A new host-response assay (ImmuNoXpert™) that integrates the levels of three proteins (TRAIL, IP-10, and CRP) was shown to exhibit high performance in distinguishing between bacterial and viral disease in two double-blind validation studies.

**Background**

<table>
<thead>
<tr>
<th>Name</th>
<th>Curiosity</th>
<th>Pathfinder</th>
<th>Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target population</td>
<td>Adults &amp; pediatric with acute infection</td>
<td>Pediatric with acute infection</td>
<td>Pediatric with FWS or RTI</td>
</tr>
<tr>
<td>Potentially eligible patients (n)</td>
<td>1002</td>
<td>597</td>
<td>777</td>
</tr>
</tbody>
</table>

**Design**

**Sub-analysis goal:**

To evaluate ImmuNoXpert™ ability to differentiate between simple influenza and influenza with bacterial coinfection.

**Results and conclusions**

- Antibiotics (ABX) were prescribed to all 7 cases of influenza with bacterial coinfection and to 20/44 cases adjudicated as simple viral infections, indicating an overuse rate of 45%.
- The assay correctly classified 5 of the 7 viral with bacterial coinfection cases as well as 40 of the 44 simple viral cases supporting the assay’s potential to reduce antibiotic overuse 5-fold (from 45% to 4/44=9%, P<0.001).

**Conclusions**

The host-response assay can differentiate between simple influenza and influenza patients with bacterial coinfection, with potential to reduce antibiotic overuse. Utility studies are warranted to demonstrate that the assay can safely assist physicians in correct management of influenza patients.