TO: All Medical Staff

FROM: Elizabeth Hermsen, Pharm.D., M.B.A., BCPS-ID, Mark Rupp, M.D., and Trevor VanSchooneveld, M.D.

DATE: 08/03/09

RE: Clostridium difficile testing

The Microbiology Laboratory has implemented a new test for C. difficile as of July 14, 2009. This new test includes simultaneous testing for both glutamate dehydrogenase (GDH) antigen and toxins A & B. GDH is produced by both toxigenic and non-toxigenic C. difficile. The primary clinical advantage of this test is the high sensitivity of the GDH assay. Thus, if the GDH test is negative, the patient should be considered negative for C. difficile, and no repeat testing is required barring the exception listed below (see table).

<table>
<thead>
<tr>
<th>GDH Result</th>
<th>Toxin Assay Result</th>
<th>Interpretation</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>Negative</td>
<td>Not infected</td>
<td>No further action.</td>
</tr>
<tr>
<td>Positive</td>
<td>Positive</td>
<td>Infected with toxigenic C. difficile</td>
<td>Isolate patient and begin therapy according to management algorithm.</td>
</tr>
<tr>
<td>Positive</td>
<td>Negative</td>
<td>Non-toxigenic C. difficile or false-negative toxin assay</td>
<td>Isolate the patient. Due to history of low sensitivity of toxin assay and until further performance characteristics of this new test are available, recommend repeat test x 1.</td>
</tr>
<tr>
<td>Negative</td>
<td>Positive</td>
<td>Indeterminate</td>
<td>Repeat test x 1.</td>
</tr>
</tbody>
</table>

The treatment recommendations for C. difficile infection can be found at www.nebraskamed.com/asp under Clinical Pathways. Please feel free to contact us with any questions.

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