

Home visits by public health nurses to reduce environmental triggers of asthma: successes, challenges and policy implications

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Presenter Disclosures

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

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Asthma is a chronic disease

- *Can not be cured
- *Represents a major public health problem in U.S.
- *Disproportionately impacts women, children and the poor
- *Can be most effectively controlled with comprehensive care that includes both medical and environmental management techniques

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Home visits provide an ideal setting

- * Educate about asthma
- * Review medication plans
- * Teach self-management skills
- * Help families to identify environmental factors in their homes contributing to their inability to control their asthma.



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Communities Reducing Environmental Triggers of Asthma (CRETA) 2008 - 2009



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Intervention model

- * **In-home education** on proper medical self-management of asthma and environmental triggers
- * **Environmental assessment** of the home to identify potential asthma triggers
- * **Low-cost product interventions** that are tailored to the child's environmental triggers of asthma and the household conditions

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MDH agency responsibilities

- ★ Facilitate monthly conference calls with local public health agencies
- ★ Provide technical assistance as needed
- ★ Meet with contracted evaluator
- ★ Process invoices
- ★ Keep in contact with funding agency



Local Public Health Agency responsibilities


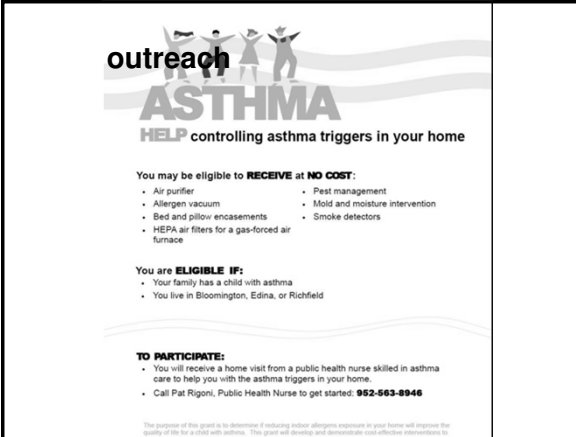
- ★ Participate in training
- ★ Accept and screen program referrals
- ★ Schedule home visits
- ★ Conduct health and home assessment; provide education and products
- ★ Collect data on behalf of their agency
- ★ Submit data to contract evaluator



Training

Public health nurses received training on:

- Asthma management techniques
- Environmental home assessment
- Low-cost/no-cost interventions

outreach
ASTHMA
HELP controlling asthma triggers in your home

You may be eligible to **RECEIVE** at **NO COST**:

- Air purifier
- Allergen vacuum
- Bed and pillow encasements
- HEPA air filters for a gas-forced air furnace
- Pest management
- Mold and moisture intervention
- Smoke detectors

You are **ELIGIBLE IF**:

- Your family has a child with asthma
- You live in Bloomington, Edina, or Richfield


TO PARTICIPATE:

- You will receive a home visit from a public health nurse skilled in asthma care to help you with the asthma triggers in your home.
- Call Pat Rigoni, Public Health Nurse to get started: **952-563-8946**

The purpose of this grant is to determine if reducing indoor allergen exposure in your home will improve the quality of life for children with asthma. This grant will describe and demonstrate successful interventions for

Components of an asthma home visit

- ★ Assessment of the health status of a child's asthma
- ★ Assessment of the home environment
- ★ Education of the child with asthma and his or her family
- ★ Provision of family and child specific allergen reducing supplies
- ★ Coordination of care and social services




Data collection

Baseline Home Visit Asthma Study


Name: _____ 888 = Don't Know
Case #: _____ 999 = Refusing to Answer
Clinician's Name: _____

General Info	Date		Smoking	Does anyone smoke?	
	Zip Code			N = 0	
	Age in Year-Month			Y = 1	
	Gender (Male = 1, Female = 2)			Referral to Outline	
	Interpreter Needed			N = 0	
	N = 0, 1 = Spanish, 2 = Hearing, 3 = Somali			Y = 1	
	Type of Provider			NA = not applicable	
	None = 0			None = 0, Cat = 1, Dog = 2, Dust mites = 3, Mold = 4, Cockroaches = 5	
	Generalist/Primary Care = 1			None = 0, Weeds = 1, Trees = 2, Grass = 3	
	Specialist = 2			None = 0, Peanuts = 1, Cow's Milk = 2, Soy = 3, Eggs = 4, Tree Nuts = 5, Wheat = 6, Other = 7	
Home Type - Single Family = 1, Duplex = 2, Apartment, apartment complex = 4, trailer = 5					
Primary Property - Tertiary = 1, Secondary = 2					





