Asthma Health Outcomes Project (AHOP)

Characteristics of Success

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Identify characteristics of successful asthma programs that include an environmental component
Codify success characteristics
Inform ongoing asthma efforts
Guide future funding and research
Facilitate information-sharing and outcome achievement in the asthma community

Goals of AHOP

Project Phases

Phase I: Program Identification
- Retrieve articles published in peer-reviewed literature describing interventions and their outcomes
- Solicit nominations of programs from over 2500 key informants around the world
Program Inclusion Criteria

- **Focus on asthma**
- **Include an environmental component**
  - e.g., education about asthma triggers, trigger remediation, system or policy change
- **Measure health outcomes**
  - e.g., asthma symptoms, ED visits, hospitalizations

Project Phases

**Phase II: Data Collection**
- In depth interviews with representatives of 169 programs
- Creation of program profiles with all extant information

**Phase III: Data Analysis**
- **Quantitative**
  - Frequencies of 223 programs; bivariate analyses of 111 published programs, with confirmation among the 65 published programs that evaluated with randomized controlled trial designs
- **Qualitative**
  - Analysis of responses to open-ended questions about program challenges, strengths, and unintended impacts from the set of all 223 programs
Data Analysis

1. Bivariate analysis to identify programmatic factors associated with positive health and environmental outcomes using published programs only (n=111)
   - χ² statistics using Fisher’s exact test at 0.05 significance level

2. Bivariate analysis among published RCT only programs (n=65) to confirm findings among all published programs

3. Calculation of frequencies of identified programmatic factors among all surveyed programs (n=223)

### Community Centered

<table>
<thead>
<tr>
<th>Programmatic Factor</th>
<th>Associated Outcome</th>
<th>n</th>
<th>p-value</th>
<th>Odds Ratio [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had an office located within the target community</td>
<td>Hospitalizations</td>
<td>53</td>
<td>0.04</td>
<td>3.71 [1.00, 94.78]</td>
</tr>
<tr>
<td></td>
<td>ED visits</td>
<td>44</td>
<td>0.04</td>
<td>10.18 [1.02, 101.52]</td>
</tr>
<tr>
<td></td>
<td>Health care utilization</td>
<td>59</td>
<td>0.01</td>
<td>15.64 [1.58, 154.28]</td>
</tr>
</tbody>
</table>
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<tbody>
<tr>
<td>Involved community-based organizations in program planning</td>
<td>Health care utilization</td>
<td>13</td>
<td>0.03</td>
<td>30.00 [1.47, 611.80]</td>
</tr>
<tr>
<td>Collaborated with community-based organizations</td>
<td>Health care utilization</td>
<td>16</td>
<td>0.04</td>
<td>21.00 [1.50, 293.25]</td>
</tr>
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</table>

## Responsive to Need

<table>
<thead>
<tr>
<th>Programmatic Factor</th>
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<tr>
<td>Conducted a needs assessment</td>
<td>School absences or work loss</td>
<td>22</td>
<td>0.02</td>
<td>22.09 [2.25, 216.6]</td>
</tr>
<tr>
<td>Designed program to target a particular race or ethnic group</td>
<td>Quality of life for parents</td>
<td>16</td>
<td>0.02</td>
<td>18.3 [imputed]</td>
</tr>
<tr>
<td>Assessed trigger exposure</td>
<td>Quality of life for adults</td>
<td>25</td>
<td>0.02</td>
<td>15.60 [1.48, 164.38]</td>
</tr>
</tbody>
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</thead>
<tbody>
<tr>
<td>Tailored content or delivery based on individual participant’s health or educational needs</td>
<td>Symptoms</td>
<td>54</td>
<td>0.03</td>
<td>4.81 [1.26, 18.31]</td>
</tr>
<tr>
<td></td>
<td>Quality of life for adults</td>
<td>22</td>
<td>&lt;0.01</td>
<td>121 [imputed]</td>
</tr>
<tr>
<td></td>
<td>Quality of life for children, adults or parents</td>
<td>42</td>
<td>0.01</td>
<td>12.08 [1.88, 77.66]</td>
</tr>
</tbody>
</table>
## Responsive to Need

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</tr>
</thead>
<tbody>
<tr>
<td>Tailored intervention based on assessed trigger sensitivity</td>
<td>Quality of life for children</td>
<td>8</td>
<td>0.04</td>
<td>65 [imputed]</td>
</tr>
<tr>
<td></td>
<td>Quality of life for children, adults or parents</td>
<td>14</td>
<td>&lt;0.01</td>
<td>161 [imputed]</td>
</tr>
</tbody>
</table>

## Collaborative

<table>
<thead>
<tr>
<th>Programmatic Factor</th>
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<th>n</th>
<th>p-value</th>
<th>Odds Ratio [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborated with other agencies or institutions</td>
<td>Hospitalizations</td>
<td>43</td>
<td>0.02</td>
<td>8.75 [1.42, 53.91]</td>
</tr>
<tr>
<td>Collaborated with governmental agencies</td>
<td>ED Visits</td>
<td>29</td>
<td>0.04</td>
<td>10.00 [1.02, 95.23]</td>
</tr>
<tr>
<td>Collaborated with community-based organizations</td>
<td>Health care utilization</td>
<td>16</td>
<td>0.04</td>
<td>21.00 [1.50, 293.25]</td>
</tr>
<tr>
<td>Collaborated with other agencies or institutions on technical assistance</td>
<td>Health care utilization</td>
<td>15</td>
<td>0.04</td>
<td>17.50 [1.22, 250.36]</td>
</tr>
<tr>
<td>Collaborated with other agencies or institutions on policy action</td>
<td>Medication use</td>
<td>27</td>
<td>0.04</td>
<td>10.00 [1.03, 97.50]</td>
</tr>
<tr>
<td></td>
<td>School absences</td>
<td>18</td>
<td>0.01</td>
<td>24.56 [imputed]</td>
</tr>
</tbody>
</table>
**Clinically Connected**

