WEB-BASED SYSTEM LINKS ASTHMA CLINICIANS TO HOUSING CODE ENFORCEMENT

Eugene Barros & Darris Jordan
Boston Public Health Commission
Collaboration and Alignment of Resources

Who are the key clinical, legal, housing and advocacy partners in your community?

Are there asthma champions in your community?

Who are the major landlords?

What is covered under your sanitary code and who enforces?

Do you have the data to target resources?

Are there electronic medical records/electronic complaint system?
Boston Snapshot

With @ 617,591 residents
• @44.7% non-Latino White
• @22.9% non-Latino Black
• @19.5% Latino
• @ 9.5% Asian/Pacific Islander
• @ 2.3% 2 or more races
• @1.1% other race
• @ 20% of population living in poverty

17% of population age 18 or younger

Active advocacy and health care presence

Boston Housing Authority

• Houses about 10% of Boston population
• 14,000 units, 64 Developments
• Average Income @ $15,573 for a family of four
• Aging properties
• Pest infestation
Asthma in Boston

Highest rate of asthma hospitalizations for children under 10 in state of Massachusetts*

23.8% of adults in rental assistance & 10.8% in public housing report doctor diagnosed asthma compared to 9.% in market rate housing**

66% of Boston residents live in renter-occupied housing units


**2017Behavioral Risk Factor Surveillance System (BRFSS) Boston Public Health Commission
Figure 8.12 Asthma Emergency Department Visits by Age and Race/Ethnicity, 2015

* Statistically significant difference when compared to reference group (striped bars)
§ Rates are based on 20 or fewer cases and should be interpreted with caution

DATA SOURCE: Acute hospital case-mix database, Massachusetts Center for Health Information and Analysis
DATA ANALYSIS: Research and Evaluation Office, Boston Public Health Commission
Figure 8.20 Asthma Hospitalizations\(^1\)
by Age and Race/Ethnicity, 2012-2015

* Statistically significant difference when compared to reference group (striped bars)
§ Rates are based on 20 or fewer cases and should be interpreted with caution
\(^1\) 4-year average annual rates per 10,000 residents

DATA SOURCE: Acute hospital case-mix database, Massachusetts Center for Health Information and Analysis
DATA ANALYSIS: Research and Evaluation Office, Boston Public Health Commission
Figure 8.14 Asthma Emergency Department Visits Among 3- to 5-Year-Olds by Race/Ethnicity and Year

* Statistically significant change over time

DATA SOURCE: Acute hospital case-mix database, Massachusetts Center for Health Information and Analysis

DATA ANALYSIS: Research and Evaluation Office, Boston Public Health Commission
Figure 8.15 Asthma Emergency Department (ED) Visits<sup>1</sup> Among 3- to 5-Year-Olds by Neighborhood, 2012-2015

Boston: 285.4 ED visits per 10,000 children ages 3-5

Note: “BB” includes the Back Bay, Beacon Hill, Downtown, the North End, and the West End. “SE” includes the South End and Chinatown.

DATA SOURCE: Acute hospital case-mix database, Massachusetts Center for Health Information and Analysis
DATA ANALYSIS: Research and Evaluation Office, Boston Public Health Commission

<sup>1</sup> 4-year average annual rates per 10,000 children ages 3-5
Boston Asthma Data by Housing Type

Boston Asthma Rates By Housing Type in 2013 and 2015

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>2013</th>
<th>2015</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHA Resident</td>
<td>18.70%</td>
<td>23.40%</td>
<td>21.50%</td>
</tr>
<tr>
<td>Rental Assisted Renter</td>
<td>8.80%</td>
<td>12.90%</td>
<td>11.30%</td>
</tr>
<tr>
<td>Non-RA Renter</td>
<td>12.00%</td>
<td>17.70%</td>
<td>12.00%</td>
</tr>
<tr>
<td>Non-Renter Non-Owner</td>
<td>8.30%</td>
<td>12.90%</td>
<td>9.80%</td>
</tr>
<tr>
<td>Home Owner</td>
<td>8.80%</td>
<td>11.30%</td>
<td>9.80%</td>
</tr>
</tbody>
</table>
Boston Smoking Data by Housing Type

