



Communities in Action



NATIONAL ASTHMA FORUM

WASHINGTON, DC JUNE 9-10, 2011

Implementing Tailored Environmental Interventions – Maximizing the Effectiveness of Your Community Asthma Care System

Connecting to the *System*





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King County Asthma Program

Housing and Asthma

Dr. Jim Krieger



Asthma and Indoor Environment

Underlying conditions increase triggers

- ◆ Leaks
- ◆ Drainage problems
- ◆ Poor ventilation
- ◆ Carpeting
- ◆ Structural defects



Role of “Western” Lifestyle

- **Increase in indoor furnishings (carpet, etc.)**
- **Damp buildings**
- **Decreased ventilation/increased insulation**
- **Increased time indoors**
- **Reduced exposure to microbes (endotoxin)**
- **May result in allergic sensitization and “priming” for asthma development**

Healthy Homes: Home Visits for Asthma



Overview

- **Home visits by Community Health Workers**
- **Healthy Homes I**
 - RCT of 274 low-income households with children with asthma
 - Focus on home environmental triggers
- **Healthy Homes II**
 - RCT of 309 low-income households with children with persistent/poorly controlled asthma
 - Focus on self-management of medical and environmental aspects of asthma control
 - Compare clinic-based education by nurse to CHW home visits



Home Visits

- **CHW makes 3-5 visits over one year**
- **Asthma self-management skills**
 - Medication use
 - Self monitoring
 - Action plan use
- **Home environment assessment and trigger reduction**
- **Provide asthma trigger control resources (bedding covers, vacuum, door mat, cleaning supplies).**
- **Asthma Control Plan**
- **Provider-patient communication**
- **Health system navigation**
- **Social support**
- **Advocacy/referral (housing, food, furniture, jobs, etc.)**



Tailoring Environmental Interventions

- **Determine exposures**
- **Determine sensitivities**
 - History
 - Skin Test
 - RAST (blood test)
- **Review ways to reduce exposures**

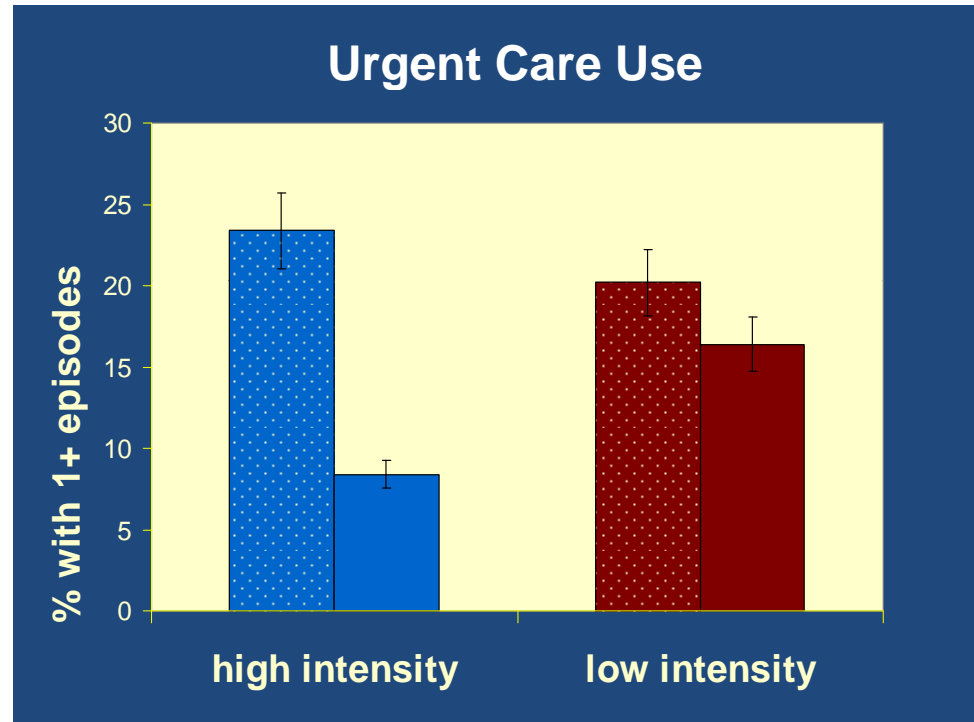


CHWs and Their Clients



Healthy Homes Outcomes

- Symptoms decrease by
 - 0.7-1.0 day/2 weeks
 - 18-26 days per year
- Urgent health care use decreases 40-70%
- Quality of Life measures improve
- Caretaker knowledge and actions increase
- Exposure to triggers decreases

