Evaluation of Active Living by Design:

A mixed-methods approach to assessing implementation patterns across communities

Laura Brennan, PhD, MPH
February 26, 2013
An unconventional evaluation team...

- Ross Brownson, Co-PI
- Laura Brennan, Co-PI
- Elizabeth Baker
- Kelly Evenson
- Susan Handy
- Katherine Kraft
- James Sallis
- Sarah Strunk
- Phil Bors
- Laura Leviton
- Transtria
- 25 Community Partnerships
- ALBD

Funders: RWJF

Researchers & Evaluators

Policymakers & Practitioners

Uniting people, places and policies to revolutionize public health
“High touch/ low dollar” approach

Community partnerships received $40,000/year from 2003 to 2007 plus...

- Strong leadership
- Communications expertise
- Annual meetings
- Customized TA & support
- And fun!

Uniting people, places and policies to revolutionize public health
ALbD community partnership efforts launched in November 2003.

A previous plan to initiate an evaluation from the beginning of the ALbD program was discontinued in October 2005.

This plan for evaluation started in November 2006 (i.e., the start of the fourth year of the program).
Active Living by Design Community Action Model

**Supports → Strategies → Short Term Changes → Intermediate Changes → Health & Lifestyle Changes**

**Supports**
- Local Officials
- Existing Programs and Resource
- Coalitions and Advisory Groups
- Businesses and Non-Profit Groups
- Engaged Residents

**Strategies**
- Preparation
- Promotions
- Programs
- Policy Influence
- Physical Projects

**Short Term Changes**
- Partnership capacity to promote active living
- Awareness of health benefits of routine activity
- Social support from family/peers
- Media coverage
- Policy changes
- Community Mobilization

**Intermediate Changes**
- Mainstreaming Opportunities for Active Living
- Community Environment

**Health & Lifestyle Changes**
- Physical Activity
  - Obesity
  - Diabetes
  - High Blood Pressure

**The 5 P’s**
- Cross-sector, multidisciplinary partnerships
- Varied settings, populations, and resources

**Social, economic, and environmental changes**
The 5 P's

Cross-sector, multidisciplinary partnerships

Varied settings, populations, and resources

Active Living by Design Community Action Model

Supports ➔ Strategies ➔ Short Term Changes ➔ Intermediate Changes ➔ Health & Lifestyle Changes

Supports
- Local Officials
- Existing Programs and Resource
- Coalitions and Advisory Groups
- Businesses and Non-Profit Groups
- Engaged Residents

Cross-sector, multidisciplinary partnerships

Varied settings, populations, and resources

Strategies
- Preparation
- Promotions
- Programs
- Policy Influence
- Physical Projects

The 5 P's

Social, economic, and environmental changes

Short Term Changes
- Partnership capacity to promote active living
- Awareness of health benefits of routine activity
- Social support from family/peers
- Media coverage
- Policy changes
- Community Mobilization

Intermediate Changes
- Mainstreaming Opportunities for Active Living
- Community Environment

Health & Lifestyle Changes
- Physical Activity
  - Obesity
  - Diabetes
  - High Blood Pressure

Behavior and health outcomes
Data collection approach

ALbD NPO communications
ALbD Progress Reporting System

Evaluation team communications
Key Informant Interview
Partnership Capacity Survey
Concept Mapping

Evaluation team site visits
Focus Group
Key Informant Interview
Environmental Audit
Direct Observation
Photos & Videos