Boston Smoking Rates By Housing Type in 2013, 2015, 2017

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>2013</th>
<th>2015</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHA Resident</td>
<td>31.60%</td>
<td>30.90%</td>
<td>21.80%</td>
</tr>
<tr>
<td>Rental Assisted Renter</td>
<td>33.70%</td>
<td>28.60%</td>
<td>18.60%</td>
</tr>
<tr>
<td>Non-RA Renter</td>
<td>18.60%</td>
<td>15.70%</td>
<td>15.30%</td>
</tr>
<tr>
<td>Non-Renter Non-Owner</td>
<td>20.70%</td>
<td>15.30%</td>
<td>8.80%</td>
</tr>
<tr>
<td>Home Owner</td>
<td>8.80%</td>
<td>7.00%</td>
<td>7.00%</td>
</tr>
</tbody>
</table>
Health Impact of Substandard Housing Conditions

- Rodent and cockroach infestation
- Water leaks and resultant mold
- Exposed wires and uncovered radiators
- Insufficient heat or running water
- Overcrowding

- Increased asthma
- Injuries
  - Radiator burns
  - Fires from improper wiring, lack of smoke detectors, use of space heaters
- Increased infectious diseases
Breathe Easy at Home

Overview

Breathe Easy at Home (BEAH) is a public/private partnership to improve the health of Boston residents with asthma.

Doctors or nurses screen for housing problems among their patients with asthma:
- Log onto the BEAH web-based referral system/database.
- Refer families for housing code inspection and sign up for updates.
- Housing code inspectors put results up on website, automatically emailed to referrers.

BEAH’s design allows for evaluation and data collection.

Patient consent is required for referral and at the time of inspection.
BEAH Background

• Piloted in 2005 and launched May 2006
• Founding partners: Boston Medical Center, Medical Legal Partnership, Boston Inspectional Services Department, Boston Urban Asthma Coalition, The Bowdoin Street Health Center, the Boston Public Health Commission, Health Resources in Action (New England Asthma Regional Council)
• Children's Hospital Boston and Boston Housing Authority soon joined the partnership
BEAH Inspectors

ISD Housing Inspectors trained on in-home environmental asthma triggers
Mold and chronic dampness, leaks
pest infestations, overcrowding
drafty doors and windows
proper ventilation, lack of heat
other code violations/ asthma triggers

Inspector “buy-in” is critical!
BEAH Inspections

Once a referral is received from a Clinician:

Patient contacted within 24 hours to schedule a home inspection.

Inspections are conducted, asthma triggers and other code violations are given to the property owner.

Property owners are provided a compliance deadline & inspectors are instructed to work with them.

Property owner retaliation is a critical factor.

Non-compliant owners are taken to court.
Registering with BEAH

Clinicians join BEAH referral network through the website:
https://www.cityofboston.gov/isd/housing/bmc/isd/isdlogin.asp

Clinical sites have a “super-user” and the ability to add other site users.

Clinical sites are password protected for HIPAA protections.
Housing Division - Breathe Easy Program

Login is required. Please sign in:

User Name: [blank]
Password: [blank]

Login
Housing Division - Breathe Easy Program

View Case Referral

Patient Information

MICHELLE STRAW
(617)459-9745
Click the "show" link to view the Patient information.

Address Information

37 - 0 MSGR REYNOLDS WAY
Ward: 09
Click the "show" link to view the Address information.

Nature of the Problem and Inspection Information

WAS AN OPEN CSAN, AND NEEDS REOPENED CHILD WITH ASTHMA
Click the "show" link to view the Problem information.