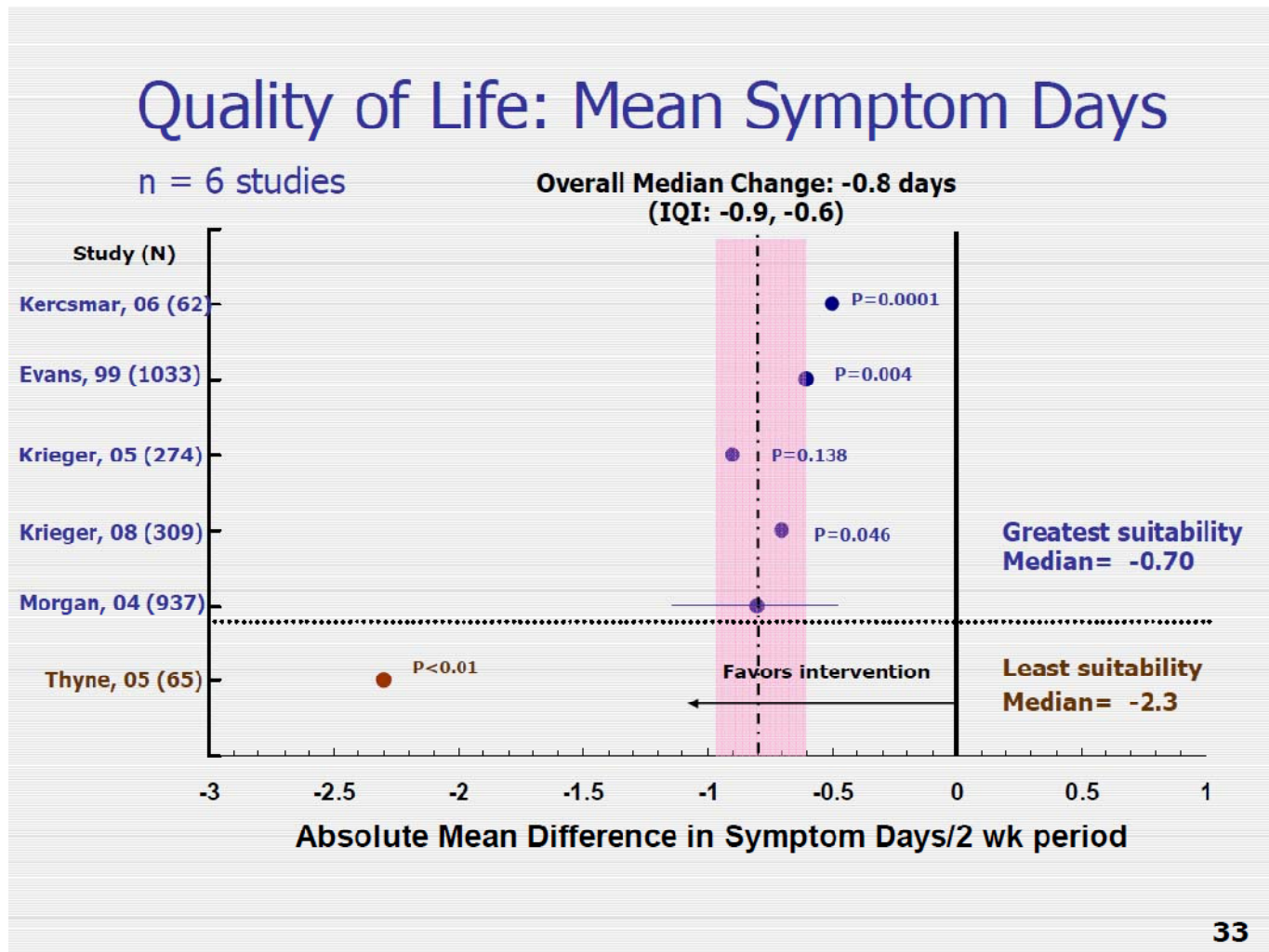


CDC Community Guide

Meta-Analysis

- The Task Force **recommends the use of home-based multi-component, multi-trigger environmental interventions in children** with asthma on the basis of strong evidence of effectiveness in reducing symptom days, improving quality of life or symptom scores and reducing the number of school days missed
- Reviewed 760 articles and included 25
- Included studies published 1966-2008

