New Jersey Public Health Practice-Based Research Network-DACS 71156

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- **Presenter Name(s):** Pauline Thomas, Susan German
- **Presenter Affiliations:** Rutgers New Jersey Medical School
- **Title of Presentation:** Determining the Public Health Costs of Tobacco Prevention and Control: A Comparison of 4 New Jersey Local Health Departments
- **Meeting:** PHSSR Research in Progress Webinar
- **Sponsor Organization:** National Coordinating Center for PHSSR and PH PBRN
- **Date:** April 8, 2015
- **Location:** Webinar
Determining the Public Health Costs of Tobacco Prevention and Control: A Comparison of 4 New Jersey Local Health Departments

Susan German, Anushua Sinha, Kevin Sumner, Nancy Raymond, Judith Migliaccio, Koren Norwood, Paschal Nwako, Pauline Thomas

April 8, 2015 PHSSR Webinar
New Jersey Public Health PBRN
Toll of Tobacco in New Jersey

• Largest preventable cause of disease and death
• After long decline, NJ adult smoking rate plateaued at 16%*
• NJ revenue for tobacco use prevention and control redirected to other purposes:
  – Tobacco sales tax-generated revenue
  – Master Settlement funds
• CDC recommends $2-$3 per capita for NJ tobacco state and community interventions**

*New Jersey Department of Health, Center for Health Statistics, (2013 data)
**Centers for Disease Control and Prevention, Office on Smoking and Health
New Jersey Local Health Departments (LHDs)

- 89* LHDs covering 566 municipalities
- All are units of local government
- Over 50% of revenue is from local sources
- Four jurisdictional structures:
  - Municipal (30)
  - Inter-local (contracting) (35)
  - County (19)
  - Regional Health Commission (5)

* As of April 2014
Objectives

• To determine elemental and total costs of local public health activities comprising tobacco prevention, reduction, and control

• To contribute to the understanding of costs involved in delivering efficient and effective set of public health services
Practice Settings

- PBRN-based Partnership of Co-Investigators from NJDOH, LHDs, and Rutgers
- From 15 volunteer LHDs, 4 selected for diversity of population characteristics, geographic location, and administrative structure
- Participating LHDs:
  - 2 Municipal
  - 1 Regional Health Commission
  - 1 County
- Incentive provided to participating LHDs ($500 gift card)
New Jersey DACS Study Sites

<table>
<thead>
<tr>
<th>LHD</th>
<th>Jurisdictional Structure</th>
<th>Population of Jurisdiction³</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Municipal1</td>
<td>15,184</td>
</tr>
<tr>
<td>2</td>
<td>Municipal2</td>
<td>26,674</td>
</tr>
<tr>
<td>3</td>
<td>Regional</td>
<td>43,462</td>
</tr>
<tr>
<td>4</td>
<td>County</td>
<td>512,854</td>
</tr>
</tbody>
</table>
Key Informant Interviews

• Listing of activities:
  – Inventory of tobacco prevention and control activities in 2013
  – Component breakdown for each activity (production function), including labor and non-labor resources

• Cost and Labor Data:
  – Quantify resources (Personnel hours, supplies, equipment, transportation, facilities)
  – Determine unit cost for each resource (to be multiplied by quantity to estimate cost for resource)

• Interview forms adapted from the Substance Abuse Services Cost Analysis Program (SASCAP™) questionnaires
Cost Estimation

• Perspective: Local health department

• Time frame: Calendar year 2013

• (Retrospective) cost accounting approach

• Counts of resources multiplied by unit costs to estimate cost for resource

• All costs expressed in U.S. dollars 2013
### Example of Time Allocation Table

**Time Allocation for Personnel: Enforcement of Outdoor Smoke-Free Ordinance**

<table>
<thead>
<tr>
<th>Job Type</th>
<th># of people</th>
<th>Column B</th>
<th>Column C</th>
<th>Column D</th>
<th>Column E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hours Spent in Specified Year</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Administraitve</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>REHS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health Officer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health Educator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Public Health Nurse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intern</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Volunteer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Board Member</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Job Type ]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Notes:*
- **Column A**: Job Type
- **Column B**: 
  - # of people
  - Administrative
  - REHS
  - Health Officer
  - Health Educator
  - Public Health Nurse
  - Intern
  - Volunteer
  - Board Member
  - [Job Type ]
- **Column C**: Hours Spent in Specified Year
  - Pay
  - Investigate
  - Visit
  - Issue
  - Attend
  - Follow up
  - Complete
  - Surveillance
- **Column D**: Sum of annual hours worked by all staff indicated in Column B
- **Column E**: Comments
Data Sources

- Activity inventory and breakdown via key informant interviews
- Mixed-source cost data via LHD key informant interviews:
  - Expenditure reports, price lists, payroll, budgets
- Facility opportunity cost estimation:
  - Average office asking rental rate psf for county of LHD
- Volunteer labor opportunity cost estimated by average wage for each volunteer’s respective profession
- US Census 2013 Population Estimates Program used for population denominator values
## Tobacco Prevention and Control Activities