Evaluation team follow up
Key Informant Interview

Data collection process
Use of data

Uniting people, places and policies to revolutionize public health
<table>
<thead>
<tr>
<th>Method</th>
<th>Purpose</th>
<th>Indicators</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progress Reporting System</td>
<td>Track planning and implementation activities, intended and unintended consequences of these activities in real-time.</td>
<td>Partnership, Preparation, Promotions, Programs</td>
<td>Project director and/or coordinator, ALbD, National Program Office staff (n = 25 communities)</td>
</tr>
<tr>
<td>Partnership capacity surveys</td>
<td>Identify characteristics of the partnership, leadership, and relationships to the community.</td>
<td>Partnership’s purpose and goals, Partnership functioning, Leadership, Partnership resources, Partnership’s relationship with the community</td>
<td>Community partnership members and staff (n = 28 respondents and 25 communities)</td>
</tr>
<tr>
<td>Concept mapping</td>
<td>Identify, categorize, and prioritize active living strategies for creating community change and increasing physical activity behavior.</td>
<td>Actions or changes that occurred in the community to support active living</td>
<td>Community partnership members, staff, and community members (n = 43 respondents and 23 communities)</td>
</tr>
<tr>
<td>Method</td>
<td>Purpose</td>
<td>Indicators</td>
<td>Participants/ Observations</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Key informant interviews (2007 to 2009)</td>
<td>Gain insights from staff and partners and to set the stage for the site visits by the evaluation team.</td>
<td>Lead agency and community partnership characteristics Planning and implementation activities Intended and unintended consequences</td>
<td>Staff (n = 31 [before], 57 [during], and 9 [after] site visits in 25 communities) Partners (n = 1 [before], 69 [during], and 5 [after] site visits in 23 communities)</td>
</tr>
<tr>
<td>Focus groups (2007 to 2008)</td>
<td>Validate PRS reporting, gain insights from community partners and staff (planners and implementers) as well as community members.</td>
<td>Community assets and needs Planning and implementation Intended and unintended consequences Strengths and challenges of the initiative Technical assistance from ALbD</td>
<td>77 total focus groups Staff (n = 67 in 23 communities) Partners (n = 215 in 25 communities) Community members (n = 201 in 24 communities)</td>
</tr>
<tr>
<td>Photos and videos (2007 to 2008)</td>
<td>Capture physical activity behavior, environmental conditions, or intervention activities.</td>
<td>Images of people/ behaviors Images of environmental conditions (before and after intervention) Images of intervention activities</td>
<td>Streets, trails, recreation facilities, and community members (n = 25 communities)</td>
</tr>
</tbody>
</table>
## Evaluation Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Purpose</th>
<th>Indicators</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>Document the implementation of physical projects.</td>
<td>Types of residential and non-residential land uses</td>
<td>Street audits (n = 45 segments in 5 communities)</td>
</tr>
<tr>
<td>audits (2007)</td>
<td></td>
<td>Pedestrian and bicyclist infrastructure</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Street design characteristics</td>
<td>Trail audits (n = 3 in 3 communities)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Traffic calming and safety measures</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parks, playgrounds, and recreational facilities (presence and condition)</td>
<td>School facility audit (n = 1 in 1 community)</td>
</tr>
<tr>
<td>Direct observation</td>
<td>Document the impact of physical projects on the physical activity behavior of community members.</td>
<td>Counts of individuals (e.g., children, adults) as well as their physical activity level (sedentary, walking, biking, running) in selected environments</td>
<td>Streets (n = 11 locations in 5 communities for 30 hours of observation)</td>
</tr>
<tr>
<td>(2007)</td>
<td></td>
<td></td>
<td>Trails (n = 3 trails in 3 communities for 8 hours of observation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>School facility (n = 1 facility in 1 community for 1 hour of observation)</td>
</tr>
</tbody>
</table>
Triangulating mixed methods

Community Partnerships
- Responding
- Coding
- Monitoring

ALbD NPO
- Transcription
- Coding
- Concept maps

Evaluation Team
- Labeling
- Coding
- Interpreting
- Descriptive analyses
- Data reduction
- Configural frequency analysis

Partnership Capacity Survey
- Responding
- Brainstorming
- Sorting
- Rating

Interviews/Focus Groups
- Responding
- Concept Mapping

Photos & Videos
- Touring

Progress Reporting System
- Transcription
- Data reduction
- Configural frequency analysis

Community Case Reports
- Cross-site Evaluation Findings

Uniting people, places and policies to revolutionize public health
### Community Variables

**Proportion of Non-Caucasian Racial/ Ethnic Populations**
- 52% of community partnerships
- > 40%
- < 40%

**Proportion of Population in Poverty**
- 20% of community partnerships
- > 40%
- < 40%

**Population Size – Proportion of Large or Small**
- 76% of community partnerships
- > 200,000
- < 200,000

**Geographic Scale – Proportion of Large or Small**
- 32% of community partnerships
- Metro area/ county
- Neighborhood

20% of community partnerships were located in southern states.
## More Partnership & Community Capacity…

<table>
<thead>
<tr>
<th>Capacity Dimension</th>
<th>Examples</th>
<th>Mean % Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose &amp; Goals</td>
<td>- Goals are clearly defined</td>
<td>96%</td>
</tr>
<tr>
<td></td>
<td>- Decisions are based on community needs</td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td>- Partners have access to enough space to conduct daily tasks</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td>- Partners have access to equipment to conduct daily tasks</td>
<td></td>
</tr>
<tr>
<td>Functioning</td>
<td>- Procedures are clearly defined</td>
<td>78%</td>
</tr>
<tr>
<td></td>
<td>- Partners have input into decisions made</td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>- Leaders have skills to succeed</td>
<td>87%</td>
</tr>
<tr>
<td></td>
<td>- Partners trust the leadership</td>
<td></td>
</tr>
<tr>
<td>Community Context</td>
<td>- Partners work with different types of community groups</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td>- Groups in the community receive an equal amount of resources</td>
<td></td>
</tr>
</tbody>
</table>

Baker et al., 2012
Preparation Variables (cont.)

