EVALUATION OF A VIRTUAL SHARED DECISION MAKING PROGRAM FOR PEDIATRIC ASTHMA MANAGEMENT USING A VIRTUAL HEALTH COACH

Madelyn Welch, BA | Naomie Shembo | Kelly Reeves, BSN, RN | Lindsay Shade, PA-C | Jing Zhao, PhD | Andrew McWilliams, MD, MPH | Stacy Reynolds, MD
Andrew Gunter, MD | Cheryl Courtland, MD | Hazel Tapp, PhD

BACKGROUND
• Pediatric asthma is one of the most common chronic conditions in the US with over 10 million children currently diagnosed
• Knowledge gaps lead to problems with medication adherence, leading to poor outcomes
• Two million emergency department (ED) visits a year are attributed to pediatric asthma yet there are currently no reported uses of shared decision making (SDM) for asthma in the ED
• SDM decision aids empower patient-provider collaboration in the treatment plan

OBJECTIVES OF CAROLINAS ASTHMA COACH
• We piloted and evaluated a virtual SDM health solution, originally designed for ambulatory use, Carolinas Asthma Coach in the pediatric ED of a large healthcare system
• The virtual coach engages patients and caregivers through a user-friendly interface that facilitates SDM
• The pilot study evaluated usability, feasibility, and efficacy of the virtual SDM coach

METHODS
• Patients and caregivers recruited in ED and ambulatory care settings
• Participants given a knowledge test pre- and post- using Carolinas Asthma Coach
• Perception of SDM collected at the end of the appointment or encounter

KNOWLEDGE ASSESSMENT
• Eleven question survey given before and after using asthma coach
• Questions about general asthma knowledge, inhaler technique, symptom recognition, trigger identification, and medication types
• Nine multiple choice and two free response questions

KNOWLEDGE ASSESSMENT RESULTS
• In both settings, caregivers’ post-knowledge test scores (82% in ED, 84% in ambulatory) were higher than the patients’ post-knowledge test scores (76% in ED, 81% in ambulatory)
• In both settings, patients’ scores increased from pre- to post-knowledge test by greater amounts than caregivers’ scores increased

Knowledge Assessment Scores

<table>
<thead>
<tr>
<th></th>
<th>Emergency Department</th>
<th>Ambulatory Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients n=21</td>
<td>Caregivers n=21</td>
<td>Patients n=10</td>
</tr>
<tr>
<td>Pre-Test Average</td>
<td>51%</td>
<td>67%</td>
</tr>
<tr>
<td>Post-Test Average</td>
<td>76%</td>
<td>82%</td>
</tr>
<tr>
<td>Average Increase</td>
<td>25%</td>
<td>15%</td>
</tr>
<tr>
<td>p-value</td>
<td>&lt;0.001</td>
<td>=0.01</td>
</tr>
</tbody>
</table>

SHARED DECISION MAKING RESULTS
• In the ambulatory setting, 80% (8 of 10) of participants perceived having participated equally in their care decision
• In the ED setting, 55% (11 of 20) perceived having participated equally in their care decision

Who Made The Decision In Your Meeting With The Care Team (Health Coach And Provider) About What Your Asthma Treatment Would Be?

- The care team alone made the decision
- The care team mostly made the decision and played a small role in the decision-making
- The care team and I participated equally in making the decision
- I mostly made the decision, and the care team played a small role in the decision-making
- I alone made the decision

CONCLUSIONS
• The virtual SDM coach was successfully piloted and evaluated in both ambulatory and acute care settings, demonstrating potential for use in improving outcomes for asthma patients.

ACKNOWLEDGEMENTS
• Holly Church, Dr. Andrew Walker, GH Cannon Summer Scholars Program
• Department of Family Medicine Research
• Carolina HealthCare System
• The patients and their caregivers
• Covaxx Pediatrics, Elizabeth Family Medicine, Levine Children’s Hospital Emergency Department; Myers Park Pediatrics, University Pediatrics
• Research reported in this publication was funded through a Patient-Centered Outcomes Research Institute Award (CD-12-11-4276). The opinions in this publication are solely the responsibility of the authors and do not necessarily "represent the views of PCORI, its Board of Governors, or Methodology Committee"