Symptom Days



Cost-Effectiveness

Summary of Key Findings

- Studies with satisfactory program cost information report the range of program costs from \$231 to \$1,720 per participant
- Cost-Benefit studies show net positive returns on investment with a benefit-cost ratio ranging from 5.3 to 14.0
- Cost-Effectiveness studies demonstrate that costs per SFD range from \$12 to \$57, and could be lower if all direct and indirect cost were included

Based on this evidence, the economic benefits from these interventions have the potential to match or even exceed the cost of intervention



Patient's Perspective

Success Story - Jose Gets Well

When community health worker, Maria, first met one year old Jose, he had been hospitalized as well as treated in the emergency room for severe asthma symptoms. His asthma symptoms woke him up at night constantly. He was sleeping on the floor, surrounded by stuffed animals. His home contained lots of clutter that encouraged the presence of dust, dust mites and roaches. Jose's mother was confused about how to give him his medications and

she used undiluted bleach to clean the home.

Maria worked with Jose's mother to help her understand that Jose's asthma was triggered by dust mites, roaches and bleach. She helped the mother learn to give Jose's asthma medications correctly, assisted the family with the roach abatement process and helped her substitute other cleaning agents for the bleach she had been using. Two months from Jose's enrollment in the Medicaid Asthma Program, he had improved so much that he had not suffered from any asthma symptoms.



Maria R.

Conclusions

- **Home visits by CHWs improve asthma outcomes**
- **Addition of home visits by CHWs to clinic-based education improves asthma outcomes**
- **Offering CHW home visits is a promising strategy for reducing asthma disparities**
- **Offering families a choice of options for self-management support may be optimal**
 - Home visits
 - 1:1 clinic-based education
 - Group activities

Next Steps: Research

- **HomeBASE**
 - Home visits for adults
 - RCT of 366 people with uncontrolled asthma
 - Enrollment completed
- **Medicaid Demonstration Project**
 - Translational research study
 - Cost-effectiveness and ROI of home visits for 380 children enrolled in Medicaid
 - Enrollment will be complete in fall 2011

Next Steps: Policy

- **Paying for home visits**
 - Insurance reimbursement
 - Hospital community benefit
 - Hospital “gain sharing”
- **Increasing visibility in guidelines**