Assessments

- 48% > 10 assessments
- 52% < 10 assessments
Range: 4-46 assessments

Sustainability

- 56% > 2 strategies
- 44% < 2 strategies

Resources Generated

- 52% > $2 million
- 48% < $2 million
Range: $471,425 to $97,170,712
## More on Assessment

<table>
<thead>
<tr>
<th>Assessment Methods</th>
<th># of Grantees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental audit</td>
<td>22</td>
</tr>
<tr>
<td>Survey</td>
<td>15</td>
</tr>
<tr>
<td>Focus group</td>
<td>15</td>
</tr>
<tr>
<td>Mapping (including Geographic Information Systems)</td>
<td>10</td>
</tr>
<tr>
<td>Feasibility study</td>
<td>9</td>
</tr>
<tr>
<td>Other (e.g., resource inventory, health screening, soul testing)</td>
<td>7</td>
</tr>
<tr>
<td>Interviews</td>
<td>6</td>
</tr>
<tr>
<td>Community meeting/discussion forum</td>
<td>5</td>
</tr>
<tr>
<td>Charrette</td>
<td>5</td>
</tr>
<tr>
<td>Secondary data analysis</td>
<td>5</td>
</tr>
<tr>
<td>Policy analysis</td>
<td>2</td>
</tr>
<tr>
<td>Direct behavior observation</td>
<td>2</td>
</tr>
</tbody>
</table>
More on Sustainability

<table>
<thead>
<tr>
<th>Sustainability Strategies</th>
<th>Example Approaches</th>
</tr>
</thead>
</table>
| Expanding Partnerships         | Buffalo: Four Neighborhoods, One Community ([www.bnmc.org](http://www.bnmc.org))  
Louisville: Mayor’s Healthy Hometown ([www.louisvilleky.gov/HealthyHometown/](http://www.louisvilleky.gov/HealthyHometown/))  
Somerville: Shape Up Somerville ([www.somervillema.gov](http://www.somervillema.gov)) |
| Sustainable Funding            | Oakland: 1% of city budget on children’s services and increase to 2.5%  
Sacramento: 25- to 30-year transportation sales tax (pedestrian, bike, transit)  
Santa Ana: Ballot measure for citywide sales tax increase to support joint use ($5 to $7 million per year for maintenance and security) |
| Permanent Advisory Committees  | Cleveland: Bike/Pedestrian Advisory Committee  
Louisville: Built Environment Committee  
Nashville: Health and Fitness Task Force |
| Policy Change                  | Chicago: School Wellness Policies  
Honolulu: City Charter Amendment for a Bicycle/Pedestrian-Friendly Honolulu  
Orlando: Growth Management Policy |
| Institution/Organization Change| Charleston: Mobility Manager (ride shares, public transit, air quality)  
Columbia: Department of Non-motorized Transportation  
Jackson: School District Safe Routes to School Coordinator |
Variables: The Other 4Ps

Promotional Efforts
- 48% > 11 promotions
- 52% < 11 promotions
- Range 2-21 promotions

Programmatic Changes
- 48% > 8 programs
- 52% < 8 programs
- Range 3-16 programs

Policy Influences
- 48% > 8 changes
- 52% < 8 changes
- Range 1-23 changes

Physical Projects
- 56% > 11 projects
- 44% < 11 projects
- Range 2-21 projects
More on Programs & Promotions