Functional asthma action plan

- ★ It is:
 - readily available
 - current
 - understandable and understood by the patient/caregiver



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Low cost consumer products

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Limitations

- ★ Small sample size
- ★ Six-month follow-up period is short
- ★ Seasonal trends in use of health services for asthma were untested
- ★ Reliance on self recall of health service utilization

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Results

- ★ 41 households, 35 primary & 5 secondary
- ★ 46 children enrolled –mean age 7.9



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Results

- ★ Statistically significant reductions in
 - Number of emergency department visits
 - Unscheduled office visits
 - Number of episodes of oral prednisone
- ★ Symptom burden declined for all three scales of CASF
 - Daytime symptoms
 - Nighttime symptoms
 - Functional limitations

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Return on investment

- ★ Average cost of products provided to families of children with asthma was \$489 with a range of \$231 to \$1460
Average cost per child was \$336
- ★ \$5.25 savings per \$1.00 spent on initial program activities

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Lessons Learned

- ★ Provision of in-home asthma education, environmental assessment of home, and low-cost product interventions are essential program components
- ★ With asthma specific training, PHN's serving suburban and rural communities can obtain successful outcomes



Lessons learned

Important program activities:

- ★ Include a functional asthma action plan as part of all asthma home visit health assessments
- ★ Share information with client's provider
- ★ Provide "fax referral" for tobacco users that are interested in quitting



Lessons learned

- ★ Focus on child's sleeping area
- ★ Important to follow a formalized evaluation plan and periodically reinforce evaluation requirements



Lessons learned

Challenges for LPH agencies

- ★ Program costs and logistics make it difficult to sustain program without additional funding
 - Administrative time to make the home visit
 - Need for interpreters
 - Product procurement and delivery to home



Lessons learned

Challenges for families

- ★ Financial barriers exist for some families in obtaining additional supplies such as replacement vacuum cleaner bags and furnace filters
- ★ Some families need care coordination including social service and housing referrals



Recommendations for LPH agencies

- ★ Local public health agencies should encourage their staff to be trained to conduct asthma home visits and use the Omaha system Individual Asthma Pathway to document client improvements



Recommendation: Omaha system asthma pathway

11/01/2009


Asthma Pathway (Individual)

Respiration


Category	Target	Care Description Note
S	Continuity of care	Adherence to asthma action plan
S	Durable Medical Equipment	Use of peak flow meter, nebulizer, and holding chamber
S	Signs/Symptoms-Physical	Chest tightness, wheezing, cough, shortness of breath, night awakenings from asthma
TGC	Durable Medical Equipment	Peak flow meter, nebulizer, and holding chamber
TGC	Wellness	Annual influenza vaccine, handwashing
TGC	Signs/Symptoms-Physical	Individual triggers, viral infections, allergies (e.g. grass/pollen), emotions/stress, exercise
TGC	Environment	Air Quality Index, Pollen counts
TGC	Anatomy/physiology	Pathophysiology of asthma
TGC	Signs/Symptoms-Physical	Evidence of Disease/Infection: Signs and symptoms of asthma
TGC	Exercises	Regular physical activity
TGC	Medication Action/Side Effects	Purpose/Benefit, Current asthma management practices including inhaler use, controllers and relievers, and side effects
CM	Medical/Dental Care	Coordination Among Providers: Primary care, asthma care specialist, allergist, school nurse
CM	Other community resources	Financial, housing, transportation, health insurance, educational support, tenants rights

Sanitation


Category	Target	Care Description Note
TGC	Environment	Relationship to disease
S	Environment	Mold and moisture
S	Environment	Pests such as rodents, cockroaches
S	Environment	Exposures to air from nearby traffic, diesel, tobacco, radon



Recommendation




<http://www.retahome.org>




Recommendations – policy implications

- ★ Minnesota Health Care Programs should provide reimbursement to PHN's for asthma home visits to children with uncontrolled asthma
- ★ Minnesota Health Plans should provide asthma home visits as part of their disease management programs
- ★ Specialized training on asthma should be provided to assure that qualified staff are available to implement the program statewide




Recommendations – policy implications


- ★ Education about the relationship between tobacco smoke and asthma should be included as part of the home visit
- ★ Action steps to control the presence of allergens inside the home is a primary consideration for these programs



Success story

- ★ All agency representatives indicated that they believed the program had made a difference.
- ★ Improving the lives of children with asthma and their families





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