### Select Activities for CY 2013

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of LHDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy development</td>
<td>4</td>
</tr>
<tr>
<td>Enforcement of the NJ Smoke-free Air Act (NJSFAA)</td>
<td>3</td>
</tr>
<tr>
<td>Referral for tobacco cessation</td>
<td>3</td>
</tr>
<tr>
<td>Dissemination of educational materials</td>
<td>3</td>
</tr>
<tr>
<td>Tobacco Age of Sale Enforcement (TASE)</td>
<td>2</td>
</tr>
<tr>
<td>Community Involvement / Community Transformation Grant</td>
<td>2</td>
</tr>
<tr>
<td>Implementation of tobacco cessation</td>
<td>1*</td>
</tr>
<tr>
<td>Educational mass media</td>
<td>1*</td>
</tr>
<tr>
<td>Regional tobacco-use surveillance</td>
<td>1*</td>
</tr>
</tbody>
</table>

* County LHD
Tobacco activity and costs by LHD

<table>
<thead>
<tr>
<th>LHD Type</th>
<th># of Activities</th>
<th>Population</th>
<th>Total Cost ($)</th>
<th>Cost per capita ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal1</td>
<td>7</td>
<td>15,184</td>
<td>6,144</td>
<td>0.41</td>
</tr>
<tr>
<td>Municipal2</td>
<td>5</td>
<td>26,674</td>
<td>1,912</td>
<td>0.07</td>
</tr>
<tr>
<td>Regional</td>
<td>2</td>
<td>43,462</td>
<td>1,726</td>
<td>0.04</td>
</tr>
<tr>
<td>County</td>
<td>12</td>
<td>512,854</td>
<td>406,487</td>
<td>0.79</td>
</tr>
</tbody>
</table>
Tobacco Activity Cost Structure, by LHD

<table>
<thead>
<tr>
<th></th>
<th>Municipal1</th>
<th>Municipal2</th>
<th>Regional</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>66%</td>
<td>41%</td>
<td>75%</td>
<td>44%</td>
</tr>
<tr>
<td>Non-employee labor</td>
<td>19%</td>
<td>5%</td>
<td>5%</td>
<td>56%</td>
</tr>
<tr>
<td>Non-labor</td>
<td>14%</td>
<td>54%</td>
<td>20%</td>
<td></td>
</tr>
</tbody>
</table>
Total Cost Including State Expenditure

• State-level *per capita* tobacco spending for FY 2013: $0.40* (mostly federal funds)

• Adding this to LHD costs, *per capita* spending on state and community interventions: $0.44 - $1.19

*New Jersey Department of Health, Division of Family Services, Community Health and Wellness, Office of Tobacco Control. FY 2013 NJ Tobacco Expenditures.*
Per Capita Allocation: LHD, State, CDC Recommended

Municipal1: $1.83
- LHD Per Capita: $0.41
- LHD & State Per Capita: $0.40
- CDC Rec. Per Capita: $1.00

Municipal2: $2.17
- LHD Per Capita: $0.07
- LHD & State Per Capita: $0.40
- CDC Rec. Per Capita: $1.70

Regional: $2.20
- LHD Per Capita: $0.04
- LHD & State Per Capita: $0.40
- CDC Rec. Per Capita: $1.76

County: $1.45
- LHD Per Capita: $0.79
- LHD & State Per Capita: $0.40
- CDC Rec. Per Capita: $0.26
Conclusions

• None of the 4 LHDs met CDC-recommended annual *per capita* allocation of $2.64-$3.29 for NJ State and Community Tobacco Interventions

• Our data demonstrate insufficient resources for LHDs to confront the leading cause of morbidity and mortality
Limitations

- LHDs do not maintain labor data in the component-based format used by SASCAP™
- Time intensive data collection
- While LHD staff were supportive and enthusiastic, LHDs lack time resources to participate easily in public health services and systems research
- Possible measurement error due to the retrospective and self-report design
- Our data do not include non-governmental tobacco control efforts, e.g., partner activities
Implications for Public Health Policy and Practice

• These data can be used to advocate for additional resources where the CDC-recommended per capita funding for tobacco control is not met.

• Adds to public health knowledge of mechanisms through which costs, information, and labor produce health promotion and protection services, programs, and policies.

• Elucidation of true costs of local tobacco control is needed to attain the goal of delivering foundational public health services at the community level.
Next Steps

• Conclude data analysis

• Share findings with PBRN partners

• Prepare manuscript for publication
Acknowledgements

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• NJ PH PBRN DACS Co-Investigators:
  – Pauline Thomas (PI), Rutgers New Jersey Medical School
  – Susan German, Rutgers New Jersey Medical School
  – Anushua Sinha, Rutgers New Jersey Medical School
  – Natalie Pawlenko, New Jersey Department of Health
  – Kevin Sumner, Local Health Department
  – Nancy Raymond, Local Health Department
  – Judith Migliaccio, Local Health Department
  – Koren Norwood, Local Health Department
  – Paschal Nwako, Local Health Department