<table>
<thead>
<tr>
<th>Strategies*</th>
<th>Community Partnerships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media (TV, radio, newspaper)</td>
<td>25</td>
</tr>
<tr>
<td>Safe Routes to School</td>
<td>15</td>
</tr>
<tr>
<td>Walking clubs</td>
<td>13</td>
</tr>
<tr>
<td>Bike/Walk to School Day</td>
<td>13</td>
</tr>
<tr>
<td>Presentations/ press conferences</td>
<td>13</td>
</tr>
<tr>
<td>Festivals/carnivals/fairs</td>
<td>12</td>
</tr>
<tr>
<td>Social marketing campaigns</td>
<td>11</td>
</tr>
<tr>
<td>Bicycle recycle and donations</td>
<td>9</td>
</tr>
<tr>
<td>Bike riding events</td>
<td>9</td>
</tr>
<tr>
<td>Wellness programs</td>
<td>8</td>
</tr>
<tr>
<td>Walking School Bus/Bike Train</td>
<td>7</td>
</tr>
<tr>
<td>Bike safety and education</td>
<td>6</td>
</tr>
<tr>
<td>Physical education and wellness programs</td>
<td>5</td>
</tr>
<tr>
<td>Wellness/fitness classes</td>
<td>5</td>
</tr>
</tbody>
</table>

*Strategies implemented by 4 or fewer community partnerships are not shown here.
## More on Policies & Physical Projects

<table>
<thead>
<tr>
<th>Policy Changes and Physical Project Strategies</th>
<th>Community Partnerships</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban Planning Sector, examples:</strong></td>
<td></td>
</tr>
<tr>
<td>• Housing and developments</td>
<td></td>
</tr>
<tr>
<td>• Zoning regulations/ordinances</td>
<td></td>
</tr>
<tr>
<td>• Local ordinances (street trees, bike parking)</td>
<td></td>
</tr>
<tr>
<td>• Subdivision regulations</td>
<td>16</td>
</tr>
<tr>
<td><strong>Active Transportation Sector, examples:</strong></td>
<td></td>
</tr>
<tr>
<td>• Bicycle and pedestrian street improvements</td>
<td></td>
</tr>
<tr>
<td>• Street design policies and standards</td>
<td>23</td>
</tr>
<tr>
<td>• Public transit improvements</td>
<td></td>
</tr>
<tr>
<td>• Traffic calming street improvements</td>
<td></td>
</tr>
<tr>
<td><strong>Park, Recreation, Open Space, and Trail Sector, examples:</strong></td>
<td></td>
</tr>
<tr>
<td>• Community trail development</td>
<td></td>
</tr>
<tr>
<td>• Park development and redevelopment</td>
<td>22</td>
</tr>
<tr>
<td>• Maintenance</td>
<td></td>
</tr>
<tr>
<td>• Land use policies (parks, recreation, and green/open spaces)</td>
<td></td>
</tr>
<tr>
<td><strong>School Sector, examples:</strong></td>
<td></td>
</tr>
<tr>
<td>• Safe Routes to School (environment)</td>
<td></td>
</tr>
<tr>
<td>• Recreation facilities on school grounds</td>
<td>19</td>
</tr>
<tr>
<td>• Schools policies (e.g., wellness, recess)</td>
<td></td>
</tr>
<tr>
<td>• Joint-use agreements</td>
<td></td>
</tr>
</tbody>
</table>
Variables: Integration of the 5Ps

“High” integration = use of at least 3 of 4 implementation strategies (4Ps)

Overall Integration

- High: 80%
- Low: 20%

Community Design

- High: 16%
- Low: 84%

Active Transportation

- High: 28%
- Low: 72%

Parks and Recreation

- High: 20%
- Low: 80%

School

- High: 36%
- Low: 64%

Uniting people, places and policies to revolutionize public health
### Configural Frequency Analysis

<table>
<thead>
<tr>
<th>Variable-oriented analysis</th>
<th>Case-oriented analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>How does each community perform on different variables for the 5Ps?</td>
<td>How do the 5P variable arrangements differ according to clusters of communities?</td>
</tr>
<tr>
<td>What are the associations between variables across communities?</td>
<td>What are the community patterns that are associated with different underlying systems?</td>
</tr>
</tbody>
</table>

Similar to cluster analysis and latent growth curve analysis, configural frequency analysis can detect configurations of cases that deviate from what is expected in a base model.

