Social Determinants of Participation in a Home Visitation Fluoride Varnish Program

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MISSION STATEMENT

To promote the health of medically under-served children within the greater Roanoke Valley by ensuring comprehensive health care, strengthening families, and coordinating community resources in a public/private partnership.
CHIP of Roanoke Valley

• Home Visiting Program
• Serves children ages birth to kindergarten-entry (or age 6)* and pregnant moms
• Based on a preventive medical model
Health Care Coordination

Nurses...
- Help families establish a medical and dental home
- Stay up-to-date with well-child visits and immunizations
- Provide asthma case management
- Assist with medical needs and understanding treatment recommendations
- Provide in-home application of fluoride varnish
- Refer for early intervention screenings and services
- Provide support to families of children with chronic conditions
Family Strengthening & Support Services

Family Case Managers…

- Parenting skills
- Assists in developing parenting skills using the evidence based Parents as Teachers curriculum (PAT)
- Provide age-appropriate child development assessments and referrals
- Build Kindergarten readiness skills
- Promotes self-sufficiency through family goal setting, support and referrals
Begin with a Grin Program

Provides:

- In-home oral health education for children and caregivers
- Fluoride varnish applications and dental care coordination
- Nurse and Family Case Manager
Dental Fairs

- CHIP of Roanoke Valley has offered twice yearly, Dental Fairs for the to further promote oral health and opportunity for a research exam.
- Strategies are used to help desensitize child participants to dental exams and varnish applications.
VCU Support & Research

• The dental fairs are supported by VCU pediatric dentists
• Calibrated oral exams completed by pediatric dentists
• Data analyzed for efficacy
Study Purpose

• To examine and identify what social determinants predict which Child Health Investment Partnership (CHIP) children participated in the *Begin with a Grin* program (BwaG).

• The comparison of dental disease for a subset of CHIP children that received a dental exam.
BwaG Home Visit

• Pediatric nurse practitioners provide:
  – Oral health anticipatory guidance
  – Fluoride Varnish application
  – dental care coordination with a dentist
Data thus far

- Retrospective cohort study

- Children (n=2,425) enrolled in CHIP of Roanoke Valley.

- 6-year period (September 2008-September 2014).
• 57% of CHIP enrollees were BwaG participants
• Children who enrolled at an earlier age were more likely to participate in BwaG.
• BwaG children averaged 2.7 varnish treatments over enrollment with average of 1.2 per year

<table>
<thead>
<tr>
<th>Factor</th>
<th>BWAG Participant</th>
<th>CHIP Only</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at Enrollment (Mean, SD)</td>
<td>0.7, 0.95</td>
<td>1.38, 1.61</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Months Enrolled (Mean, SD)</td>
<td>35.07, 21.4</td>
<td>9.05, 9.2</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Hispanic participants were 3 times more likely to participate in BwaG.

<table>
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</thead>
<tbody>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>African American</td>
<td>40%</td>
<td>42%</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>14%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>34%</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>12%</td>
<td>15%</td>
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</tbody>
</table>
Caries Experience

- Caries experience of 19% for children who received a dental exam.

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<thead>
<tr>
<th></th>
<th>Percent</th>
<th>Standard error</th>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>36.7</td>
<td>1.8</td>
</tr>
<tr>
<td>2–5 years</td>
<td>22.7</td>
<td>2.1</td>
</tr>
<tr>
<td>6–8 years</td>
<td>55.7</td>
<td>2.4</td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>30.5</td>
<td>2.3</td>
</tr>
<tr>
<td>Non-Hispanic black</td>
<td>43.6</td>
<td>2.8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>45.7</td>
<td>2.9</td>
</tr>
<tr>
<td>Non-Hispanic Asian</td>
<td>35.9</td>
<td>3.4</td>
</tr>
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</table>
# Dental Visits

<table>
<thead>
<tr>
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<th>CHIP Only</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Dentist Visits (Mean, SD)</td>
<td>0.92, 1.42</td>
<td>0.22, 0.71</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Average Dentist Visits Per Year (Mean, SD)</td>
<td>0.28, 0.86</td>
<td>0.19, 0.65</td>
<td>0.0070</td>
</tr>
<tr>
<td>At least 1 Dentist Visit Per Year (%)</td>
<td>43%</td>
<td>13%</td>
<td>&lt;0.0001</td>
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</tbody>
</table>
Claims Data

- When CHIP children were compared with Medicaid-only children, the CHIP child was 3 times more likely to have at least 1 dental visit (odds ratio: 3.0 (1.9–4.7).
- *Pediatrics* 2013;132:S147–S152
Conclusions

• By focusing on enrolling children at earlier ages, there is the potential to increase the use of dental care to match the recommended periodicity of dental care for young children.

• The home visiting model is an effective way to allow “equal footing” for a low income, high risk population.
Acknowledgements

- Principal Investigator
  - Dr. Tegwyn Brickhouse
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  - Dr. Ethan Puryear
  - Dr. Shillpa Naavaal
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  - Dr. Caroline Carrico
- CHIP of Roanoke Valley
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