Redefining Active MRSA Management

Xpert® MRSA
Healthcare’s #1 choice for on-demand MRSA testing.
The GeneXpert® System has taken the TAT of results from 2-3 days down to a few hours. Now we do not have to presumptively isolate patients. This has helped to reduce nursing labor, improve bed management and reduce isolation costs in the ICU.”

Mary Jane Larmon, RN, BSN, MBA
ICU Nurse Manager
Sharon Regional Health System

THE NEED

MRSA infections are costly.

The human and financial impact of MRSA is high:

- MRSA now accounts for greater than 60% of hospital-acquired *S. aureus* infections in the United States (2004)¹
- Over 278,000 hospitalized persons are infected by MRSA annually

THE SOLUTION

Rapid Active MRSA Surveillance Testing and Infection Control

- Reduction of healthcare-associated MRSA infections starts with active surveillance — Xpert® MRSA provides on-demand results in about an hour and has been proven to optimize effectiveness of infection control programs
- Xpert MRSA provides on-demand results — rapid identification of colonized patients allows for immediate actions for improved patient outcomes and reduced LOS
- Over 17,000 MRSA-related hospitalizations end in death²
- Over $2.5 billion excess health care costs are attributable to MRSA infections³
THE IMPACT

Loyola University Medical Center is an example of how active MRSA surveillance testing (first with the ICU patient population and then expanded to all patients), coupled with appropriate infection control practices, can successfully reduce MRSA infection rates by 67%.

LOYOLA UNIVERSITY MEDICAL CENTER NOSOCOMIAL MRSA INFECTION RATES

The bar chart shows a significant reduction in MRSA infections from 2007 to 2008. Pre-surveillance rate (baseline): 0.5294

ICU surveillance rate: 0.3924 67% reduction

Universal surveillance rate: 0.1750

TURN-AROUND TIMES OF POSITIVE RESULTS CALLED TO ICU

A study done at Centennial Medical Center in Nashville, TN compared the performance and turn-around times of samples of their ICU patients collected on admission. Samples were tested with BD CHROMAgar™ MRSA and Xpert® MRSA in the lab and results reported. Centennial was able to provide test results over 28 hours sooner using Xpert MRSA.

<table>
<thead>
<tr>
<th>Test</th>
<th>Number</th>
<th>Mean Turn Around Time (Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xpert MRSA Test – Positive Result</td>
<td>125</td>
<td>6.9</td>
</tr>
<tr>
<td>Cultures – Positive Results</td>
<td>79</td>
<td>35.8</td>
</tr>
</tbody>
</table>

“[Using culture] would equate to an additional 44 HAI transmissions… which would indicate that the use of Xpert MRSA could save up to 11 MRSA infections…”
**PERFORMANCE**

Performance characteristics of Xpert® MRSA were determined in a multi-site prospective investigation study at seven institutions by comparing Xpert MRSA with enriched culture, the most sensitive culture method.

**Xpert MRSA vs. Reference Culture Method**

<table>
<thead>
<tr>
<th></th>
<th>Culture +</th>
<th>Culture -</th>
<th>Culture Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Xpert MRSA +</strong></td>
<td>182</td>
<td>44</td>
<td>226</td>
</tr>
<tr>
<td><strong>Xpert MRSA −</strong></td>
<td>29</td>
<td>819</td>
<td>848</td>
</tr>
<tr>
<td><strong>Culture Totals</strong></td>
<td>211</td>
<td>863</td>
<td>1074*</td>
</tr>
</tbody>
</table>

*Three specimens did not give Xpert MRSA results on 2 attempts

^Positive predictive value

^Negative predictive value

**Positive Agreement**: 86.3%

**Negative Agreement**: 94.9%

**PPV**: 80.5%

**NPV**: 96.6%

**ACCURACY**

Prevention of MRSA requires rapid and accurate identification of colonized patients. Xpert MRSA demonstrates superior sensitivity compared to chromogenic culture methods.

**Xpert MRSA vs. Chromogenic Culture Media**

<table>
<thead>
<tr>
<th></th>
<th>% SENSITIVITY</th>
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</thead>
<tbody>
<tr>
<td>Xpert MRSA</td>
<td>86%</td>
</tr>
<tr>
<td>MRSA-ID</td>
<td>51%</td>
</tr>
<tr>
<td>Chromagar MRSA</td>
<td>59%</td>
</tr>
<tr>
<td>MRSA Select</td>
<td>65%</td>
</tr>
</tbody>
</table>

**COMPREHENSIVE**

Xpert MRSA is capable of detecting strains with all SCCmec types found in both healthcare-acquired and community-acquired MRSA.

<table>
<thead>
<tr>
<th>Type</th>
<th>Samples</th>
<th>Nasal swabs</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCCmec</td>
<td>I, II, III, IVa, V, VI</td>
<td></td>
</tr>
</tbody>
</table>
COMPREHENSIVE APPROACH TO MRSA INFECTION CONTROL

1. A colonized patient increases the risk of infection for themselves and others...

2. ... which may lead to skin & soft tissue infections...

3. ... which, if left undiagnosed/untreated, can progress to a blood stream infection.

Any of these MRSA infected patients are at risk of infecting other patients.
WORKFLOW:

3 EASY STEPS

Total hands-on time: <1 Minute

1. Insert swab into Sample Reagent vial and break

2. Vortex and dispense Sample into Specimen Port

3. Insert cartridge and start assay

Ordering Information

CATALOG INFORMATION

Xpert MRSA (10 tests) ................................................................. GXMRSA-100N-10
Xpert MRSA (120 tests) .............................................................. GXMRSA-120

Xpert MRSA/SA BC (10 tests) ....................................................... GXMRSA-BC-10
Xpert SA Nasal Complete (10 tests) ............................................. GXSACOMP-10
Xpert MRSA/SA SSTI (10 tests) .................................................... GXMRSA-SA-SSTI-10
Xpert C. difficile/Epi (10 tests) .................................................... GXCDIFF/EPI-10
Xpert C. difficile/Epi (120 tests) .................................................. GXCDIFF/EPI-120
Xpert vanA (10 tests) ................................................................. GXVANA-10

References:

1. 5 Million Lives Campaign “Getting Started Kit: Reduce Methicillin-resistant Staphylococcus aureus infection,” Institute for Healthcare Improvement, 2007

For In Vitro Diagnostic Use.