

IPM Pays for Itself: Keeping Kids Healthy is Win-Win

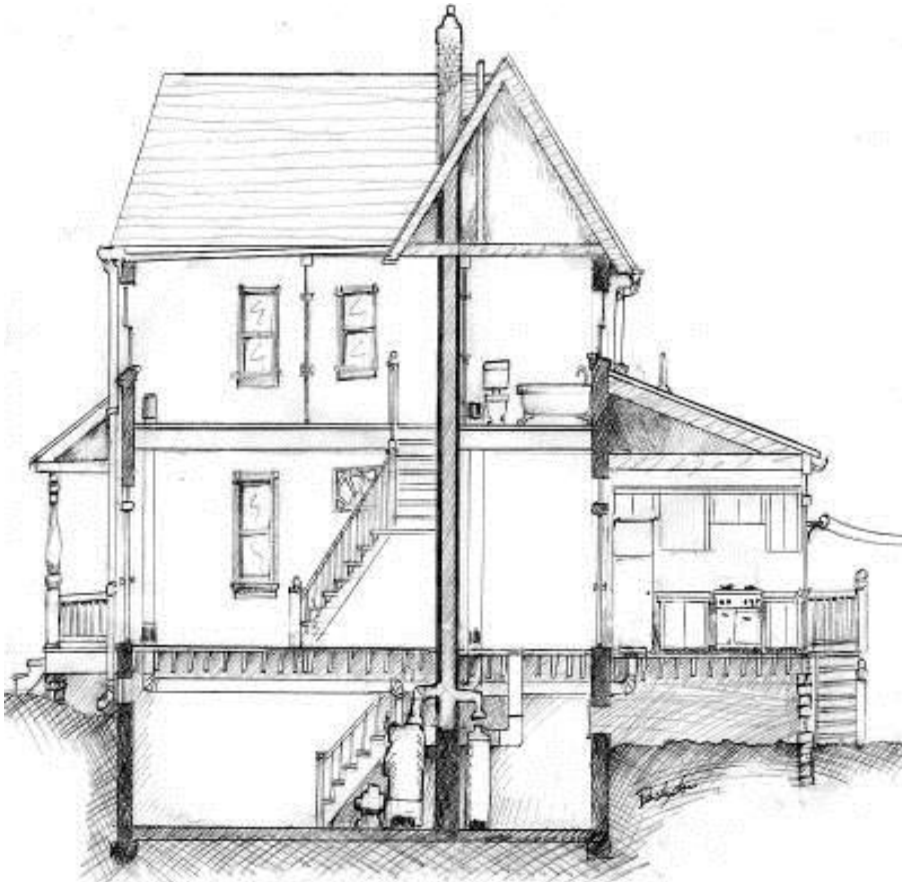
Healthy Homes: Unlocking the Potential through Innovative Funding
Shared Prosperity Roundtable
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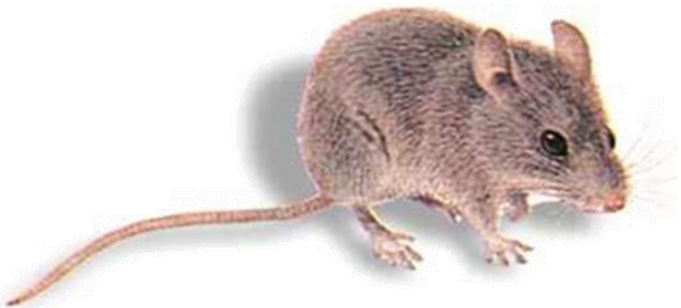
Healthy Homes Principles



- Start with People
- Keep It:
 1. Dry
 2. Clean
 3. Ventilated
 4. Safe
 5. Contaminant-Free
 6. Maintained
 7. **Pest-Free**

Factors Affecting Health in Indoor Environments

- Pests, pesticides, and pet dander
- Cleaning products & processes
- Scented products - perfume, fragrances, candles, air fresheners
- Other chemicals, aerosols
- Poor ventilation
- Deferred maintenance



