Insurance Coverage and Asthma: Relationship to Disease Management Outcomes

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“Millions of Americans do not have health insurance coverage. Persons with chronic diseases are especially at risk of bad outcomes.”

Introduction: Burden of Asthma in the U.S.

- Lifetime Prevalence: 12.5%
- Current Prevalence: 7.9%
- ED Visits: 7.8%
- Hospitalizations: 170 per 100,000 pop.
- Mortality: 13.0 per million pop.
- Annual Healthcare Cost: $16.1 billion
  (direct ~$11.5 billion, indirect ~$4.6 billion)
Study Objective

To examine the patterns of emergency/urgent care and asthma medication and inhaler usage among adults with asthma, with Medicaid, private or employer-provided insurance or no health insurance coverage.
Methods

► **Source of data:** 2006 North Carolina Behavioral Risk Factor Surveillance System data for adults 18-64 years of age with asthma (lifetime, n=1,089; current, n=694)
  - State-added insurance question: respondent’s associated insurance coverage – private, employer-provided, uninsured

► **Variables of interest:**
  - Asthma episodes, inhaler use, asthma medication use, emergency department (ED) visits, urgent care visits
Methods (Cont.)

Analysis
- Bivariate and multiple logistic regression performed to determine predictors of ED/urgent care usage, use of prescription asthma medications, and use of asthma inhalers
- Control for obesity, race, gender, age, and educational level
# Results: Study Sample

<table>
<thead>
<tr>
<th>Insurance Coverage</th>
<th>Lifetime Asthma</th>
<th>Current Asthma</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes n=1089</td>
<td>No n=9050</td>
</tr>
<tr>
<td>Medicaid</td>
<td>25.4%</td>
<td>74.6%</td>
</tr>
<tr>
<td>Private or Employer-provided</td>
<td>9.1</td>
<td>90.9</td>
</tr>
<tr>
<td>None</td>
<td>12.4</td>
<td>87.6</td>
</tr>
<tr>
<td></td>
<td>Yes n=694</td>
<td>No n=383</td>
</tr>
<tr>
<td>Medicaid</td>
<td>86.1%</td>
<td>13.9%</td>
</tr>
<tr>
<td>Private or Employer-provided</td>
<td>58.9</td>
<td>41.1</td>
</tr>
<tr>
<td>None</td>
<td>52.9</td>
<td>47.1</td>
</tr>
</tbody>
</table>
Insurance Coverage (Medicaid vs. Private) and Asthma-related Outcomes*

<table>
<thead>
<tr>
<th></th>
<th>No. of Observations</th>
<th>OR Estimate</th>
<th>95% CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma Episodes</td>
<td>646</td>
<td>1.63</td>
<td>0.84 - 3.10</td>
<td>.151</td>
</tr>
<tr>
<td>Asthma Inhaler Use</td>
<td>634</td>
<td>3.73</td>
<td>1.84 - 7.57</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Rx Asthma Medication Use</td>
<td>642</td>
<td>2.48</td>
<td>1.13 - 5.46</td>
<td>.024</td>
</tr>
<tr>
<td>Emergency Dept. Visit</td>
<td>649</td>
<td>2.79</td>
<td>1.42 - 5.50</td>
<td>.003</td>
</tr>
<tr>
<td>Urgency Care Treatment</td>
<td>641</td>
<td>1.14</td>
<td>0.60 - 2.17</td>
<td>.682</td>
</tr>
</tbody>
</table>

*Results part of logistic regression analyses using Medicaid and No Insurance as independent variables (with Private Insurance as the reference) and controlling for obesity, race, gender, age, and educational level; comparison of no insurance vs. private insurance showed no significant relationships for any of the five asthma-related outcomes.
Results: Summary

- Persons with asthma who had Medicaid coverage had significantly greater use of:
  - Prescription asthma medications
  - Asthma inhalers
  - Emergency departments

than those with private insurance or no insurance, even after controlling for obesity, race, gender, age, and low educational level.
Results: Summary (Cont.)

► No significant differences were found between the three insurance coverage types for:
  - Asthma episodes
  - Urgent care treatment by healthcare provider
Discussion

- Supports other studies of (Davidson et al., 1994; Finkelstein et al., 2000)
- Adds other adult asthma management behaviors
- Need to examine other factors (e.g., disease severity, gaps in insurance coverage – Markovitz & Andreson, 2006)
Conclusions

► Asthmatics with public medical insurance (Medicaid) coverage exhibit greater use of medications, inhalers, and emergency departments

► BRFSS data are useful for exploring healthcare access issues among persons with asthma

► BRFSS call-back surveys will allow for the addition of more specific questions about insurance coverage and disease severity
Acknowledgments

► 2005 BRFSS, CDC
► National Hospital Ambulatory Medical Care Survey, 2001-2003
► National Hospital Discharge Survey, 2004
► 2005 preliminary mortality statistics, CDC, NCHS
► State Center for Health Statistics, Division of Public Health, N.C. Department of Health & Human Services

The authors dedicate this presentation in memory of Janet Reaves.
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