Impact of a Pediatric Value Curriculum on Resident Knowledge, Attitudes, and Behavior

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• This presentation will not involve discussion of unapproved or off-label experimental or investigational use
Background

\[ \text{Value} = \frac{\text{Outcomes} + \text{Patient Experience}}{\text{Cost and Inputs}} \]
High-Value Care (HVC) Curricula

- 0% have a formal HVC curriculum
- 100% need a formal HVC curriculum
- 100% would use a curriculum if available
High-Value Pediatrics

Core Didactics

Healthcare Value
Healthcare Costs
Balancing Benefits and Cost
High-Value Diagnosis
High-Value Pediatrics

Core Didactics
- Healthcare Value
- Healthcare Costs
- Balancing Benefits, Harms & Cost
- High-Value Diagnosis

Monthly HVC Morning Report

Children's Hospital of Philadelphia
Cincinnati Children’s
changing the outcome together
High-Value Pediatrics

<table>
<thead>
<tr>
<th>Test</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Ray: Chest</td>
<td>$53</td>
</tr>
<tr>
<td>Transthoracic Echocardiogram (TTE)</td>
<td>$435</td>
</tr>
<tr>
<td>Complete Blood Count (CBC) with Differential</td>
<td>$20</td>
</tr>
<tr>
<td>C-Reactive Protein (CRP), High Sensitivity</td>
<td>$33</td>
</tr>
<tr>
<td>Sedimentation Rate</td>
<td>$7</td>
</tr>
<tr>
<td>Urinalysis</td>
<td>$6</td>
</tr>
<tr>
<td>Comprehensive Metabolic Panel</td>
<td>$27</td>
</tr>
</tbody>
</table>

www.pedsvalue.com

www.pedsvalue.com
High-Value Pediatrics

Core Didactics
- Healthcare Value
- Healthcare Costs
- Balancing Benefits, Harms & Cost
- High-Value Diagnosis

Monthly HVC Morning Report
- Using $1000 Work-up Cost Calculator

Value-focused QI projects

www.pedsvalue.com
Study Aim

• To evaluate the impact of High-Value Pediatrics on pediatric resident knowledge, attitudes, and behaviors
Methods

- Pediatric residents at CHOP and CCHMC exposed to curriculum in 2016-17 academic year

- Linked pre/post-curriculum anonymous survey
  - Based on previously published survey tool
  - Evaluated knowledge and attitude change

- Post-curriculum focus groups
  - Explored impact on resident attitudes, behaviors, and practice
Methods – Data analysis

• Quantitative:
  – Descriptive statistics
  – Paired t-tests and Wilcoxon rank sum tests

• Qualitative:
  – Thematic analysis using grounded theory approach with inductive and deductive analysis
Results - Participation

• 291 residents exposed to curriculum
  – 50 residents (17.2%) were exposed to both the curriculum and a value-based QI project
  – 80 residents (27.5%) responded to both pre- and post-survey

• 3 post-curriculum focus groups (11 residents)
Results – Surveys (Knowledge)

<table>
<thead>
<tr>
<th>Likert Scale</th>
<th>CCHMC Cost</th>
<th>CHOP Cost</th>
<th>CCHMC Charges</th>
<th>CHOP Charges</th>
<th>CCHMC Reimbursement</th>
<th>CHOP Reimbursement</th>
<th>CCHMC Value</th>
<th>CHOP Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Survey</td>
<td>3.7</td>
<td>3.2</td>
<td>4</td>
<td>3.5</td>
<td>3.8</td>
<td>3.5</td>
<td>3.7</td>
<td>3.2</td>
</tr>
<tr>
<td>Post Survey</td>
<td>2.9</td>
<td>2.8</td>
<td>3.1</td>
<td>3.1</td>
<td>3.4</td>
<td>3.1</td>
<td>2.7</td>
<td>2.6</td>
</tr>
</tbody>
</table>

*p ≤ 0.003
Results – Focus Groups

Theme 1: Curriculum contribution to understanding of HVC

“The value of the curriculum is just starting the conversation or making it something to think about or be aware of. Because I think there’s so many nuances . . . cost, medications, and things like that. So, just helping us know some of those things and setting the conversation.”
Results – Focus Groups

Theme 2: How HVC affects individual practice

“And I found myself ordering less and different kinds of lab tests on a lot of patients . . . before the curriculum I would have practiced differently.”

“I think it forces us to be better clinicians, because it forces us to think about what we’re doing and why we’re doing it, what information it’s going to give us and whether or not it’s actually going to give us any information that we would act on.”
Limitations

• Curriculum instituted at academic institutions with similar residency program characteristics

• Selection bias for survey completion/focus group participation

• Surveys assess self-reported knowledge and practice change
Conclusions

• Participation in the High-Value Pediatrics curriculum improved self-perceived knowledge of healthcare costs, charges, reimbursement, and overall understanding of healthcare value

• Focus groups demonstrated potential clinical practice changes as a result of curriculum participation
Acknowledgements

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Residents who participated in surveys and focus groups

Questions?

For more information on High-Value Pediatrics: www.pedsvalue.com
References


## Results – Surveys (Attitudes)

<table>
<thead>
<tr>
<th>CCHMC</th>
<th>CHOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost to society is important in my decisions to use or not use an intervention.</td>
<td>Physicians should adhere to clinical guidelines that discourage the use of interventions that have small proven advantage over standard interventions but cost more.</td>
</tr>
<tr>
<td>I am aware of the costs of the tests or treatments I recommend.</td>
<td></td>
</tr>
<tr>
<td>Decision support tools that show costs would be helpful in my practice.</td>
<td></td>
</tr>
</tbody>
</table>
Curriculum Survey Questions

Cost-Value Perceptions:

• How would you rate your understanding of healthcare COSTS?
• How would you rate your understanding of healthcare CHARGES?
• How would you rate your understanding of healthcare REIMBURSEMENT?
• How would you rate your understanding of healthcare VALUE?
Curriculum Survey Questions

Self-reported Attitudes:

• It is unfair to ask clinicians to be cost-conscious and still keep the welfare of their patients foremost in their minds.
• There is currently too much emphasis on costs and procedures.
• Trying to contain costs is the responsibility of every ordering clinician.
• Cost to society is important in my decisions to use or not to use an intervention.
Curriculum Survey Questions

Self-reported Attitudes (continued):
• Physicians should adhere to clinical guidelines that discourage the use of interventions that have a small proven advantage over standard interventions but cost more.
• I am aware of the costs of the tests/treatments that I recommend.
• Decision support tools that show costs would be helpful in my practice.