

# THE MRSA THREAT

A CONCERN ACROSS THE SPECIALTY SPECTRUM

## MRSA Backgrounder

### Overview & Brief History

MRSA (methicillin-resistant *Staphylococcus aureus*) is a type of bacteria that has mutated to become much less vulnerable to the methicillin class of antibiotics (methicillin, penicillin, amoxicillin) and can cause several types of infections, the most common of which are skin, bloodstream, and pneumonia. These infections can be severe or even fatal if not identified and treated early and appropriately.

One of the first outbreaks of MRSA in the United States occurred at Boston City Hospital from 1967 to 1968.<sup>1</sup> By 1974, 2% of all hospital-acquired *S. aureus* infections were resistant to methicillin.<sup>2</sup> By 2002, 57% of ICU staph infections were caused by MRSA, and experts believe the incidence has now risen to 70%.<sup>3</sup> In 2005, an estimated 94,360 people in the US contracted an infection caused by MRSA, and 18,650 of them died.<sup>4</sup>

### The Changing Face of MRSA

Until recently, MRSA infections were largely confined to hospitals, with patient risk factors including a compromised immune system, surgical wounds, or an ICU stay. Cases of MRSA are now increasing and are now commonly seen in otherwise healthy people outside healthcare settings, with outbreaks reported among sports teams, at health clubs, in daycare centers, and at prisons, for example.

- MRSA isolates, as a percentage of staphylococcal infections, have increased from 2% in 1974 to 63% in 2004<sup>5</sup>
- Even though the vast majority of MRSA infections—85%—are still found in hospitals, clusters of community-associated MRSA (CA-MRSA) have been identified<sup>6</sup>
- CA-MRSA appears to be a more virulent strain of *S. aureus* than the original hospital-associated strain, and CA-MRSA is now spreading inside hospitals<sup>7,8</sup>
- Public health officials have now identified a new variant of CA-MRSA, referred to as multidrug-resistant USA300 MRSA<sup>9</sup>

### New Solutions

Most MRSA infections are treatable with antibiotics. Vancomycin has been regarded as the “workhorse agent” for the treatment of infections caused by MRSA for nearly 50 years. However, the decline in susceptibility to and efficacy of vancomycin has led infectious diseases experts to seek new solutions with different mechanisms of action.

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