A Health Belief Model-Based Childhood Immunization Intervention Within a Managed Care Organization

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Outline

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Intervention Objective

Increase immunization rates among children less than six years of age enrolled in BadgerCare Plus at Physicians Plus Insurance Corporation by developing conceptually (Health Belief Model) -based reminders.
Background Information

Immunizations

- Only 83% of Wisconsin children are fully immunized
- Immunization protects against morbidity, mortality, and provides herd immunity

The Health Belief Model

- Contains constructs that predict why people will take action to prevent, screen for, or control illness
Health Belief Model Constructs

- Perceived risk of disease
- Perceived severity of disease
- Perceived benefits of immunization
- Perceived barriers to immunization
- Cues to action
- Self-efficacy or the ability to take action
Project Methods

Reminder letters & telephonic scripts were modified to include this language:

*It is also important that your baby starts his or her immunization (shots) schedule as soon as possible. Diseases like measles, polio, and whooping cough still exist today and could make your baby sick. You can protect your baby by talking to your doctor about shots. Shots are safe and work well. Side effects are rare. Immunizations can be given at your baby’s HealthCheck exams. If you need help choosing a doctor, call Member Services at (800) 454-5015, Monday–Friday, 8 a.m. –5:00 p.m., or visit www.pplusic.com.*
“Diseases like measles, polio, and whooping cough still exist today and could make your baby sick.”
Perceived susceptibility of disease
Perceived severity of disease

“You can protect your baby by talking to your doctor about shots”
Perceived benefits of immunization
Self-efficacy

“Shots are safe and work well”
Perceived benefits of immunization
Perceived barriers to immunization

“Side effects are rare.”
Perceived benefits of immunization
Perceived barriers to immunization

“Immunizations can be given at your baby’s HealthCheck exams”
Cues to action

“If you need help choosing a doctor, call…”
Cues to action
Self-efficacy
Project Methods

• Modified letters & telephonic scripts sent to parents/guardians of children “due” or “past due” for a Health Check exam

• Evaluation measure: completion of Combo 2 immunization series
  • Combo 2 series: 4 doses of DPT (diphtheria, pertussis, and tetanus), 3 doses of IPV (polio), 1 dose of MMR (measles, mumps, and rubella), 3 doses of HiB (*Haemophilus influenzae* type B), 3 doses of HepB (hepatitis B), and 1 dose of VZV (varicella zoster virus).
## Results

### Cohort 1: Children “due” for Health Check exam (p-value = 0.002)

<table>
<thead>
<tr>
<th></th>
<th>Total # Children</th>
<th>Total # Combo 2 Compliant</th>
<th>Combo 2 Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-</td>
<td>316</td>
<td>65</td>
<td>20.6%</td>
</tr>
<tr>
<td>Post-</td>
<td>316</td>
<td>100</td>
<td>31.6%</td>
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</tbody>
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### Cohort 2: Children “over due” for Health Check exam (p-value = 0.676)

<table>
<thead>
<tr>
<th></th>
<th>Total # Children</th>
<th>Total # Combo 2 Compliant</th>
<th>Combo 2 Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-</td>
<td>721</td>
<td>593</td>
<td>82.2%</td>
</tr>
<tr>
<td>Post-</td>
<td>721</td>
<td>599</td>
<td>83.1%</td>
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</table>
Discussion

• Difference between Cohort 1 and Cohort 2

  – Likely a reason for the pre-intervention non-compliance

  – If barriers to immunization existed before the intervention, most likely they were not the ones addressed in the message (HealthCheck Exam, help choosing a doctor)
Discussion

• **Intervention Strengths**
  – Inexpensive
  – Complex behavior made understandable
  – Able to target specific individuals
  – Results supported by published literature

• **Intervention Weaknesses**
  – No control group
  – Cultural / language barriers may exist
  – Health Belief Model is cognitive and does NOT address emotion, environment, or social norms
Conclusion

• The constructs of the Health Belief Model have shortcomings, but have demonstrated success when applied to immunization interventions

• Research within a managed care organization has challenges

• Constructs of the Health Belief Model could be applied to other preventive services reminders
Thank You

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- Laura Reissmann