Asthma is Triggered by Pests

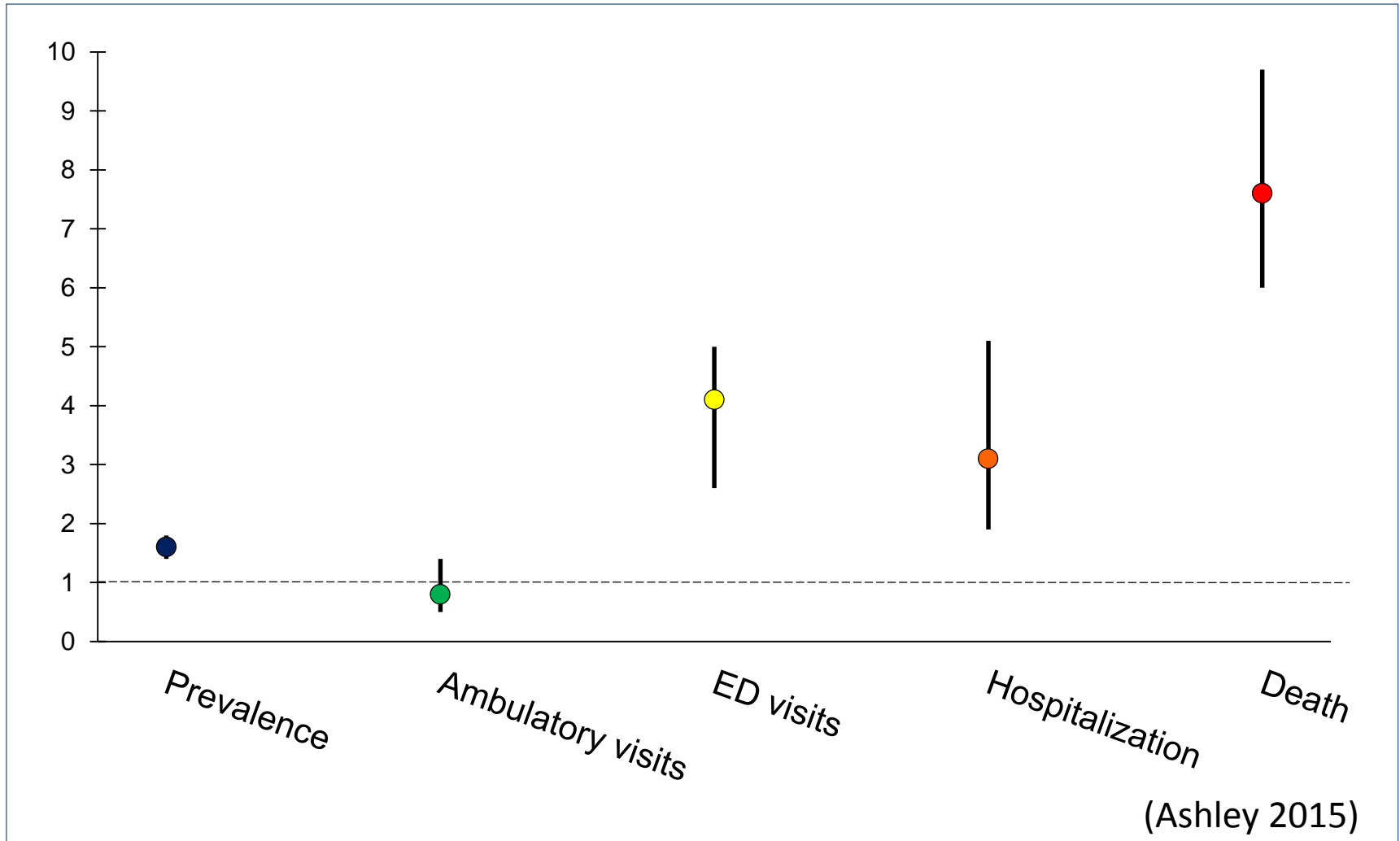
- Pests have been shown to cause and trigger asthma
- **Mice and cockroaches are #1 trigger in urban areas.**
- Philadelphia ranks in the top 5 *worst* cities for childhood asthma
- African American children are diagnosed, hospitalized, and die from asthma **2 x** more often white children
- Latino children are diagnosed, hospitalized, and die from asthma **3 x** more often white children

(PA DOH 2015)



Relative risk for asthma prevalence and outcomes for NH black vs. white children

Relative risk for asthma prevalence and outcomes for NH black vs. NH white children 0-17 years, 2004-2005 annual average



Abatement Recommendations: AAAA&I

- Cockroach & mouse allergens are detected throughout homes and schools in inner cities
- Poor housing contributes to exposure
- Exposure is associated with sensitization
- Exposure triggers clinical effects
- “Allergen reduction tactics have been shown to successfully reduce allergen levels, and...improved asthma symptoms.”

(Sheehan, et al 2010)

TABLE I. Techniques for allergen reduction (insect and rodent pests)

Environmental (indoor and outdoor)

- Remove attractants
- Landscaping and vegetation management (prune trees and ornamentals)
- Ventilation, temperature, and moisture control
- Trash removal and well-placed dumpster site

Sanitary

- General housekeeping
- Detailed cleaning
- Sealing (caulking, metal mesh, expandable spray foams, and gels)
- Clutter reduction
- Storage practices
- Disposal frequency

Nonchemical extermination

- Traps (eg, sticky, snap, curiosity, and light)
- Biological agents and pheromones
- Predators and parasites
- Vacuuming
- Freeze, heat, or steam
- Repellants
- Ultrasound
- Lighting

Chemical extermination

- Insecticides and rodenticides
- Formulations (eg, baits)
- Insect growth regulators

Public policy

- Legal housing codes (development and enforcement)
- City housing and environmental commissions
- Neighborhood housing coalitions

Improving the Flow (Crocker, et al 2011a)

