

Cornerstones For A Successful Healthy Homes Program

The Milwaukee Healthy Homes Program

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Purpose & Objectives

- The purpose of this presentation is to discuss “cornerstones” of a successful, sustainable healthy homes program.
- Based on the experiences of the Milwaukee Healthy Homes Demonstration Grant (MHHDG)
- By the end of the presentation, you will be able to:
 - 1) Describe elements of a successful Healthy Homes Program
 - 2) Pilot strategies for new Healthy Homes Programs
 - 3) Develop new strategies for existing Healthy Homes Programs

A Snapshot of Asthma in Milwaukee

- Milwaukee now ranks as the 21st worst city in the US for asthma sufferers (AAFA)—an improvement that may have been driven by smoking ban
- 30,000 Milwaukee children suffer from asthma, making it the number one health risk to children
- Zip Code 53206 is high poverty area with substandard housing. Many of the homes we work in were built in the early 1900s. Project expanded to include 53208, 53209, 53216, 53218 zip codes.
- 99% of our participants are African American. In WI, African American children are 5x more likely to be hospitalized for asthma and 4x more likely to die from asthma



Milwaukee Healthy Homes Program

- Funded by HUD through American Recovery and Reinvestment Act (ARRA) April 2009 – April 2012
- The purpose of the program is to reduce indoor asthma triggers and improve asthma control through instruction and targeted cost effective interventions.
- Goal to complete 120 units. As of April 2011, we have enrolled 101 families and completed 40 units, 39 in progress, 28 dropped.
- 30% drop out rate
- Jointly implemented by MHD, Dominican Center For Women (CBO), Children's Hospital of Wisconsin (Research aspect), Fight Asthma Milwaukee Allies (city-wide coalition)

Milwaukee Healthy Homes Program

- Data Collected at Baseline, 1, 3, 6-month
 - Demographic
 - Improved TRACK (Asthma Control) survey
 - Environmental Checklist (observational)
 - Allergen Sampling (dust mite, roach, and mouse allergens) and Lead Dust Sampling
 - Timely reporting of data results to clients
- Satisfaction Survey post-6 month
- **One-year follow-up – to measure long-term outcomes**



HH Families Receive...



- Home inspection for asthma triggers
- One-on-one action plan
- Group class in neighborhood
- Smoking Cessation Classes/Products
- Low cost green cleaning supplies and integrated pest management
- Safety kits
- Asthma friendly bedding
- Limited Subsidy to landlords for Minor Home repairs
- Low-income owner occupants receive funds for all necessary repairs impacting on health
- Lead Hazard identification and referrals for lead hazard control
- Public Health Nurse visit

Cost of HH Interventions

Average cost of supplies received = **\$525.00**

+

Average cost of minor home repairs = **\$1,567.00**

Average cost per household = **\$2,092**

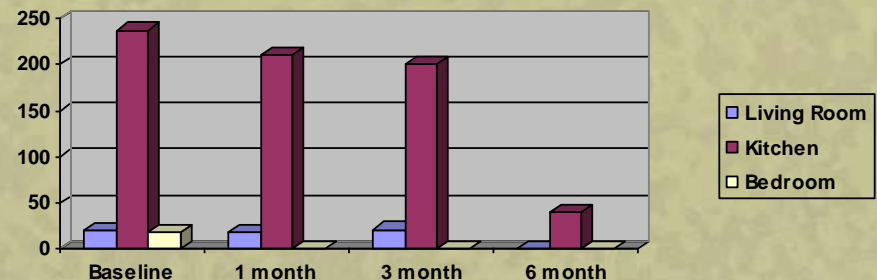
Average cost of 1 asthma ED visit in WI (2009) = **\$1,126**

At BL, our families average of 1.1 ED visits/month, = **\$14,863/yr**

Average cost of 1 asthma related hospitalization in WI (2009) =
\$11,791

Allergen Sampling/Lab

- Dust samples collected at each visit (12 total samples)
- Sample analyzed by in-house lab through ELISA to detect 3 allergens: cockroach (bla g1), mouse (mus m1) and dust mite allergens (der f1)
- Results reported back in micrograms per gram (cockroach) and nanograms per gram (mouse and dust mite)
- Accuracy and consistency in the lab and in the field
- Graph results for families show reduction of allergens in home. Builds household team work and self esteem. Also shows areas for continued efforts





