



Xpert®  
MRSA

Redefining Active MRSA Management

 **Xpert® MRSA**

Healthcare's #1 choice  
for on-demand *MRSA testing*.

 **Cepheid®**  
A better way.

*“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)<sup>1</sup>
- Over 278,000 hospitalized persons are infected by MRSA annually

## The Solution

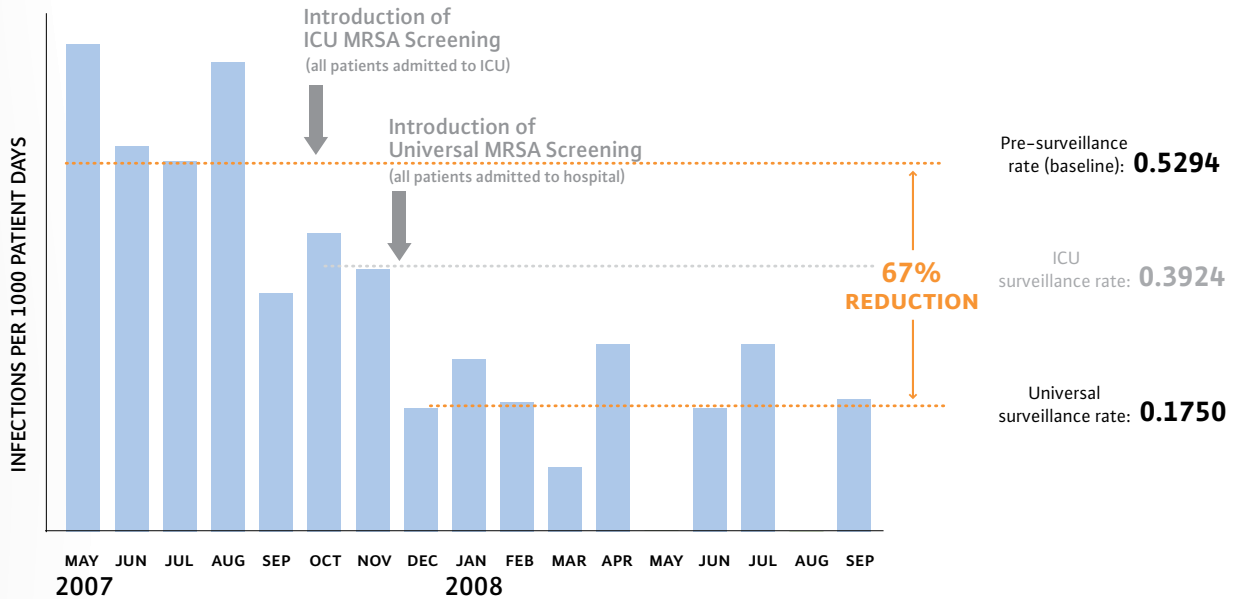
### **Rapid Active MRSA Surveillance Testing and Infection Control**

- 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 death<sup>2</sup>
- Over \$2.5 billion excess health care costs are attributable to MRSA infections<sup>3</sup>

## 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<sup>4</sup>



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.

TURN-AROUND TIMES OF POSITIVE RESULTS CALLED TO ICU<sup>5</sup>

Test	Number	Mean Turn Around Time (Hours)
Xpert MRSA Test - Positive Result	125	6.9
Cultures - Positive Results	79	35.8

“[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...”<sup>5</sup>

# 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.

## XPRT MRSA VS. REFERENCE CULTURE METHOD

		Culture		
		+	-	Totals
Xpert MRSA	+	182	44	226
	-	29	819	848
		211	863	1074*

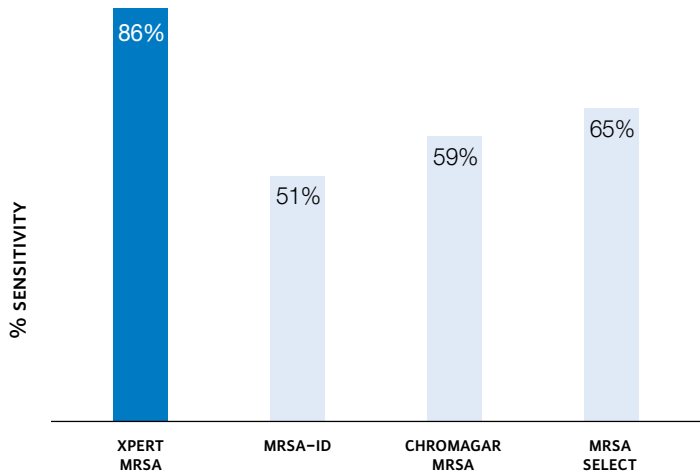
POSITIVE AGREEMENT: **86.3%**  
 NEGATIVE AGREEMENT: **94.9%**  
 PPV<sup>A</sup>: **80.5%**  
 NPV<sup>B</sup>: **96.6%**

\*Three specimens did not give Xpert MRSA results on 2 attempts  
<sup>A</sup>Positive predictive value  
<sup>B</sup>Negative predictive value

