NE NC Partnership for Public Health
Cost Benefit Analysis

Molly Cannon, MPH
NCPHA Annual Meeting
Asheville, NC
September 30, 2009
NENCPPPH Background

• Formed in 1999 to:
  – Improve the health of people in NE NC
  – Maximize available resources and service potential of LHDs through cooperation
  – Reduce geographic, socioeconomic, and racial health disparities in the region

• Served as template to NC Public Health Incubator Collaborative

• Includes 10 agencies covering 18 counties
NENCPPPH Structure

• Guided by Governing Board – Health Directors from 10 agencies serving 18 counties; NCIPH; NCDPH; ECU

• Executive Committee

• Executive Director

• Fiduciary Agents

• Per Capita Dues

• Project Staff
NCNCPHPH Projects (FY 2009)

- Touch No Tobacco (HWT)
- Diabetes Sentinel Program (HWT)
- Heart Disease and Stroke Prevention (DPH)
- Health Disparities (OMH)
- HIV/Mobile Van (KBR, DPH)
- LEAN
- GIS – CDP EH Data Management
Evaluation Purpose

Is the juice worth the squeeze?
Evaluation Questions

• What are the non-reimbursable costs to each Partnership agency?

• What are the benefits to each Partnership agency?

• What are the additional costs/benefits associated with various committees?

• Is the percent of in-kind contribution reasonable compared to benefits?
Evaluation Process

- Held initial meeting with HD liaison, Exec. Director
- Developed evaluation plan
- Reviewed plan and obtained consent from health directors
- Consulted with HD liaison and Partnership Exec. Director on methods, survey data
- Consulted with program staff on output data
- Validated agency estimates twice with HDs
Methods - Data Collection

• Primary
  – Health Director Survey (10) led to…
  – Agency Staff Survey (2 to 6 staff, 37 total)

• Secondary
  – Partnership dues
  – Meeting minutes
  – Project output reports by county
  – Fiscal agent budgets
  – HD and staff salary data
Methods - Cost Categories

• Administrative
  – Time preparing and attending: Partnership Board meetings; and Steering, Strategic Planning, Executive, Finance, HR, Legislative/Advocacy Committees
  – Fiduciary agent
  – Assisting with grant proposals

• Project
  – Time reviewing materials, planning
  – Time spent supervising staff
Analysis Methods – Cost Data

- Health Director In-Kind Time (survey, meeting minutes, salary)

- Staff In-Kind Time (survey, salary)

- Dues
  - Multiplied FY 09 county’s service population by .10
Methods – Benefit Source Categories

• Project Budgets
  – Staff salaries
  – Staff supervision
  – Travel
  – Communications
  – Supplies
  – Printing
  – Consulting fees
  – Administrative overhead – fiscal agents
  – Sub-account overhead and materials
  – Technical application costs
Analysis Methods - Benefit Data

- Fiscal Agent Overhead
- Administrative Costs
- Project Funds
  - Health Disparities, Heart Disease and Stroke Prevention, LEAN – Total costs were divided by all 10 agencies
Analysis – Benefit Data, cont.

• Project Funds, cont.
  – For HIV, Touch No Tobacco, and Diabetes Sentinel, allotted benefits based on proportion of individual outputs received by agency.
    – Example: 45 of 1207 individuals educated in Agency A, or 3.7% of total outputs. Multiplied 3.7% by 206,000 (total cost of program) for $7,622.
  – GIS – Proportion (1/20) of web-based application to 4 GIS agencies
## Range of Costs

<table>
<thead>
<tr>
<th></th>
<th>Minimum % of FTE</th>
<th>Maximum % of FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Director</td>
<td>2.3%</td>
<td>14.2%</td>
</tr>
<tr>
<td>(Median = 9.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td>.67%</td>
<td>57.1%</td>
</tr>
<tr>
<td>(Median = 17.9%)</td>
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<td></td>
</tr>
<tr>
<td>Dues</td>
<td>$1,017</td>
<td>$16,647</td>
</tr>
<tr>
<td>(Median = $4,478)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cost</td>
<td>$10,378</td>
<td>$45,885</td>
</tr>
<tr>
<td>(Median = $21,789)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Leading Health Director Costs
Proportion of Total Hours (n=1,880)
Leading Staff Costs
Proportion of Total Hours (n=4,650)
Proportion of Project Benefits
Proportion of Total $$ (1,570,906)
## Financial Benefits

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Benefit</strong></td>
<td>$61,422</td>
<td>$305,852</td>
</tr>
<tr>
<td>(Median = $138,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Net Benefit</strong></td>
<td>$51,045</td>
<td>$269,741</td>
</tr>
<tr>
<td>(Median = $111,741)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost Benefit Ratio</strong></td>
<td>2.58</td>
<td>13.14</td>
</tr>
<tr>
<td>(Median = 6.46)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Financial Benefits of NCIPH
(not included in benefit calculation)