Cornerstones For A Successful Program

1) Utilize existing assets

- An in-house lab has been crucial in timely processing lab samples.
- A contract with a research institute has been vital to data analysis and reporting.
- Working in tandem with the lead poisoning prevention program. Dovetailing the two programs has greatly increased participation of rental property owners.
- Utilize resources and expertise of research institutions, local asthma coalitions, CBOs



Cornerstones For A Successful Program

2) Establish partnership network

- MHHDG utilizes community based organizations, schools, nurses, research partners, contractors, and an asthma coalition to guide the program.
- An easy referral process to nursing programs, lead abatement, weatherization, and other housing rehab programs has been essential to providing complimentary services.
- Contract with American Lung Association for smoking cessation course



HH Quit Smoking Class



Make Quitting Easier

Peer Support



Daycare



Cornerstones For A Successful Program

3) Focus on Coordinated Care

- The basis of a sustainable healthy homes initiative is having a reliable source of referrals from multiple sources, but ideally from clinicians and HMOs
- Notify providers that their patients are enrolled in the program. Purpose is two-fold: improve quality of care for child and open door for future referrals from that provider
- MHHDG provides public health nursing and home visiting referrals to contribute to the success of families in the program.
- Assure feedback loop from doctors, nurses, and respiratory therapists to improve outcomes



Cornerstones For A Successful Program

4) Design strategies for each family

- A comprehensive plan of interventions may include integrated pest management, moisture control, smoking cessation, asthma trigger education, lead abatement, safety equipment, and structural repair.
- MHHDG works to tailor the interventions to the condition of home, families' need, and families' readiness to make behavior changes.
- Personal approach – concept of “asthma readiness”



Examples of Unique Strategies: Safe Sleeping



Example of Unique Strategies: Addressing multiple asthma triggers



Example of Unique Strategies: Addressing asthma triggers & safety



A Mom's Story

Baseline

- TRACK SCORE: 45 (*80 is considered well-controlled*)
- Mother could not identify asthma triggers
- Dustmite level: living room: 1172 ug/g, Mouse – kitchen: 900 ug/g; Mouse bedroom: 2,616 ug/g
- Indoor asthma triggers: smoking indoors, old carpet (20 yrs old), mold in basement, mice, clutter
- Lead hazards present (2,600 ug/sq ft – kitchen sill; 380,000 ug/sq ft – well)

Interventions

- Formal Home Visits x 4, Informal “check-ins” x 3
- Supplies to control allergens and assure safety -\$500
- Minor Home Repair (Removed carpeting from 3 rooms) - \$1,073
- Attended “Cleaning For Less” and “Asthma Survival Skills”

Outcomes

- TRACK score: 75 @ 3 month follow-up, 100 at 6 month follow-up
- Identified asthma triggers: dust mites, mold, smoking
- Dustmite level: <20.0 ug/g @ 3-month, Mouse level: <20.0 ug/g @ 3- month
- Indoor asthma triggers outcomes: smoking outside, carpet removed, mold under control in basement, no mice reported, clutter still present but much improved
- No Lead Hazards present (18 vinyl replacement windows) @ 6-month
- Child has not had any “flare-ups” in 3 months.

Future of Healthy Homes

- Collaboration with weatherization and housing rehab programs
- Enhance coordinated care between primary care docs, PHN nurses, Home Visiting Nurses, and Home Visiting Staff
- Enhance relationship with HMOs
- City-Wide expansion
- Reputable service delivery

References

- National Academies Press, IOM Report for Clearing The Air: Asthma and Indoor Air Exposures: www.nap.edu/books/0309064961/html
- National Healthy Homes Training Center and Network: www.healthyhmestraining.org
- The Burden of Asthma in Wisconsin 2010: Wisconsin Department of Health Services
- Asthma and Allergy Foundation of America – www.aafa.org
- Fight Asthma Milwaukee: www.famallies.org

