Healthy Homes In Seattle/King County

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September 21, 2012
Healthy Homes I

- In-home environmental assessment and education by community health workers
- Comparison of single visit model to more intensive multi-visit model
- RCT of 274 low-income households with children with asthma
- Published in American Journal of Public Health, April 2005
Community Health Workers

• Lay people from the community

• Share culture, language and life experiences with clients

• Personal experience with asthma

• Skilled at building trusting and supportive relationships with clients

• Bridge between community and service providers

• Receive rigorous and standardized training
Eligibility
- Household income below 200% poverty
- Child age 4-12 with asthma

Randomized controlled design

High intensity group
- N = 138
- full intervention

Low intensity group
- N = 136
- One visit, follow-up call, bedding covers only
Outcome: Urgent Health Services

- p-values:
  - 0.000 (high intensity, baseline vs. exit, chi-square)
  - 0.414 (low intensity, baseline vs. exit, chi-square)
  - 0.041 (exit, low vs. high intensity, regression adjusted for baseline score)
Outcome: Symptom Days

p-values:
0.000  (high intensity, baseline vs. exit, chi-square)
0.000  (low intensity, baseline vs. exit, chi-square)
0.123  (exit, low vs. high intensity, regression adjusted for baseline score)
Outcome: Caregiver Quality of Life

p-values:
0.000  (high intensity, baseline vs. exit, chi-square)
0.006  (low intensity,  baseline vs. exit, chi-square)
0.001  (exit, low vs. high intensity, regression adjusted for baseline score)
Healthy Homes II

Funding source: NIEHS
Overview

- Home visits by Community Health Workers
- Address reduction of indoor triggers and improving self-management skills
- Comparison of addition of CHW in-home asthma support to clinic-based nurse-provided education
- RCT of 309 low-income households with children age 3-13 with persistent/poorly controlled asthma
- Published in Archives of Peds and Adol Med 2009
Research Design

- **Eligibility**
  - Household income below 200% poverty
  - Child age 3-13 with asthma

- **Randomized controlled design**
  - Clinic asthma nurse only (153)
  - Clinic asthma nurse + CHW home visits (156)

- Compare outcomes at enrollment and one year later

- Community-based participatory research methods
Symptom-Free Days

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<th>Nurse+CHW</th>
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\( p = .003 \)
\( p = .046 \)
\( p = .000 \)
Urgent Health Services Use

% With Urgent Health Service Use

- Before Nurse: 49%
- After Nurse: 31.4%
- Before Nurse+CHW: 47.4%
- After Nurse+CHW: 24.4%

Statistical significance:
- Nurse: \( p = 0.000 \)
- Nurse+CHW: \( p = 0.228 \)
- Nurse+CHW: \( p = 0.000 \)
Caretaker Quality of Life

Before | After
--- | ---
Nurse | 5.6 | 6
Nurse+CHW | 5.6 | 6.2

p = .049

p = .000
Actions to Control Asthma

### Comparison

- **Nurse**
  - Before: 5.7
  - After: 6.8
  - p = .000

- **Nurse + CHW**
  - Before: 5.7
  - After: 7.6
  - p = .000

|| Action | Before | After | p Value |
|--------|--------|-------|---------|
| Nurse  | 5.7    | 6.8   | .000    |
| Nurse+CHW | 5.7  | 7.6   | .000    |

**Significance:**
- Differences are statistically significant at the p < .01 level.
Home Visits for Adults: HomeBASE

• Randomized controlled trial comparing intervention to usual-care

• 366 participants
  ■ Age 18-65
  ■ Not well controlled asthma or worse
  ■ Speak either English or Spanish
  ■ Household income below 250% of federal poverty level

• Intervention
  ■ Intake visit and 4 follow-up visits by CHW
  ■ Self-management support
  ■ Supplies (bedding covers, bedding encasement, cleaning supplies, HEPA air filters, medication boxes)
  ■ Coordination with primary care

Funding source: NIEHS
HomeBASE
Outcomes

• Outcomes
  • Symptom-free days: 2.1 more per 2 weeks (95% CI = 1.0-3.2, p < 0.001)
  • Quality of Life: 0.5 units more (95% CI = 0.3-0.7, p < 0.001)
  • Urgent care utilization: no difference
  • ACQ score: 0.56 units better (95% CI = 0.34-0.77, p < 0.001)

• Intermediate mediators
  • Better medication use
  • Dust Control
  • Fewer pets
  • Action plan use
Homes We Have Visited
1,218
Conclusions

• Home visits by CHWs that address self-management support and indoor trigger exposure improve asthma outcomes

• Addition of home visits by CHWs to clinic-based education improves asthma outcomes

• CHW home visits add 21 more symptom-free days per year in children, 55 in adults

• Benefits in quality of life and urgent health service use are more modest
Conclusions

- 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
Key Elements of Home Visit Program

- **Visitor**: CHW with caseload of 50-60 clients
- **Client**: Poorly controlled asthma
- **Number of visits**: Initial and 3 follow-up
- **Content**
  - Self-management skills
  - Trigger reduction
  - Effective communication with medical provider
  - Coordination with medical home
- **Approach**
  - Client-centered, motivational interviewing
  - Address psychosocial needs and resource barriers
  - Provide social support
Key Elements of Home Visit Program

- **Supplies**
  - Vacuum
  - Bedding encasements
  - Cleaning kit
  - HEPA air filter for subset

- **Client tracking and follow-up**

- **Program infrastructure**
  - Training and continuing education
  - Supervision of home visitors
  - Clinical back-up
  - Quality monitoring
  - Data system
Implementing Home Visits

- **Cost**: $700-900 per household
- **Recruitment**
  - Plan identifies members with poorly controlled asthma
    - Utilization
    - Medications
  - Plan invites member to participate
  - Healthy Homes contacts member and enrolls
- **Coordination**
  - Visit encounters shared with plan and provider
  - Phone, email and or fax link between CHW and provider and plan chronic disease care coordinator
Implementing Home Visits

• Reimbursement
  - Per member served (fixed charge)

• Evaluation
  - Plan tracks utilization, costs, medications
  - Healthy Homes tracks symptoms, control measures
The End...Thanks