IMPROVING ASTHMA SELF-MANAGEMENT IN PEDIATRICS
USING A SIMPLIFIED WRITTEN ASTHMA ACTION PLAN

BACKGROUND: ASTHMA

- #1 chronic disease of childhood
- 7 million children are affected in the US
- Approximately 9% of children in South Carolina have a diagnosis of asthma
- Leading cause of disability in children < 18 years of age
BACKGROUND: SIGNIFICANCE

• Uncontrolled asthma can lead to:
  • Increased symptoms
  • Activity limitations
  • Permanent airway remodeling
  • Increased unscheduled provider visits and hospitalizations
  • Missed school days
  • Morbidity and Mortality
  • Economic burden

BACKGROUND: MANAGEMENT

• Medication
• Trigger or risk factor reduction
• Asthma self-management:
  • Self monitoring of symptoms
  • Regular review with a health care provider
  • Written asthma action plan (WAAP)

• Reduced unscheduled health care visits
• Improved asthma control
BACKGROUND: WAAP

Written asthma action plan (WAAP):
• An individualized asthma care plan
• The gold standard tool for asthma self-management
• Incorporates:
  • Daily asthma management instructions
  • Lists daily and rescue medications
  • How to recognize and treat worsening asthma
  • Identifies triggers for exacerbations
• Nationally: possession 50.7%
• South Carolina’s QTIP: possession 60% (2018)

BACKGROUND: LOCAL PROBLEM

At the project site:
• 46% of patients, with asthma, had an asthma exacerbation in the past year
• Patient WAAP ownership is 63%; (below benchmark of 100%)

The existing WAAP is:
• Poorly formatted
• Difficult to comprehend
• Written above the 5th grade reading level; standard for written health material
BACKGROUND: TARGET POPULATION

Asthmatic Patients:
• 77% are racial and ethnic minorities
• 41% speak Spanish as a primary language

General Population:
• 69% are Medicaid, Medicaid subsidiary, uninsured, or self pay

BACKGROUND: LITERATURE REVIEW

Simplified WAAPs can:
• Foster self-efficacy in managing one’s asthma care
• Increase parental comprehension of asthma management
• Improve information retention
• Prevent asthma exacerbations
• Reduce unscheduled healthcare visits
• Lessen morbidity related to asthma
• Improve provider and caregiver acceptability of the tool
• Facilitate thoughtful provider counseling
  • (Duncan et al., 2018; Gillette et al., 2018; Lakupoch et al., 2018; Yin et al., 2017; Yin et al., 2016)
PURPOSE & CLINICAL QUESTION

Purpose:
- To decrease asthma exacerbations, improve patients' asthma control, and to increase patient possession and use of the WAAP.

Clinical question:
- Will the implementation of evidenced based multifactorial interventions, including a simplified WAAP, at a pediatric primary care office, decrease the incidence of asthma exacerbations and improve patients' overall asthma control?

METHODS

- Setting: Pediatric Primary Care Office, Southeast US, Urban location
- Staff: 2 Pediatricians, 1 FNP
- Population: Patients aged 5-18, Diagnosis of asthma
- Data Collection: EMR chart audits, Asthma Control Test scores, Pre and Post intervention surveys
  - Retrospective: October - December, 2018; n=82
  - Pre-QI: February - May, 2019; n=76
  - Post-QI: March - July, 2019; n=44
    - Post-QI: July 2019 - January 2020; n= 54
INTERVENTION

- Created a new WAAP using:
  - Evidenced based guidelines
  - Revision and simplification of the current WAAP (PACNJ)
  - Provider preference
- Increased the applicability of the new WAAP, for the patient population
  - Racial and ethnic minorities
- Conducted a provider and staff educational in-service
- Provided the simplified WAAP to patients
- Changed the administrative process

FIGURE 1

Asthma Exacerbations by Chart Review

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exacerbation by ICD code</td>
<td>21</td>
<td>12</td>
</tr>
<tr>
<td>Emergent visit or hospitalization</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>
FIGURE 2

Patient Survey Results

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAAP Possession</td>
<td>67</td>
<td>80</td>
</tr>
<tr>
<td>WAAP Use</td>
<td>45</td>
<td>61</td>
</tr>
<tr>
<td>Unscheduled</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>provider visits or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>emergent visits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rescue inhaler use</td>
<td>32</td>
<td>20</td>
</tr>
</tbody>
</table>

FIGURE 3

Provider Documentation by Chart Review

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAAP provided or</td>
<td>39</td>
<td>71</td>
</tr>
<tr>
<td>reviewed with patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Updated WAAP scanned</td>
<td>42</td>
<td>73</td>
</tr>
<tr>
<td>in chart</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CONCLUSIONS: SUMMARY

The implementation of a simplified WAAP, at a pediatric primary care office:
- Decreased the incidence of asthma exacerbations
- Improved patients’ overall asthma control
CONCLUSIONS: STRENGTHS

- Provider and staff buy-in
- Ease of integrating WAAP into practice
- Low literacy, child friendly, bilingual tool
- Sustainability of intervention

CONCLUSIONS: LIMITATIONS

- Limited project time frame
- Inadequate post-intervention patient follow-up
- Results based on subjective or self-reported responses
- Lacks generalizability
- Small sample size
CONCLUSIONS: FUTURE RECOMMENDATIONS

- Longer project time frame
- Implement additional appointment reminder systems
- Monitor medication adherence
- Conduct in-service for patients and caregivers to introduce the new WAAP

IMPLICATIONS FOR PRACTICE

Low literacy, population specific, evidenced based written asthma action plans should be implemented in all pediatric primary care offices to:
- Improve patients' asthma control
- Decrease asthma related morbidity
- Reduce associated healthcare costs
QUESTIONS?

Please feel free to email me at:
Gabriellelamarante@gmail.com