Questions and Suggestions



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Creating Successful Healthy Homes Programs

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What I Will Cover Today

- Background
- Elements of a successful Healthy Homes Program
- Examples from NYC Experience
- Accomplishments and Challenges

Background – Healthy Homes in NYC

- Piloted in a few neighborhoods; city wide 2008
- Planning Process
 - Research to select hazards
 - Nature and severity of health impact/prevalence
 - Existence of housing and health code requirements that could be used to support intervention
 - Priority given to hazards that can be fatal -- fire deaths, CO poisoning, window falls
 - Hazards associated with asthma -- mold, pests, pesticides
 - Development of inspection protocol and checklists for occupants and owners
 - Revisions to data management software to allow tracking of HH inspection results
 - Training of inspectors



Education & Outreach

- Healthy Homes Hardware Store Initiative
- Community based education
- Media campaigns
- Wide distribution of “Healthy Homes” educational materials

This session will focus on inspections, but I encourage you to attend the sessions on our Hardware Store Initiative and on our media campaigns!

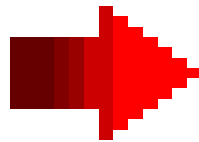
What We Have Learned So Far: Elements of a Successful Healthy Homes Program

- Knowledge & expertise of multiple hazards
- Use of data to target, track and evaluate interventions
- Partnerships – for referrals and to expand reach
- Education and outreach
- Prevention policy

Knowledge & Expertise

- Healthy homes = Holistic approach to addressing environmental hazards in the homes.
- Capitalize on presence in the home to address multiple hazards
- Develop expertise about multiple hazards

Lead
(and window guards)



Lead
Window Guards
Mold
Pest
CO and Smoke Detectors

Inspection Staff

- 17 field-based public health sanitarians
- All are EPA-certified lead paint risk assessors
- All received “Healthy Homes Essentials” training
- Additional HH training from:
 - NYC Fire Department
 - NYC Window Falls Prevention Program
- Need for ongoing training

Partnerships: Why We Need Them?

- Knowledge sharing/expertise
- Referrals
 - Identifying potential problems, e.g. receiving referrals from home visiting programs
 - Addressing problems, e.g. referrals to other government agencies
- Spreading word/broadening our reach

Partnering with Home Visiting Programs Serving High-Risk Families

- Newborn Program and Asthma Initiative
 - LPPP trained home visiting staff to do visual assessment for peeling and deteriorated paint
 - Referral is made to LPPP
 - LPPP performs environmental inspection
 - If lead paint hazards identified, landlord is ordered to remediate the hazards
- Will expand collaborations with other community based home visiting programs

Systematic Data Collection

- Targeting interventions to communities and populations at greatest risk
- Tracking performance over time
- Evaluating – what works; what doesn't

Using Data to Target Intervention Efforts

- Strategy 1: Referrals from home visiting programs
 - Newborn
 - Asthma
- Strategy 2: Using lead and vital records registries
 - Children < 3 yrs with BLL 10-14
 - Newborns at the same building address
- Strategy 3: Peeling paint complaints (1-and-2 family homes)
- Strategy 4: Buildings with a history of violations
 - Building wide approach
 - Inspections in homes with young children

Comparison of Strategies

	Strategy I	Strategy II	Strategy III*	Strategy IV
	Home Visiting	10-14 and Newborns	Complaints	MOBI
% Ultimately inspected	83%	70%	95%	95%
% Inspected with lead hazards	50.3%	60.2%	67.1%	95.0%

**(data only provided for peeling paint complaints)*

Summary:

1. Strategies I, III and IV have high success rates due to the fact that the tenants residing in these buildings either initiated a complaint or have agreed to a referral
2. Strategies II, III and IV have a greater percentage of units with identified lead hazards because the strategy focused on buildings with either current or historic cases of lead poisoning, or high risk housing.