Deviations are the result of a system that “pushes” certain cases in a direction away from the general pattern.
Examples: Implementation Patterns

**Type: Policy Changes**
- Proportion of racial/ethnic populations
- Proportion of people in poverty
- Total policy changes
  \( (\chi^2 = 11.30, p < 0.001) \)

**Type: Integration**
- Total promotions
- Total programs
- Total policy changes
  \( (\chi^2 = 9.06, p < 0.01) \)

**Type: Promotions**
- Total assessments
- Total sustainability efforts
- Total promotions
  \( (\chi^2 = 9.09, p < 0.01) \)

**Type: Integration**
- Proportion of racial/ethnic populations
- Proportion of people in poverty
- Overall integration
  \( (\chi^2 = 9.46, p < 0.01) \)
Examples: Community Design

**Type: Policy Changes**
- Proportion of racial/ethnic populations
- Proportion of people in poverty
- Community design policy changes
  \((\chi^2 = 14.66, p < 0.001)\)

**Anti-Type: Promotions**
- Proportion of racial/ethnic populations
- Population size
- Community walk/bike promotions
  \((\chi^2 = 4.67, p < 0.05)\)

**Type: Physical Projects**
- Proportion of racial/ethnic populations
- Proportion of people in poverty
- Community design physical projects
  \((\chi^2 = 10.60, p < 0.01)\)

**Anti-Type: Programs**
- Proportion of racial/ethnic populations
- Population size
- Community walk/bike programs
  \((\chi^2 = 4.83, p < 0.05)\)
### Examples: Active Transportation

<table>
<thead>
<tr>
<th>Type: Policy Changes</th>
<th>Anti-Type: Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment activities</td>
<td>Community walk/bike promotions</td>
</tr>
<tr>
<td>Sustainability efforts</td>
<td>Active transportation policy changes</td>
</tr>
<tr>
<td>Active transportation policy changes</td>
<td>Active transportation physical projects</td>
</tr>
<tr>
<td>($\chi^2 = 11.30, p &lt; 0.001$)</td>
<td>($\chi^2 = 14.41, p &lt; 0.001$)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type: Physical Projects</th>
<th>Anti-Type: Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment activities</td>
<td>Community walk/bike promotions</td>
</tr>
<tr>
<td>Sustainability efforts</td>
<td>Active transportation policy changes</td>
</tr>
<tr>
<td>Active transportation physical projects</td>
<td>Active transportation physical projects</td>
</tr>
<tr>
<td>($\chi^2 = 13.23, p &lt; 0.001$)</td>
<td>($\chi^2 = 14.41, p &lt; 0.001$)</td>
</tr>
</tbody>
</table>

Uniting people, places and policies to revolutionize public health
### Examples: Parks and Recreation

**Type: Policy Changes**
- Parks and recreation partners
- Parks and recreation resources
- Parks and recreation policy changes
  \( (\chi^2 = 9.42, p < 0.01) \)

**Anti-Type: Promotions**
- Proportion of racial/ethnic populations
- Proportion of people in poverty
- Parks and recreation promotions
  \( (\chi^2 = 10.37, p < 0.01) \)

**Type: Physical Projects**
- Parks and recreation partners
- Parks and recreation resources
- Parks and recreation physical projects
  \( (\chi^2 = 10.54, p < 0.01) \)

**Anti-Type: Programs**
- Proportion of racial/ethnic populations
- Proportion of people in poverty
- Parks and recreation programs
  \( (\chi^2 = 9.50, p < 0.01) \)
## Examples: School

<table>
<thead>
<tr>
<th>Type: Physical Projects</th>
<th>Type: Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of racial/ ethnic populations</td>
<td>Proportion of racial/ ethnic populations</td>
</tr>
<tr>
<td>Proportion of people in poverty</td>
<td>Proportion of people in poverty</td>
</tr>
<tr>
<td>School physical projects</td>
<td>School programs</td>
</tr>
<tr>
<td>( \chi^2 = 11.04, p &lt; 0.001 )</td>
<td>( \chi^2 = 16.47, p &lt; 0.01 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type: Promotions</th>
<th>Type: Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of racial/ ethnic populations</td>
<td>Proportion of racial/ ethnic populations</td>
</tr>
<tr>
<td>Proportion of people in poverty</td>
<td>Proportion of people in poverty</td>
</tr>
<tr>
<td>School promotions</td>
<td>School integration</td>
</tr>
<tr>
<td>( \chi^2 = 11.76, p &lt; 0.01 )</td>
<td>( \chi^2 = 15.60, p &lt; 0.01 )</td>
</tr>
</tbody>
</table>
Some considerations for the field...

- Measures for community context and implementation variables
- Data discrepancies across methods
- Defining variables for analysis
- Summarizing complex findings
For more information...

- www.activelivingbydesign.org
- ALbD “Best Practices” supplement (available: http://www.activelivingbydesign.org/AJPM)
- www.transtria.com/albd
- ALR-funded sites (Columbia, MO and Somerville, MA)
Laura K. Brennan, PhD, MPH
laura@transtria.com