Breathe Easy Homes

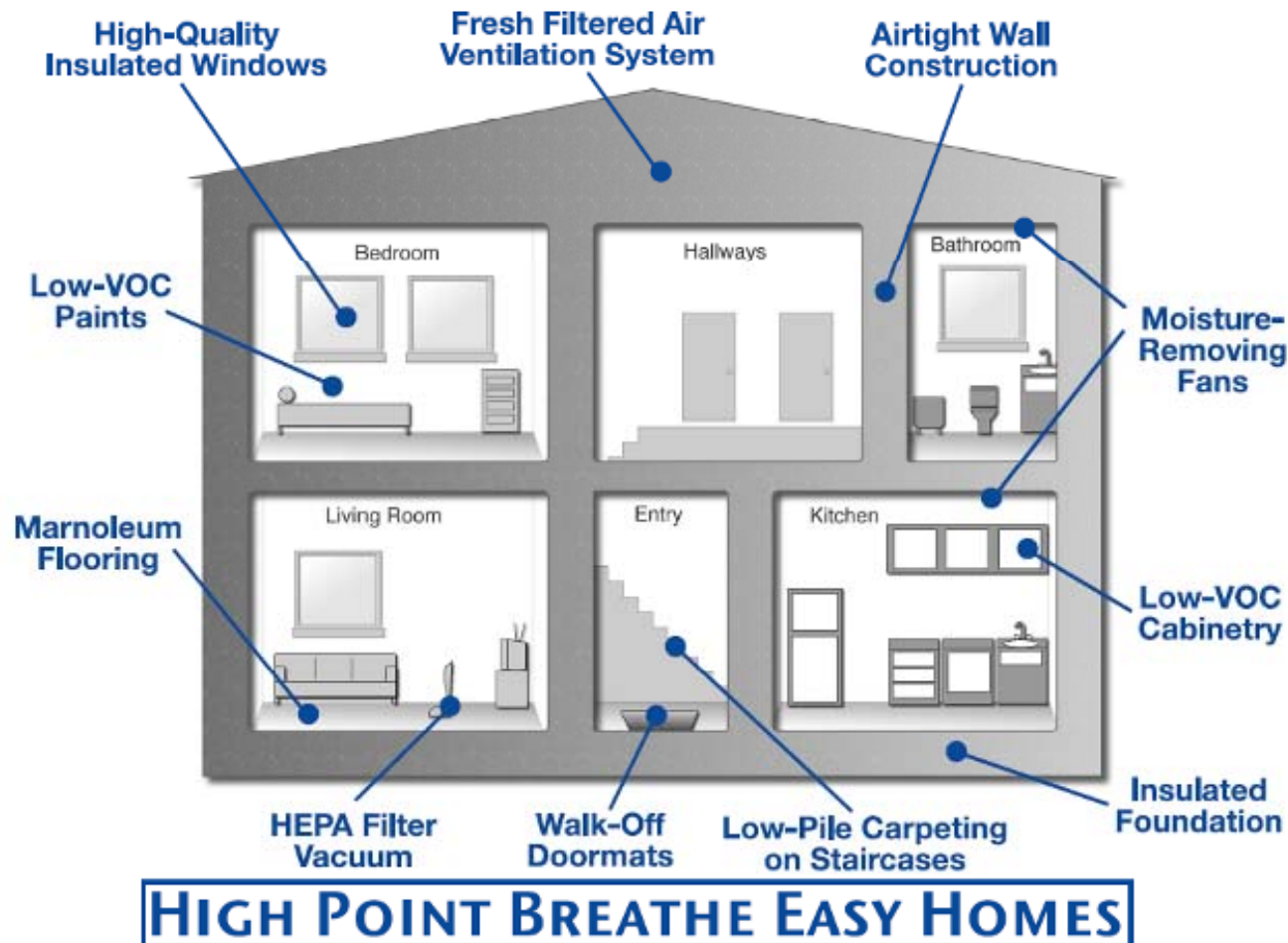


Old Housing

**New Breathe
Easy Home**



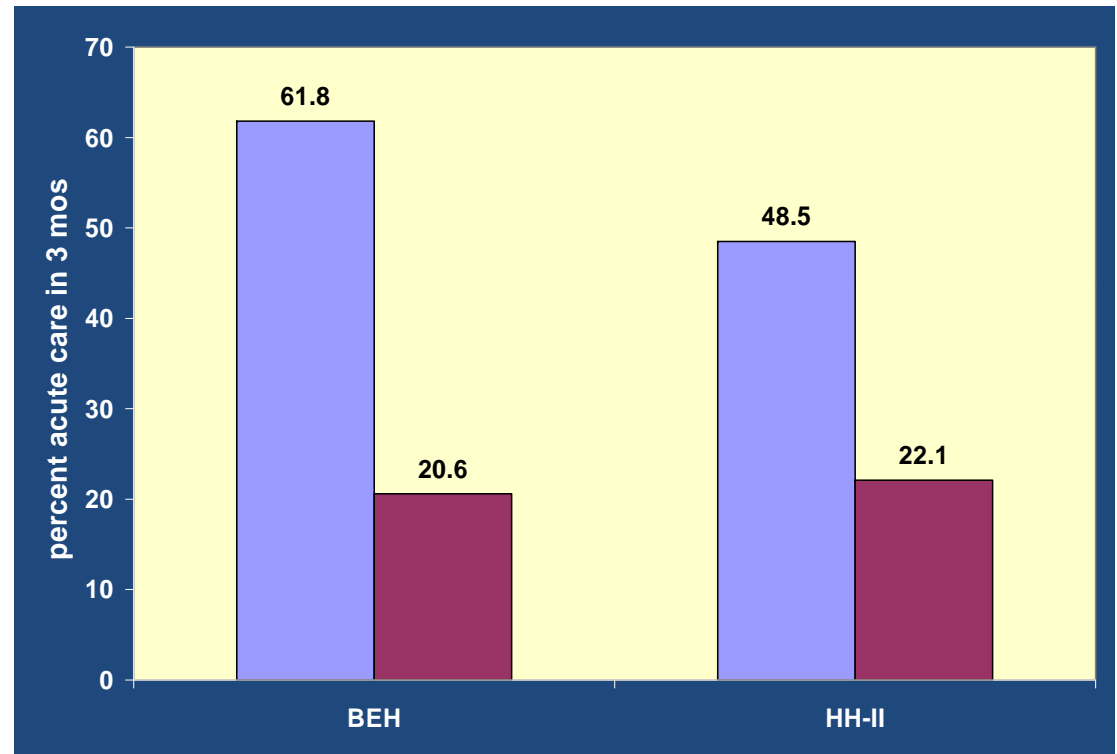
Build 60 Breathe Easy units for children with asthma at High Point Public Housing site