<table>
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<tr>
<th>Programmatic Factor</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Component took place in a physician’s office or clinic</td>
<td>ED Visits</td>
<td>55</td>
<td>0.01</td>
<td>4.92 [1.48, 16.34]</td>
</tr>
<tr>
<td>Educated health care providers (including school nurses)</td>
<td>School Absences</td>
<td>25</td>
<td>0.02</td>
<td>13.50 [1.75, 103.88]</td>
</tr>
</tbody>
</table>

**Programmatic Factors, by Health Outcome**

- An office located in the target community
- Component took place in doctor’s office or clinic
- Involved CBOs in program planning
- Collaborated with other agencies or institutions, especially CBOs and governmental agencies
- Collaborated on technical assistance

**Health Care Utilization**

- ED Visits
- School Absences
Quality of Life
- Tailored intervention based on an assessment of trigger sensitivity
- Tailored content based on individual’s health or educational needs
- Assessed trigger exposure
- Designed program to target particular race or ethnicity

School Absences and/or Work loss
- Educated health care providers, including school nurses
- Conducted a needs or resource assessment
- Collaborated with other agencies on policy action

Asthma Symptoms
- Tailored content based on individual’s health or educational needs

Medication Use
- Collaborated with other agencies on policy action
How extensive is effective program planning and implementation?

Among the 14 factors reviewed:

- 4 were implemented by more than 75% of programs
- 7 were implemented by 50 to 75% of programs
- 3 were implemented by less than 50% of programs

Themes of Success

- Community-Centered
- Responsive to Need
- Collaborative
- Clinically Connected

Significance of Findings and Importance of Community Efforts
Challenges to Conferees:

- Explore how to strengthen collaborations between government, community-based groups, voluntary organizations, the private sector, universities, medical facilities

Challenges to Conferees:

- Consider ways to get the word out to key stakeholders regarding the characteristics that accompany program success
- Find and support leaders whose perspectives and leadership style reflect an understanding of success characteristics

Asthma Health Outcomes Project Team

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Daniel F Awad, MA

AHOP is a project of the Center for Managing Chronic Disease at the University of Michigan
Conducted under a cooperative agreement with the Indoor Environments Division of the US EPA
Products

- Complete list of all identified programs (>500) with contact information
- Comprehensive description of each surveyed program
- AHOP survey instrument
- Project Reports

available on
AlliesAgainstAsthma.net/ahop

Supplemental Slides

Program Survey

- Context
- Planning and Design
- Implementation
- Outcomes Evaluation
  - Health Outcomes
  - Environmental Outcomes
- Administration
- Impact and Sustainability
Descriptive Data from 223 Evaluated Programs

What type of agency is the managing organization?

What strategies were used in the program overall?
Which environmental triggers were addressed?

![Bar chart showing percentages of different environmental triggers addressed.]

What strategies were used to address environmental issues or topics?

![Bar chart showing percentages of different strategies used.]

Age groups addressed by programs

Geographic areas addressed by programs

![Bar chart showing percentages of age and geographic areas addressed.]

Which environmental triggers were addressed?

- Dust: 82%
- Cord: 81%
- ETS: 71%
- Mold: 68%
- Outdoor allergens: 67%
- Dampness: 62%
- Outdoor air quality: 51%
- Roof: 51%
- Pedestals: 20%
- Other: 100%

What strategies were used to address environmental issues or topics?

- Education: 88%
- Exposure assessment: 74%
- Actions to change home environment: 40%
- Environ policy change: 12%
- Actions to change institutional environment: 7%

Age groups addressed by programs:

- Children ≤5 years: 90%
- 6-19 years: 12%
- 20-29 years: 20%
- ≥30 years: 40%

Geographic areas addressed by programs:

- Urban: 80%
- Suburban: 40%
- Rural: 33%
Percent of participants in programs by race/ethnicity

Percent of participants in programs by socio-economic status

Percent of programs reporting community centered programmatic factors

- 93% had an office located in the target community
- 41% collaborated with community-based organizations*
- 68% involved community-based organizations in planning the program

* among those collaborating with other agencies or organizations

Percent of programs reporting programmatic factors that are responsive to need

- 72% conducted a needs or resource assessment
- 20% were designed to target a particular race or ethnic group
- 84% tailored their content or delivery based on individual participants’ health or educational needs
83% of programs that assessed trigger sensitivity tailored the intervention based on the assessment.

74% assessed trigger exposure as an environmental strategy.

90% collaborated with other agencies or institutions.

56% collaborated with governmental agencies*.

41% collaborated with community-based organizations*.

59% collaborated on technical assistance*.

60% collaborated on policy action*.

* among those collaborating with other agencies or organizations.

51% educated healthcare providers (including school nurses).

49% reported a component in a MD office or clinic.