2010 Healthy Homes Inspections

In 2010

Over 1,400 Healthy Homes Inspections were performed, of the inspected homes:

LEAD PAINT

- 62% had lead paint related violations

WINDOW GUARDS

- 64% had potential window guard violations

SMOKE- AND CO-ALARMS

- 34% had NO CO alarm
- 27% had NO smoke alarm

PESTS AND RODENTS

- 38% had roaches
- 35% had mice
- 1% had rats

MOLD

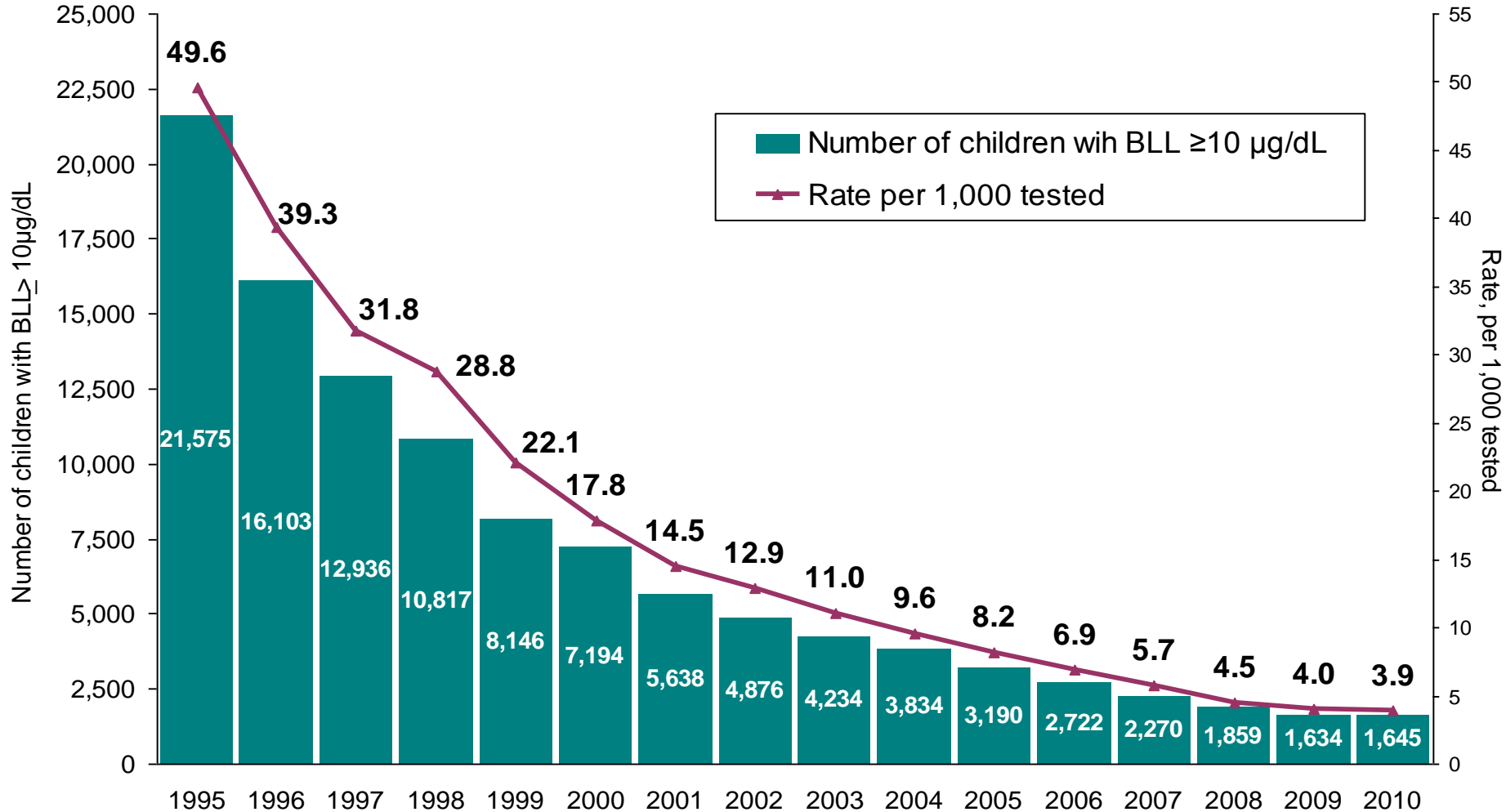
- 4% had mold



Prevention Policy

- Hazards more are likely to be remediated where policy exists to support enforcement
- Public health successes
 - Two NYC examples
 - Lead poisoning
 - Window falls

Steady Decline of in Number of Lead-Poisoned Children*



*Number and rate (per 1,000 tested) of children, age 0 to less than 18 years, newly identified with blood lead levels \geq 10 μ g/dL, by year: NYC, 1995 – 2010.

