Preparing for an Antibiotic Stewardship Intervention through Surveys of Knowledge and Safety
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Introduction

• Decreasing unnecessary urine cultures can reduce unnecessary antibiotic treatment of asymptomatic bacteriuria (ASB).
• Nurses (RN) and clinical nurse assistants (CNA) play important roles in requesting urine cultures.
• To prepare for an intervention, we assessed knowledge of the appropriate indications for urine culture among providers, RNs, and CNAs, while measuring their teamwork and safety climate.

Methods

• Surveys were administered to 256 providers, 200 RNs, and 78 CNAs in four VA facilities across the nation.
• RN and CNA were surveyed on knowledge of ASB and the Safety Attitudes Questionnaire (SAQ).
• Providers completed an additional survey which assessed 6 cognitive-behavioral constructs.

Safety Attitudes Questionnaire Examples

• Teamwork culture - "Nurse input is well received in this clinical area."
• Safety culture - "I would feel safe being treated here as a patient."

Behavioral Construct Survey Examples

• Self-efficacy - "I feel confident that I know how to manage…" 
• Behavior - "I usually order a urine culture when…"
• Social Norms - "My supervising physician prefers to treat…"
• Risk Perception - "A change in urine odor should prompt a culture"
• Acceptance of Practice Guidelines - "Guidelines are good tools"
• Knowledge Scores - "Of these patients with asymptomatic bacteriuria, who should be treated with antibiotics…"

Results

Table 1. Inter-professional comparison of SAQ (Safety Attitudes Questionnaire) scores: Professional role predicted scores on both teamwork and safety, with doctors scoring lowest in both domains

<table>
<thead>
<tr>
<th>Domain</th>
<th>Mean (standard deviation)</th>
<th>Pearson correlation with teamwork climate score (n=256)</th>
<th>Pearson correlation with safety culture score (n=256)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teamwork climate</td>
<td>CNA (n=79)</td>
<td>Nurses (n=198)</td>
<td>Providers (n=255)</td>
</tr>
<tr>
<td>Safety culture</td>
<td>76.3 (18.1)</td>
<td>70.7 (16.5)</td>
<td>67.2 (12.7)</td>
</tr>
</tbody>
</table>

Table 2. Providers’ cognitive behavioral constructs and knowledge scores correlated with teamwork and safety culture scores.  Example: Knowledge scores correlated significantly with safety culture scores.

Figure 1: Organism type drives inappropriate treatment

Figure 2: Urine Culture Triggers for Clinical Nurse Assistants and Nurses

Which of the following signs and symptoms mean that you should send a urine culture?

<table>
<thead>
<tr>
<th>Change in urine color</th>
<th>Temperature of 101F</th>
<th>Foul smelling urine</th>
<th>Cloudy urine</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNA</td>
<td>RN</td>
<td>CNA</td>
<td>RN</td>
</tr>
<tr>
<td>0%</td>
<td>20%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>92%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Poster #1892

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