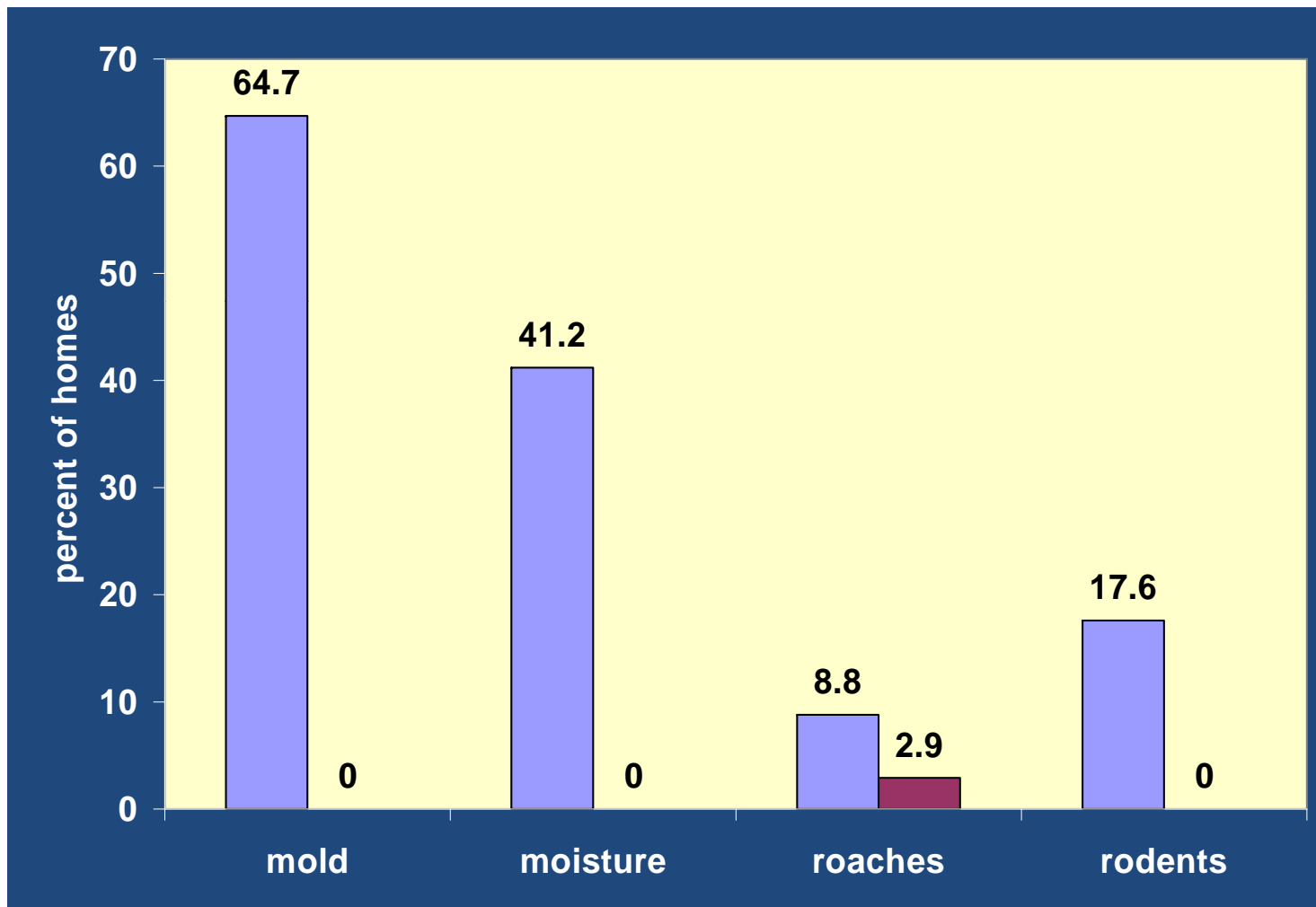


BEH Outcomes

- Symptoms decrease by 0.8 days/2 wks more in BEH group
- Urgent health care use decreases more
- Quality of Life no different
- No statistically significant differences across groups



Outcomes: Exposures



Policy Actions: Housing

- **Rental housing inspection programs**
- **Disseminate guidelines for healthy homes construction and renovation**
- **Update local housing codes**
- **Train housing inspectors, housing advocates, designers, builders, contractors, public housing agencies**
- **Advocate for healthy and affordable housing for low income families**

Question: Which domain for tailored environmental interventions will you focus on in your community?