Elements Contributing to NYC's Success

- NYC banned the use of lead paint for residential use in 1960
- NYC's laws and regulations:
 - Primary prevention laws
 - Safe work practices required to protect children with lead poisoning from further exposure
- Federal ban of lead in gasoline, canned goods, consumer products, and paint (1978)

Lead in Housing: Local Law 1



- NYC has had a primary prevention law since 1982
- Local Law 1 of 2004
 - Applies to pre-1960 multiple dwellings where children younger than 6 years reside
 - Landlords must:
 - Annually find out if children under 6 years live in the building
 - Inspect and safely repair peeling paint before children are poisoned
 - If landlords fails to do so, tenants can call 311
 - HPD will do the work and bill the owner
 - HPD primary enforcement agency

NYC Health Code

The NYC Health Code

- Authorizes DOHMH to:
 - Investigate lead hazards in the homes of lead-poisoned children (BLLs $\geq 15 \mu\text{g}/\text{dL}$) and order abatement of hazards
 - Investigate complaints of unsafe work
 - Investigate and embargo consumer products contaminated with lead
- Bans the use of lead paint in homes, day care centers and in items used by children
- Prohibits dry sanding and scraping; signs required in hardware and paint stores

Window Guards

- Since the implementation of the window guard law in 1976, window falls and deaths from window falls in NYC have drastically declined
- In 1977, 151 falls (25 fatalities) from windows compared to 4 falls in 2010 (0 fatalities)
- By law, all multiple dwellings with children younger than 10 years old must have window guards installed on all windows, except windows opening onto fire escapes
- Most effective tool for preventing children from falling from windows

Accomplishments

- Successfully integrated Healthy Homes into all inspections
- Continued to use partnerships to build capacity
- Adapted our lead database to target, track and evaluate Healthy Homes inspection results

Challenges

- Limited Resources
 - Difficult time for health department and our partners to implement new program areas
- Policy infrastructure to address other HH hazards
- Evaluating impact of HH is more difficult
 - If hazards are addressed, does the intervention have a health impact? City-wide health effects?
 - What is the cost effectiveness?

Healthy Homes Key Messages

- Maintenance of the home is critical
 - Address moisture problems
 - Fix Keep it Clean and Dry
 - Fix Peeling Paint
 - Pest Proof Your Home
 - Reduce Use of Chemicals
 - Keep it Smoke Free
 - Prevent Accidents at Home

How Delaware Created a Comprehensive, Statewide Healthy Homes Program

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Public Health Is Full of Silos

- Most public health efforts take a categoric approach to home health & safety hazards
- *Focus is usually on one health hazard issue, even in the presence of multiple issues*
- Delaware's HH approach eliminated silos & turf wars while promoting teamwork



Delaware's HH Model *"Different Is Good"*

- CDC was concerned with Delaware's HH approach. "No one else is doing it that way."
- *HUD & CDC Recommendations = Lead Program adds HH services to workload*
- Delaware's HH Model = Merge like programs together and work as a team
- *Key to getting buy-in from staff = share the work load across all programs*

SOLUTION: Creation of the Office of Healthy Environments

- Researched national HH models from HUD, CDC, EPA, but custom-designed our program
- *Goal is to identify health, safety & quality-of-life issues in the home and act systematically to eliminate or mitigate problems.*
- Coordinate the efforts of existing programs, such as lead, radon, indoor air quality, etc., under one umbrella

Office of Healthy Environments

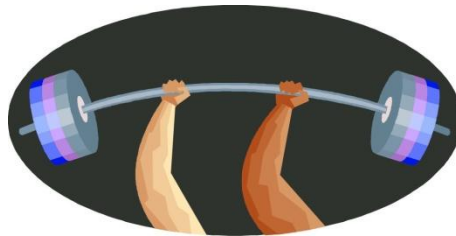
- Healthy Homes Program
- Lead Poisoning Prevention Program
- Radon Awareness Program
- Occupational Health Program



All working together to address health problems in a multifaceted and comprehensive manner

Why Create the Office of Healthy Environments?