S10

Crocker et al / Am J Prev Med 2011;41(2S1):S5-S32

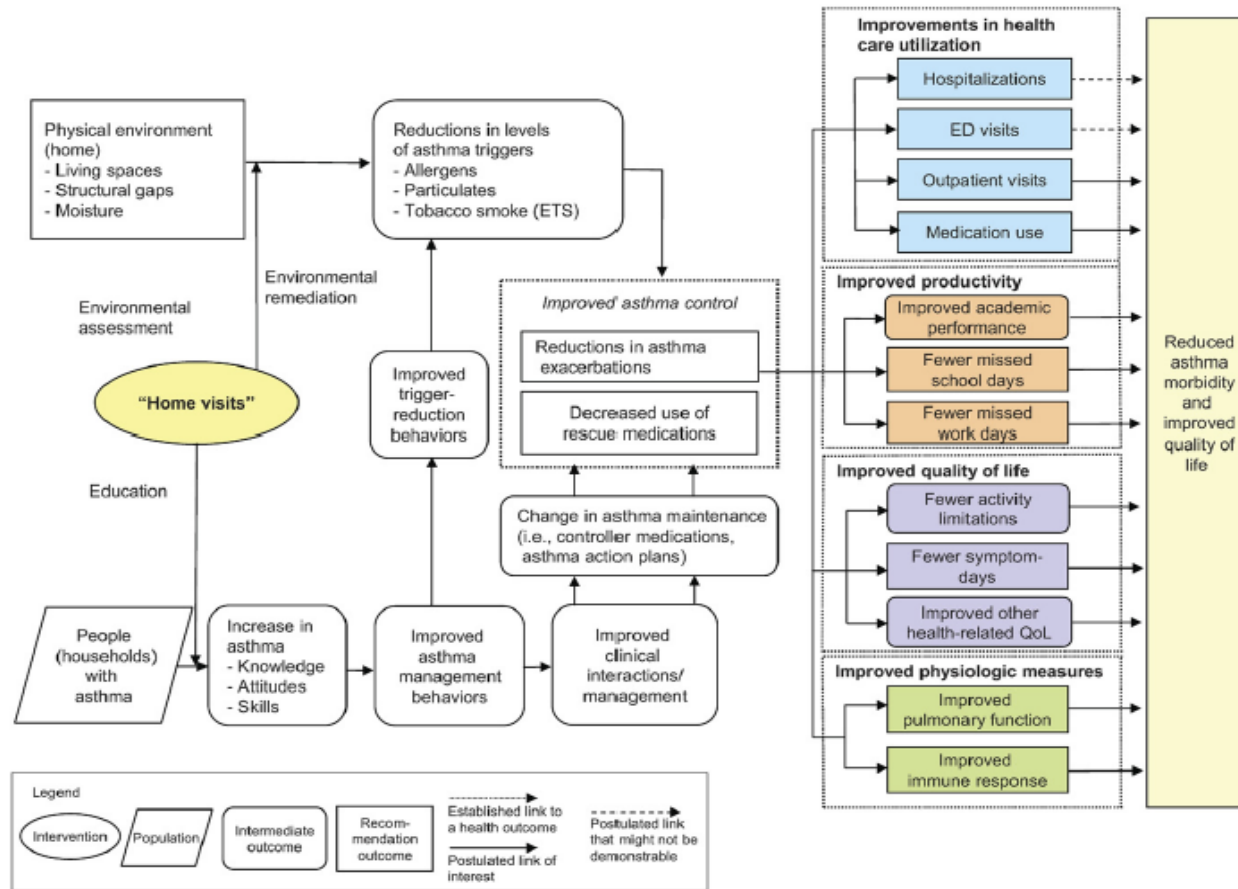


Figure 1. Analytic framework that guided the systematic review process
ED, emergency department; ETS, environmental tobacco smoke; QoL, quality of life

NYS: 1000 households, 5 years

- **Results:** For the asthma event group, the per person savings for all medical encounters and medications filled was \$1083
- Per in-home asthma visit, and the average cost of the visit was \$302, for a benefit to program cost ratio of 3.58
- Net benefit of \$781 per asthma visit. For the active asthma group, per person savings was \$613 per asthma visit
- Benefit to program cost ratio of 2.03 and net benefit of \$311.

(Gomez, et al 2017)

Other studies: CHW programs

- St, Paul, MN – ROI 1.76
(ALA n.d.)
- Kings County, WA – ROI 2.03
(Campbell 2015)
- Optima Health Virginia Beach, VA – ROI 4.1
- Children's Hospital Boston, MA – ROI 1.50
- Cambridge Health Alliance, MA – ROI 4.29
- Monroe Plan Rochester, NY - 20% reduction in total asthma medical costs; control group *increased* 29%
- Asthma Network, West Michigan – reduced costs by \$800/child/year
- Alameda Cty Health Dept., CA – reduced ED visits by 90%
(ARC 2010)
- CDC Task Force on Community Prevention – **effective**; ROI 5.3-14.0
(Crocker et al 2011a)

Funding by MCO's

- At least seven states:
 - Idaho, Iowa, Missouri, New York, North Carolina, Oregon, and Rhode Island
 - Maryland & PA?
- Contracts with CMS
 - Allows home interventions
 - Covers CHW – paraprofessionals; no medical license



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