# Accuracy

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

## XPRT MRSA VS. CHROMOGENIC CULTURE MEDIA<sup>6</sup>



# Comprehensive

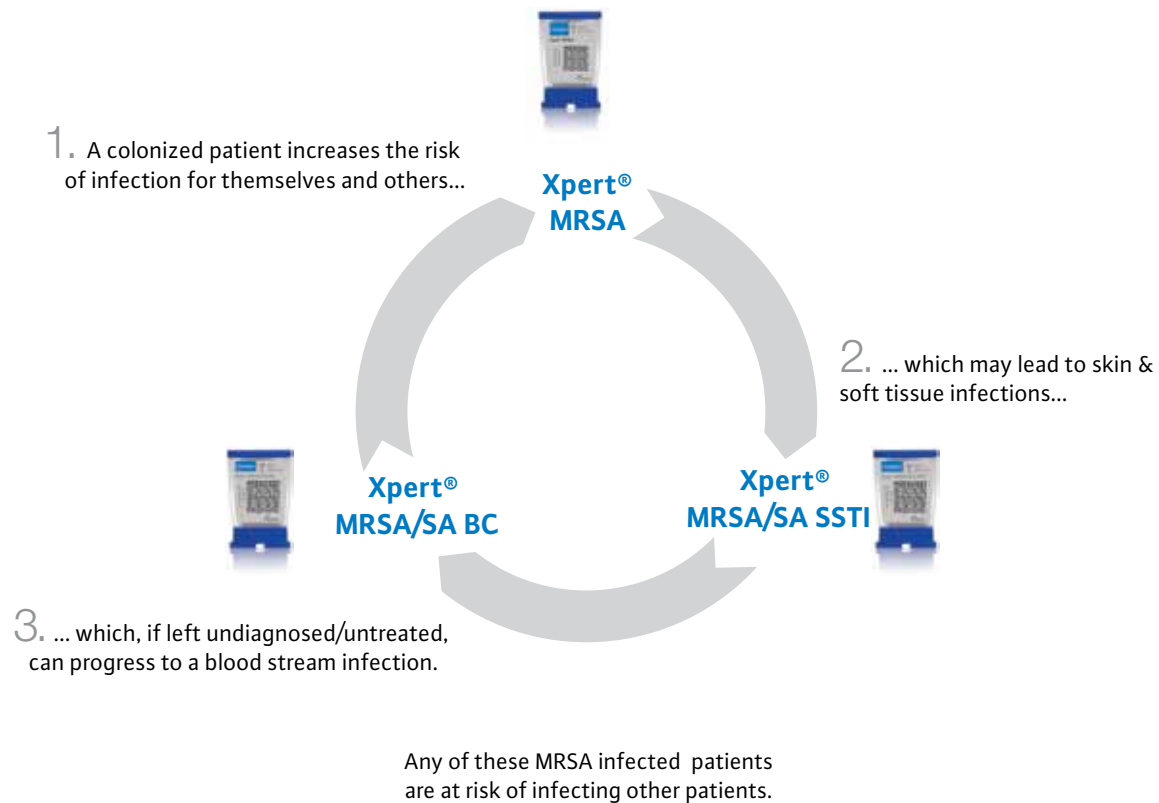
Xpert MRSA is capable of detecting strains with all SCCmec types found in both healthcare-acquired and community-acquired MRSA.

		Type
Samples	Nasal swabs	
SCCmec	I, II, III, IVa, V, VI	

# The Xpert® MRSA advantage: Actionable information sooner

- CLIA moderately complex test can be run by most lab personnel
- Random access for flexibility and workflow optimization
- Rapid results in about an hour to improve patient management
- Early assay termination feature reports most positive results in under an hour
- Fully integrated reagent and instrument system for accuracy and reproducibility

## Comprehensive Approach to MRSA Infection Control



### ORDERING INFORMATION

Xpert® MRSA..... Catalog No. GXMRSA-100N-10  
(10 cartridges with reagents)

Xpert® MRSA..... Catalog No. GXMRSA-120  
(120 cartridges with reagents)

## WORKFLOW:

# 2 Easy Steps

Total hands-on time: <1 Minute



### References:

1. 5 Million Lives Campaign "Getting Started Kit: Reduce Methicillin-resistant *Staphylococcus aureus* infection," Institute for Healthcare Improvement, 2007
2. Klein, E., Smith, D, Laxminarayan, R., "Hospitalizations and deaths caused by Methicillin-resistant *Staphylococcus aureus*, United States, 1999-2005," *Emerging Infectious Diseases*, 2007; 13: 1840-1846
3. Kuenhart, M.J, et al, "Methicillin-resistant *Staphylococcus aureus*-related hospitalizations, United States," *Emerging Infectious Disease* 2005; 11:868-872
4. Parada, JP et al. *Universal Inpatient Screening with Rapid PCR-Based Technology Reduces Nosocomial Methicillin Resistant Staphylococcus aureus (MRSA) Rates: May 2007 to September 2008.* Poster presented at APIC, June 2009.
5. Lassiter, S et al. *Rapid Detection of Methicillin-Resistant Staphylococcus aureus using the Cepheid GeneXpert® Dx System and the Xpert® MRSA Test.* Poster presented at ASM 2008.
6. Nahimana I, et al. Evaluation of three chromogenic media (MRSA-ID, MRSA-Select and CHROMagar MRSA) and ORSAB for surveillance cultures of methicillin-resistant *Staphylococcus aureus*. *Clin Microbiol Infect* 2006; 12: 1168-1174.



### CORPORATE HEADQUARTERS

904 Caribbean Drive  
Sunnyvale, CA 94089 USA

TOLL FREE 1.888.336.2743  
PHONE 1.408.541.4191  
FAX 1.408.541.4192

### EUROPEAN HEADQUARTERS

Vira Soleih  
81470 Maurens-Scopont France

PHONE 33.563.82.53.00  
FAX 33.563.82.53.01

[www.Cepheid.com](http://www.Cepheid.com)

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