Referral Information
Breathe Easy Growth

Breathe Easy At Home Referrals (2006-2018)
### BEAH Data 2015-2017

<table>
<thead>
<tr>
<th>Neighborhood</th>
<th>Referrals</th>
<th>Percentage</th>
<th>Hospitalizations Under Age 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allston/Brighton</td>
<td>16</td>
<td>2.50%</td>
<td>168.6</td>
</tr>
<tr>
<td>Backbay/Beacon Hill</td>
<td>3</td>
<td>0.47%</td>
<td>114.5</td>
</tr>
<tr>
<td>Charlestown</td>
<td>10</td>
<td>1.56%</td>
<td>272.3</td>
</tr>
<tr>
<td>Dorchester</td>
<td>237</td>
<td>37.09%</td>
<td>410.6</td>
</tr>
<tr>
<td>East Boston</td>
<td>58</td>
<td>9.08%</td>
<td>102.2</td>
</tr>
<tr>
<td>Hyde Park</td>
<td>24</td>
<td>3.76%</td>
<td>251.2</td>
</tr>
<tr>
<td>Jamaica Plain</td>
<td>30</td>
<td>4.69%</td>
<td>193.0</td>
</tr>
<tr>
<td>Mattapan</td>
<td>32</td>
<td>5.01%</td>
<td>416</td>
</tr>
<tr>
<td>Roslindale</td>
<td>31</td>
<td>4.85%</td>
<td>237.7</td>
</tr>
<tr>
<td>Roxbury</td>
<td>117</td>
<td>18.31%</td>
<td>556.2</td>
</tr>
<tr>
<td>South Boston</td>
<td>51</td>
<td>7.98%</td>
<td>190.7</td>
</tr>
<tr>
<td>South End</td>
<td>27</td>
<td>4.23%</td>
<td>262.2</td>
</tr>
<tr>
<td>West Roxbury</td>
<td>3</td>
<td>0.47%</td>
<td>78.7</td>
</tr>
<tr>
<td>Total</td>
<td>639</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>
BEAH Status

- BEAH has a full-time coordinator
  - 37 Boston health institutions are registered
  - Quarterly newsletter to clinical sites and quarterly report to Steering Committee
  - Educational materials for residents (legal rights, BEAH process)
  - Rapid response agreement with Boston Housing Authority
  - Using data to plan prevention efforts (outreach to landlords, pest control contractor training)
- 70% of cases have violations solved without housing court!
## BEAH Findings Through the Years

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>#</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Carpet</td>
<td>2006</td>
<td>4</td>
<td>7%</td>
</tr>
<tr>
<td>Rodents</td>
<td>2006</td>
<td>25</td>
<td>42%</td>
</tr>
<tr>
<td>Mold</td>
<td>2006</td>
<td>11</td>
<td>18%</td>
</tr>
<tr>
<td>Roaches</td>
<td>2006</td>
<td>8</td>
<td>13%</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roaches</td>
<td>2016</td>
<td>109</td>
<td>22%</td>
</tr>
<tr>
<td>Mold/Leaks/Dampness</td>
<td>2016</td>
<td>73</td>
<td>14%</td>
</tr>
<tr>
<td>Rodents</td>
<td>2016</td>
<td>67</td>
<td>13%</td>
</tr>
<tr>
<td>Structural</td>
<td>2016</td>
<td>62</td>
<td>12%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mold/Leaks/Dampness</td>
<td>2017</td>
<td>103</td>
<td>25%</td>
</tr>
<tr>
<td>Rodents</td>
<td>2017</td>
<td>83</td>
<td>20%</td>
</tr>
<tr>
<td>Structural</td>
<td>2017</td>
<td>53</td>
<td>13%</td>
</tr>
<tr>
<td>Roaches</td>
<td>2017</td>
<td>27</td>
<td>7%</td>
</tr>
</tbody>
</table>
Breathe Easy- A Replicable Model

Has been replicated in Multnomah county, Oregon and Rhode Island DPH

- **Facilitating Factors for replication**
  - ✓ Leadership from the top
  - ✓ Missions aligned
  - ✓ Frequent communications including meeting regularly
  - ✓ Data collection and monitoring
  - ✓ Memorandums of understanding
  - ✓ Annual meetings of agencies
  - ✓ Boston has a public hospital to serve the underserved
BEAH-A Replicable Model

- Leadership from the top
- Missions aligned
- Leverage of each other resources & systems
- Frequent communications including meeting regularly
- Data collection and monitoring
- Memorandums of understanding
- Annual meetings of agencies
- Boston has a public hospital to serve the underserved
THANK YOU!

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