- More efficient utilization of scarce resources - both human and financial
- *Feds now funding HH approach, not just Lead*
- Integration of the program services provides better leverage for obtaining federal funding



Why Create the Office of Healthy Environments?

- Cross-training creates & promotes teamwork
- *Comprehensive data collection*
- Improved education & outreach to targeted communities in need
- *Easier to get buy-in from key partners - community, politicians, other State agencies*

Office of Healthy Environments 2010 Program Activities

- HH multi-media campaign (print, radio, Internet)
- *Identified potential internal & external partners*
- Free Healthy Homes courses offered in DE by Johns Hopkins School of Public Health.
- *Home health hazard assessments provided in homes statewide*
- Supplies & equipment purchased to be used to solve health hazards

Office of Healthy Environments 2011 Program Activities

- Increasing awareness by educating many more stakeholders.
- *Recruiting more internal & external partners (community groups, hospitals, etc...)*
- Continuing program infrastructure design (data tracking system, coordination of referrals, etc...)

Office of Healthy Environments 2011 Program Activities

- Applying for HUD, CDC, & EPA grants
- *Reaching out to more State programs so as to better respond to health hazards*
- Conduct home health hazard assessments statewide with a lead risk assessment if needed
- *Offering a wide variety of HH awareness training for stakeholders & partners*

Healthy Homes Training Classes offered in Delaware - Spring 2011

- Health Opportunities in Energy Audits
- *Essentials for Healthy Homes Practitioners*
- Healthy Homes for Community Health Workers
- *Integrated Pest Management to Reduce Health Hazards in Multi-Family Housing*
- Code Inspection for Healthier Homes

OHE contracted with Johns Hopkins School of Public Health to provide these classes in Delaware in the Spring 2011

Office of Healthy Environments

2012 Goals & Objectives

- HH & Lead **Strategic Plan** incorporating healthy homes, lead, radon, asthma
- *Implementation of new **HHL PSS** data tracking program, which includes documenting a range of home health hazard data, not just lead*
- Create a Delaware Healthy Homes & Lead **Advisory Board** to help guide future efforts