- 1. Clinic-based**
- 2. In-home**
- 3. School-based**



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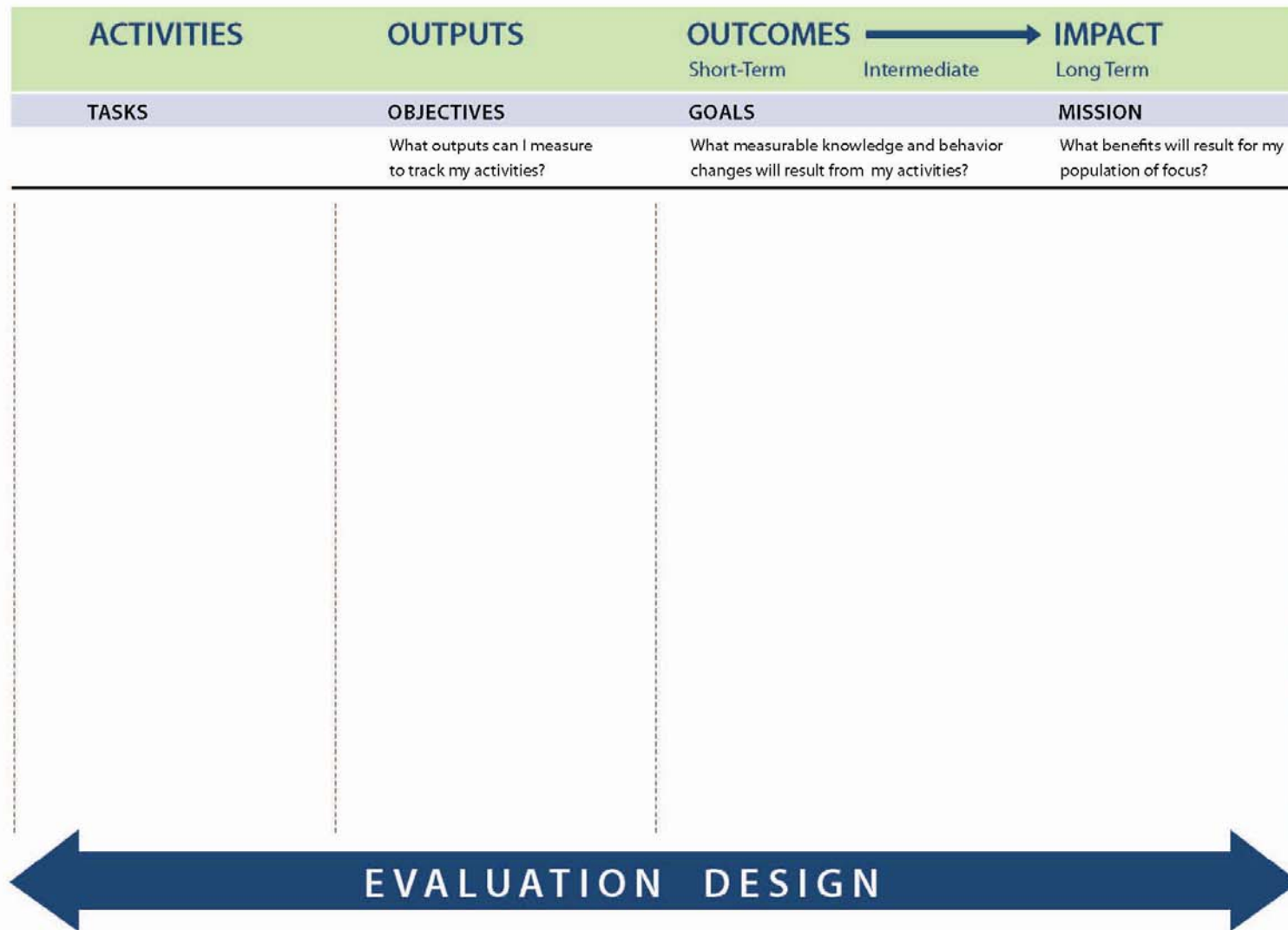


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Implementing Tailored Environmental Interventions – Maximizing the Effectiveness of Your Community Asthma Care System (Break-ins)

Getting into Action for Results - TEI



Session Agenda

- Panelist Discussion
 - Briefly respond to the following:
 - What do you do for your TEI?
 - How do you do it?
 - How do you tie it back to your activities and outcomes?
- Workbook exercise
- Q&A on barriers and solutions
- Workbook exercise – logic model for TEI
- Wrap-up

The System for Delivering High-Quality Asthma Care

