

Frequently Asked Questions About MRSA

Q. What is PVL?

A. All predominant CA-MRSA strains produce Panton-Valentine leukocidin (PVL), a gene toxin not typical of HA-MRSA. The PVL toxin is strongly implicated in the propensity of CA-MRSA to cause skin and soft-tissue infection, necrotizing pneumonia, and necrotizing fasciitis; and to disseminate rapidly. At present, PVL-producing strains are susceptible to most non-beta-lactam antibiotics.

Q. What is the status of vancomycin efficacy against *S aureus* and MRSA?

A. As defined microbiologically, *S aureus* resistance to vancomycin first appeared 15 years ago but remains rare even today, some 5 decades after its introduction. However, there is evidence that vancomycin's potency against MRSA is gradually declining, even for those infections defined as vancomycin susceptible in the laboratory. In the last decade, clinical resistance has been reported for indwelling medical devices, serious SSTIs (gangrenous toe, foot ulcer), and osteomyelitis.

Q. Is there evidence that infection control measures can make a difference in MRSA transmission?

A. Evidence is mixed on this question. In 2011, Jain and coauthors reported on a study of MRSA prevention in a Veterans Administration Hospital, noting that a program of universal nasal surveillance, contact precautions, hand hygiene, and a policy of individual provider responsibility significantly decreased MRSA transmissions and infections. However, the Strategies to Reduce Transmission of Antimicrobial Resistant Bacteria in Intensive Care Units (STAR*ICU) trial investigators found that active surveillance and expanded barrier control with gloves and gowns did not reduce MRSA transmission rates in ICUs and were not used adequately by the providers.

Q. What is the outlook on new antibiotics?

A. Almost all modern-day antimicrobial drug classes are not modern at all. Beta-lactams, tetracyclines, aminoglycosides, macrolides, glycopeptides, and quinolones were developed and introduced between 1940 and 1960. Newer agents such as linezolid, daptomycin, and tigecycline, while valuable additions, have not yet proved to be clinically more effective than vancomycin. New cephalosporins, oxazolidinones, and glycoproteins with anti-MRSA potency are expected in the near future.