Improving Smoking Cessation Interventions for Children Admitted with Bronchiolitis: The AAP Value in Inpatient Pediatrics Bronchiolitis Network Collaborative Experience

Susan Walley, MD1 and ShawnRalston, MD2
1University of Alabama at Birmingham, Birmingham, AL. Department of Pediatrics; 2Dartmouth College, Lebanon NH.

Background

• Acute viral bronchiolitis is one of the most common reasons for pediatric hospitalization.
• Secondhand smoke (SHS) exposure increases the risk for and severity of bronchiolitis.
• Limited studies on implementing inpatient SHS exposure screening and smoking cessation interventions for parents/caretakers of children with SHS exposure

Specific Aims

• Achieve 90% compliance screening children for SHS exposure
• Achieve 90% compliance providing smoking cessation interventions for parents and caretakers of children with a positive screen for SHS exposure

Methods

Setting and Sample:
• The Value in Inpatient Pediatrics (VIP) Quality Collaborative for Improving Hospitalist Compliance with the AAP Bronchiolitis Guideline (B-QIP) was created in 2012 to improve the care of children hospitalized with bronchiolitis
• A multispecialty expert group met at the beginning of the collaborative to establish criteria for participation, measures and interventions

Study Design:
• Prospective quality improvement interventional study
• Voluntary collaborative
• In each data cycle, a sample 20 charts were reviewed by each hospital team
• Pre-intervention data was collected for Jan-March 2013 (Data cycle 1-3)
• Post-intervention data was collected for Jan-March 2014 (Data cycle 4-6)

Interventions:
• Hospitals received an evidence-based best practice toolkit on screening for SHS exposure and smoking cessation counseling and interventions
• Participation in monthly webinars
• QI expert mentor assigned to each site
• Hospitals received real time run charts comparing site performance to group mean

Data Analysis:
• Descriptive analysis was performed from survey data on hospital sites
• Aggregate data pre and post-intervention compared using chi-square analysis
• Analysis of Means was used to compare individual cycle mean to the overall group mean

Site Characteristics

• Hospitals had at least 50 bronchiolitis admissions yearly
• Community-based hospitals with limited quality improvement infrastructure favored in selection process
• 22 hospitals participated and 1 hospital withdrew prior to intervention period
• 12 community hospitals and 10 university hospitals
• Each hospital formed a multi-disciplinary team with at least one pediatrician, nurse and respiratory therapist

Results

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-Intervention</th>
<th>Post-Intervention</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHS Brochure Screening</td>
<td>0%</td>
<td>10%</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Figure 1: Mean difference in SHS exposure screening pre and post intervention. All site mean difference 11.4% (p<.02).

Limitations

• Study measures reflect documentation rather than actual practice
• Small number of data points limited analysis of trends
• Unable to control for clustering at the institutional level through use of Analysis of Means
• Interventions were self-selected, thus we were unable to prospectively measure the effect of specific interventions at each site

Conclusions

• Implementation of systematic SHS exposure screening and smoking cessation interventions is practical in the inpatient setting through a QI collaborative
• Inpatient QI collaborative networks have a role in tobacco control
• QI collaboratives can increase inpatient SHS exposure screening and smoking cessation interventions

Acknowledgements

• This study was supported by the Value in Inpatient Pediatrics Network of the AAP Quality Improvement Innovations Networks (QUIN).
• The authors would like to thank the participating 21 sites for their work in this collaborative.
• The AAP Julius B. Richmond Center of Excellence for smoking cessation resources.