<table>
<thead>
<tr>
<th>Administrative</th>
<th>Evaluation Grant Writing</th>
<th>NCIPH Staff In-Kind</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$16,667</td>
<td>$8,333</td>
<td>$13,650</td>
<td>$38,650</td>
</tr>
</tbody>
</table>
## Project Outputs - # Individuals

<table>
<thead>
<tr>
<th>Prgrm</th>
<th># individual outputs by category</th>
<th>Total Outputs</th>
<th>Cost per output</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV</td>
<td>1,207 educated 1,054 screened 697 tested 10 in support group</td>
<td>2,968</td>
<td>$143</td>
</tr>
<tr>
<td>TNT</td>
<td>2,945 educated 70 role models 121 trained 22 schools with policies</td>
<td>3,158</td>
<td>$88</td>
</tr>
</tbody>
</table>
## Project Outputs

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<tr>
<td>Diab</td>
<td>2,035 educated, 479 screened, 13 role models, 31 churches with policies</td>
<td>2,558</td>
<td>$103</td>
</tr>
<tr>
<td>Disparities</td>
<td>44 DGC at trainings, 7 DGC attended retreat, 8 DGC attended Conf., 200 comm. members LC</td>
<td>259</td>
<td>$376</td>
</tr>
</tbody>
</table>
## Project Outputs

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<tbody>
<tr>
<td>HDSP</td>
<td>65 educated 99 trained 30 screened</td>
<td>194</td>
<td>$692</td>
</tr>
<tr>
<td>LEAN</td>
<td>71 staff members trained</td>
<td>71</td>
<td>$2,823</td>
</tr>
</tbody>
</table>

Multipe efficiency benefits
Benefits Described by Health Directors

• Overall Benefits
  – Networking (n=6)
  – LEAN (n=5)
  – Stroke, Tobacco (n=3)
  – HIV Van, Resources (n=2)
  – Billing Group, SA Coalition, Diabetes Sentinel (n=1)

• Committee Benefits
  – Involvement in decision making (Steering, Exec, Finance)
  – Increased knowledge of agencies, other Incubators (Steering, Exec.)
Challenges Described by Health Directors

• Overall Challenges
  – Time (n=7)
  – Dues (n=2)
  – Cost to agency (n=2)
  – Too many projects (n=2)

• Committee Challenges
  – Time (Steering, Exec, Finance)
  – Conflicting vision for Inc. funding (Steering)
Unintended Consequences

• Unemployment payouts, RIF's, unreimbursed time and travel expense
• Time away from office, extra hours
• Finding dues $$
• Project related stress
Other Costs

- Participation in projects like this, surveys
- Space rental
- Phone calls, fax, etc.
- Sharing information with county, Board of Health
- Use of conference room
- Paying employees to attend functions
Does the NENCPPPH Make it Possible to Receive Services?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Staff</td>
<td>100%</td>
<td></td>
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</table>
Quotes

• A small rural county frequently does not have access to resources, qualified/credentialed individually.

• Again, absolutely - as an example, our small health department would not have been able to participate in LEAN healthcare without funding assistance of the partnership.
Limitations

• Possibility of the following biases:
  – Selection bias
  – Recall bias
  – Recency effect

• Mean calculation of staff salary – not actual salary

• Benefits calculated with outputs not outcomes

• Uniqueness of NE Partnership
Discussion

• Large degree of variation in CB Ratio across agencies

• Cost variation
  – Percent FTE for health director and staff time varied
  – Difference in HD and staff salaries
  – Difference in dues paid
Discussion

• Benefit Variation
  – Tobacco, Diabetes, and HIV were drivers as their benefits were based on outputs
  – Agencies with programs “housed” in their counties tended to have higher outputs
  – Administrative overhead
CB Ratio Variation

• Low CB Ratio (n=4)
  – High percentage of staff FTE
  – Above median for HD FTE
  – No administrative overhead
  – Limited outputs for two agencies

• High CB Ratio (n=3)
  – Lower percentage of staff FTE
  – High number of outputs
  – Received administrative overhead
Considerations

• Cross sectional study
  – Variation in participation over 10 years
  – Variation in outputs over 10 years

• Staffing patterns (e.g., extended leave)
Is the Percent of In-kind Contribution Reasonable Compared to Benefits?

• Partnership Level
  – Perception of distribution of project resources
  – Examination of in-kind costs by HD and staff
  – Review of CB Ratio by agency

• Agency Level – depends on factors
  – Motivation and expectations for participating
  – Budgets
  – BoH, CC perceptions of findings
Questions, Comments, Reactions

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