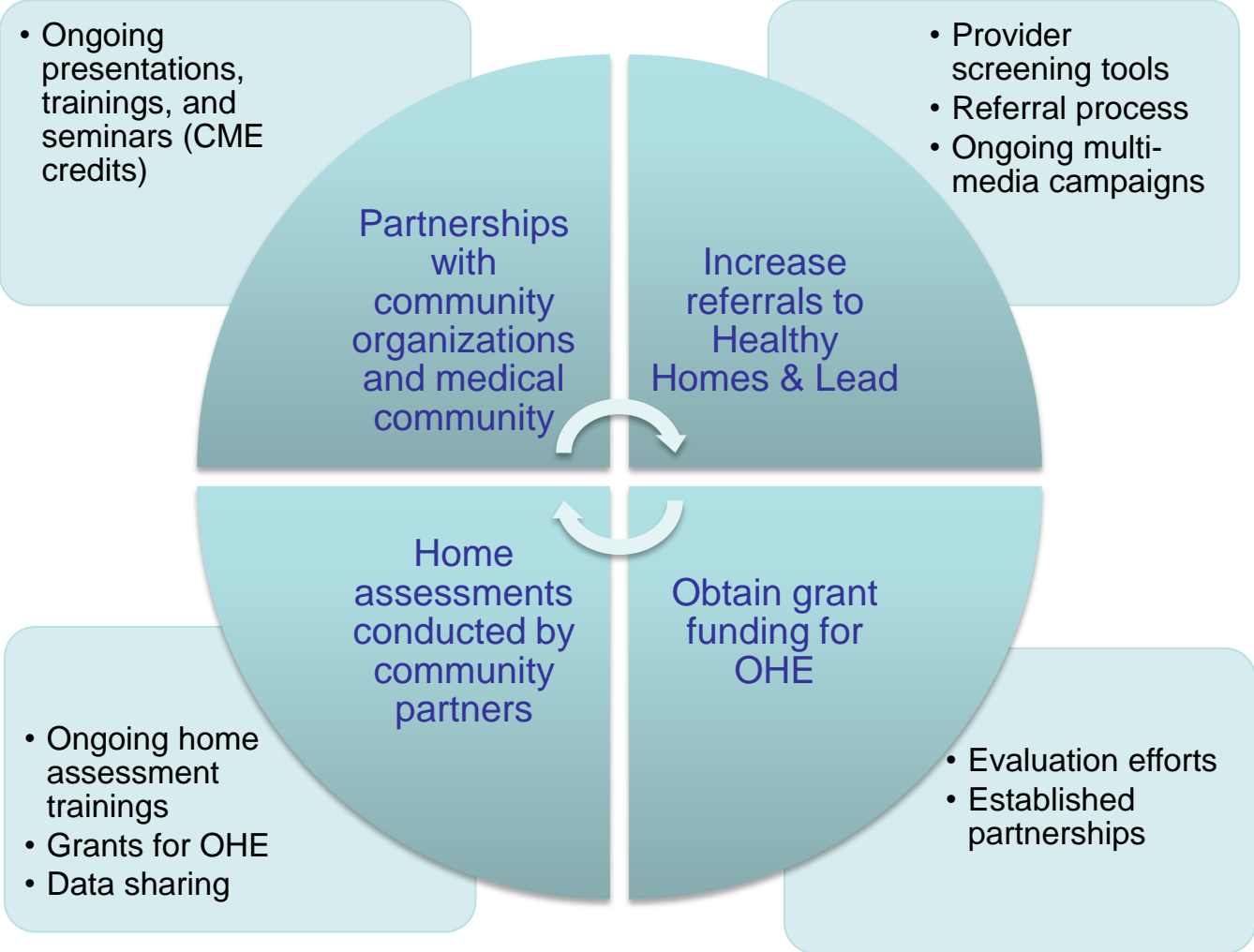
Office of Healthy Environments 2012 Goals & Objectives

- Incorporate new lead program procedures that greatly expand outreach services for families of lead poisoned children
- *Develop a database of lead-safe rental properties in Delaware*
- Create a statewide adult blood lead database

Office of Healthy Environments 2012 and Beyond

- Further integration of Lead and Healthy Homes Programs
- *Increase number of existing partnerships to include the medical community*
- Expanding program measurable outcomes to include [asthma](#).

Business Model for the Office of Healthy Environments



Program Success Indicators

- How well are the outreach efforts working?
 - # of partnerships established
 - # of trainings conducted
 - # of practices/providers using screening tool
 - # of referrals from partners and marketing
- How accessible is the program to the population in need?
 - # of assessments conducted by OHE
 - # of assessments conducted by partners

Program Outcome Indicators

- How effective is the program in addressing problems in the home?
 - Mold/moisture, chemical exposures, airborne irritants
- *How effective is the program in changing clients' behavior?*
 - *Recommendations followed*
- How effective is the program in reducing asthma symptoms and care?
 - ACT score & ER/urgent visits

Program Evaluation Methods

- Ongoing data collected on process measures
- *Qualitative information collected on success of outreach efforts*
- Baseline and follow-up assessments conducted

Lessons Learned - Words of Wisdom

- If you wait, it's too late.
- *Lead, follow, or get out of my way.*
- If not you, who?
- *Persistence breeds success.*
- The best way to persuade is with your ears.

Lessons Learned - Words of Wisdom

- Re-think the way you do business
- *Treat the home like a patient*
- Reorganize & merge programs to increase efficiency & teamwork
- *Set specific short-term goals that can be focused on with intent & immediacy*

Questions?

