Boston Public Health Commission
Asthma Prevention and Control Program
Reducing environmental triggers to asthma in the home

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Scope of Program

- **Population Served**
  - Massachusetts among states with highest asthma rates
  - Persistent racial and ethnic health disparities in hospitalization and ED
  - Mass survey of schools: 5 Boston schools 30% of students diagnosed with asthma
  - Some Boston neighborhoods 5 times the hospitalization rate of others
  - Asthma diagnosis among Boston public housing residents 21.9% compared to 10% affordable or market rate

- **Program established in 1998, part of the Boston health department**
  - BPHC program directly serves about 150 Boston residents with asthma/year
  - Collaborates with community groups to serve more

- **Asthma Program Staff**
  - Asthma Program Director
  - Senior Manager for Asthma/Healthy Homes
  - Health Educator Asthma/Diabetes
  - Senior Asthma Inspector
  - Part-time Breathe Easy at Home Coordinator

- **About 35% of program budget is internal, the remaining external fundraising**
  - Raise internal external funds from HUD, EPA and CDC and WK Kellogg Foundation

Program at a Glance – The Key Drivers in Action

- **Effective Leaders & Champions**
  - Health and housing advocacy organizations have been critical to program development
  - Physician champions promote program to peers and raise program profile

- **High-Performing Collaborations**
  - Working with city housing departments on systems change
  - Provide direct service, support community-based services and address policy change in health and housing

- **Integrated Health Care Services**
  - Referrals from hospitals, health centers and schools
  - Provide in-home inspection, education and low-cost supplies, refer to other resources as needed
  - Reinforce messages through phone calls, follow-up visits and written report
  - Provide copy of written report to health care provider

- **Tailored Environmental Interventions**
  - Inspection, interview and air quality monitoring guide content of education
  - Post environmental sampling and allergy testing demonstrated importance of cockroach and mouse infestation
**Framework for Sustainable Success**

**Building the System**
- Around 1997 health data demonstrated high asthma rates and disparities
- Residents, advocacy organizations and health care providers raising concerns about asthma
- Federal agencies and foundations starting to fund in-home asthma research

**Elements of the System - Key Drivers in Action**
- Effective Leaders & Champions
- Strong Community Ties
- High-Performing Collaborations
- Integrated Health Care Services
- Tailored Environmental Interventions

**Ressourcing the System**
- Build on core functions and recruit partners to do same
- Raise external funds for demonstration projects, research and special initiatives.
- Maintain visibility and promote outcomes.
- Effect housing and health policy

**Getting Results – Evaluating the System**
- Process Outcomes:
  - Participant and partner satisfaction
- Health Environmental Outcomes:
  - Key quality of life measures for asthma and hospitalization and ED use.
- Environmental Outcomes:
  - Measurable reductions in environmental contributors to asthma

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**Building the System**

- 1997 Boston Urban Asthma Coalition formed. Urged city to create asthma office
- Data was consistent with their concerns
- BPHC Environmental Health Office getting requests for asthma related home inspections
- Raised funds from CDC for Healthy Homes pilot project.
- Hired program manager with a clinical and a community background

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**History and Lessons Learned**

- First Healthy Homes Pilot Project
  - Low income home owners, one zip code, child ages 4-12 with moderate to severe persistent asthma.
  - Unable to recruit participants
- Feedback from families, advocates, clinicians
  - Need financial resources to assist families with home remediation
  - Eligibility criteria too limiting, need simple, broad eligibility criteria
- Program modifications
  - Engaged city housing departments, identified city homeowner funding and raised additional funding to provide grants for home remediation
  - Changed eligibility criteria to age 17 or under, Boston resident, any asthma severity.
  - Involved community health workers in outreach and education
Program Evaluation

- **Process measures:**
  - Participant recruitment, retention, satisfaction and partner satisfaction
  - Focus groups, interviews, surveys
- **Health and Environmental Outcomes:**
  - Key quality of life measures for asthma and hospitalization and ED use
  - Baseline and follow-up in-home interview, bi-monthly telephone interview
  - Baseline and follow-up home inspection, with Air Quality monitoring. Some environmental sampling.

Safe Pest Control and Asthma

- Boston Healthy Homes initiatives document high levels of cockroach and mouse infestation in multifamily and public housing
  - Residents, tenant organizations and housing management identify as high priority
  - Residents resort to extreme measures including use of restricted and illegal pesticides
  - Effective strategies to reduce pest infestation exist
  - Reduction in pests correlates with improvement in asthma quality of life measures.

Health and Environmental Outcomes

- Statistically significant improvement in quality of life measures including:
  - Symptom days, medication use, lost sleep from asthma
  - Greater improvements with high intensity interventions, but not statistically significant.
  - Participant report of asthma severity consistent with their asthma quality of life measures
- Statistically significant improvement in pest infestation levels
  - Resident reports consistent with dust sampling results
Resourcing the System

- Build on core functions of inspection, home visiting and health education.
- Involve city departments responsible for housing building, maintenance and code enforcement.
- Resource Plan
  - Maintain a program of in-home education and low cost supplies
  - Raise external funds to support special initiatives with higher cost interventions
- Policy efforts to ensure institutional change (e.g., housing code enforcement, health care reimbursements)

Breathe Easy at Home

- Web based referral system for housing enforcement inspections related to asthma
  - Clinicians request inspection and receive updates on status of inspection and enforcement, via the web
  - Housing code addresses rodent and cockroach infestation, mold and moisture and other housing conditions related to asthma
  - Reinforces importance of environmental control with clinicians and provides an easy to use tool.
- Uses existing laws, regulations and staff of city department

Epiphanies – Making it Last

Building the System
- Monitor data
- Start with pilot program to make errors and build relationships
- Hire staff with appropriate skills and experience

Elements of the System - Key Drivers in Action
- Work with advocacy organizations and find health care champions
- Recruit partners based on core functions, involve in program development

Getting Results - Evaluating the System
- Include evaluation plan and evaluation team from day one
- Partners involved in defining evaluation measures and collecting data

Financing the System
- Funders are interested in supporting initiatives with strong community involvement
- Address policy for sustainable change
- Maintain internal and external visibility, stay flexible and cutting edge