



Vancomycin Intermediate *Staphylococcus aureus* (VISA) and Vancomycin Resistant *Staphylococcus aureus* (VRSA) Fact Sheet for Healthcare Workers in the Community

What is *Staphylococcus aureus*?

Staphylococcus aureus (*S. aureus*) is a bacteria or germ that normally lives on the skin or in the nose of many people. Usually, these individuals are not aware of it and are completely healthy. This is called colonization. It is normal to be colonized with bacteria in many parts of our bodies. *S. aureus* is capable of causing infections from mild skin irritation to severe systemic infections such as pneumonia and bacteremias. *S. aureus* is one of the most common causes of community and hospital acquired infections, and affects individuals of all ages.

What are VISA and VRSA?

The usual treatment for *S. aureus* infections is a group of antibiotics related to penicillin that include methicillin, oxacillin and cloxacillin. Over the last 50 years, some strains of *S. aureus* have become resistant to multiple antibiotics including this specific group of antibiotics. This led to increased use of vancomycin. While most *S. aureus* are susceptible to vancomycin, a few have developed resistance and cannot be successfully treated with vancomycin. These highly antimicrobial resistant *S. aureus* are classified as either VISA or VRSA based on laboratory tests that determine the degree of resistance. In the late 1990's initial cases of VISA and VRSA were reported. VISA and VRSA isolated to date are also methicillin resistant. All VRSA isolates have been identified in individuals with Vancomycin Resistant *Enterococcus* (VRE) colonization/infection isolated in addition to MRSA. It is likely the resistance from VRE was transferred to the MRSA strain, resulting in VRSA. The identification of VISA/VRSA constitutes a "crisis" and requires immediate response.

What to look for (signs and symptoms of VISA/VRSA)?

The signs and symptoms of infection/colonization with VISA/VRSA are similar to other types of *S. aureus* infections but are very difficult to treat because of limited effective antibiotics.

How is VISA/VRSA transmitted/spread?

VISA/VRSA is spread by direct contact with a positive VISA/VRSA individual or by indirect contact, e.g. client care equipment contaminated by a person with VISA/VRSA. VISA/VRSA can be spread from one person to another by healthcare workers' hands or by sharing contaminated equipment.

How is VISA/VRSA detected?

The laboratory can identify VISA/VRSA either by a screening swab of the nose or wound or by a clinical specimen obtained from an infected individual. Laboratories perform tests to determine which antibiotics will be effective (sensitive) or not effective (resistant) for treatment. If *S. aureus* is identified with reduced susceptibility to vancomycin it is called VISA, while *S. aureus* identified as fully resistant to vancomycin is called VRSA.



Who is at risk?

At present VISA/VRSA infections are rare. Antibiotic use is a major risk factor for emergence of antibiotic resistant organisms (ARO's). Reduction of overuse and misuse of antibiotics will decrease the risk of emergence of *S. aureus* with reduced susceptibility to vancomycin.

Patients in hospital are at higher risk for acquiring VISA/VRSA. Some risk factors are:

- Colonization/infection with MRSA and/or VRE.
- Underlying health conditions, e.g. diabetes, kidney disease.
- Previous infection with VISA/VRSA.
- Presence of IV catheters or other invasive devices.
- Recent hospitalization.
- Recent exposure to vancomycin or other antimicrobial agents.

Clients in the home are not at risk of acquiring VISA/VRSA if Routine Practices are followed.

Healthcare worker/staff: Healthcare workers are not at risk for VISA/VRSA colonization/infection, therefore not routinely screened. The chances of colonization/infection with VISA/VRSA do not increase even if you have been in contact with an individual with VISA/VRSA, e.g. at work. Healthcare workers/staff including pregnant healthcare workers are at minimal risk of acquiring VISA/VRSA colonization/infection provided they adhere to Routine Practices & Additional Precautions for the specific situation. If you are immunocompromised the risk is also very small. Please contact Occupational & Environmental Safety & Health if you have concerns about working with clients who are colonized/infected with VISA/VRSA.

How is VISA/VRSA treated?

Colonized individuals do not routinely need treatment. Treatment of VISA/VRSA infections will be directed by the individual's doctor in consultation with an Infectious Diseases Specialist. Options for treatment may be very limited and costly.

Routine Practices are required for all care activities on positive VISA/VRSA clients in the community to limit the spread of microorganisms.

Key points include:

- Hand hygiene with soap and water or alcohol based hand rub before and after contact with every client.
- Good environmental cleaning including reusable client care equipment.
- If gloves are used they must be changed and hand hygiene performed between procedures and clients.

Refer to WRHA Community IP & C Manual for more detailed protocols.

Hand washing or using alcohol-based hand rub is the best way to prevent the spread of these organisms.