Introduction of ICU MRSA Screening

Introduction of Universal MRSA Screening

References:

The Impact

A study done at Centennial Medical Center in Nashville, TN compared the performance and turn-around times of samples of their ICU patients collected as 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.

The Impact

LOYOLA UNIVERSITY MEDICAL CENTER NOSOCOMIAL MRSA INFECTION RATES

TURNS-AROUND TIMES OF POSITIVE RESULTS CALLED TO ICU

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

Xpert® MRSA Healthcare’s #1 choice for on-demand MRSA testing.

WORKFLOW:

2 Easy Steps

Total hands-on time: <1 Minute

1. Insert swab into Sample Reagent vial and brake
2. Vortex and dispense sample into Specimen Port
3. Insert Cartridge and start assay

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%.
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. REFERENCE CULTURE METHOD

<table>
<thead>
<tr>
<th>Culture</th>
<th>Xpert MRSA</th>
<th>Reference Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>182</td>
<td>205</td>
</tr>
<tr>
<td>Negative</td>
<td>44</td>
<td>819</td>
</tr>
<tr>
<td>Total</td>
<td>226</td>
<td>863</td>
</tr>
</tbody>
</table>

positive agreement: 94.9%
negative agreement: 94.9%

XPERT MRSA VS. CHROMOgENIC CULTURE MEDIA

<table>
<thead>
<tr>
<th>Type</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasal swabs</td>
<td></td>
</tr>
<tr>
<td>SCC mec I, II, III, IVa, V, VI</td>
<td>86%</td>
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</table>

The Need

MRSA infections are costly. The human and financial impact of MRSA is high:
- In Europe, over 200,000 hospitalized people are infected by MRSA annually.
- Nine European countries reported MRSA proportions of greater than 25% in 2010.
- In Europe, over 200,000 hospitalized people 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 approximately one hour and has been proven to reduce healthcare-associated MRSA infections.
- Xpert MRSA provides on-demand results — rapid identification of colonized patients allows for immediate actions for improved patient outcomes and reduced length of stay.
- In the US, over 17,000 MRSA-related hospitalizations end in death.
- In the US, over $2.5 billion excess health care costs are attributable to 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.

<table>
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<th>Method</th>
<th>Sensitivity</th>
<th>Specificity</th>
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Accuracy:
- Positive predictive value: 80.5%
- Negative predictive value: 96.6%

The Xpert® MRSA advantage: Actionable information sooner
- Each moderately complex test can be run by most lab personnel.
- Random access for flexibility and workflow optimization.
- Rapid results in one hour to improve patient management.
- Early assay termination feature reports most positive results in under one hour.
- Fully integrated reagent and instrument system for accuracy and reproducibility.

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.

Organic Information

Xpert® MRSA Cat. No. GMMRSA100N-10
10 cartridges with reagents
Xpert® MRSA Cat. No. GMMRSA120
120 cartridges with reagents

Order Information

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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

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