Bay, Beacon Hill, Downtown, the North End, and the West End. "SE" includes the South End and Chinatown.

Heart Disease Mortality†
by Race/Ethnicity and Year

† Age-adjusted rates per 10,000 residents
DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health
Cancer Mortality†
by Race/Ethnicity and Year

* Statistically significant change over time
† Age-adjusted rates per 10,000 residents
DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health
Tobacco Use During the Past 30 Days Among Public High School Students by Type and Year

* Statistically significant change over time

NOTE: Cigar, cigarillos or little cigar smoking in the past 30 days data not available for 2011. Electronic vapor data not available for 2011 and 2013.

Binge Drinking Among Public High School Students by Year

* Statistically significant change over time


Binge Drinking Among Adults by Year

Marijuana Use Among Adults by Age, 2017

* Statistically Significant Compared to Reference Group

DATA SOURCE: Boston Behavioral Risk Factor Survey (2017), Boston Public Health Commission
Marijuana Use Among Adults By Race/Ethnicity, 2017

* Statistically Significant Compared to Reference Group

DATA SOURCE: Boston Behavioral Risk Factor Survey (2017), Boston Public Health Commission
Adult Perceptions of Neighborhood Safety from Crime by Race/Ethnicity, 2017

Unsafe and Extremely Unsafe combined for Asian residents due to sample limitations

Deaths per 100,000 residents, ages 12 and older

Unintentional Opioid Overdose Mortality†
by Race/Ethnicity and Year

Boston
Black
Latino
White

• Statistically significant change over time (Bos-222%, Black-300%, Latino-449%, White-174%)
• † Age-adjusted rates per 100,000 residents ages 12 and older
DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health