

The Facts About...

MRSA

What is MRSA?

Staphylococcus aureus is a bacterium often found in 20-30% of the noses of normal healthy people and is also commonly found on people's skin. Most strains of this bacterium are sensitive to many antibiotics and infections can be effectively treated. *Staphylococcus aureus* which are resistant to an antibiotic called methicillin are referred to as methicillin-resistant *Staphylococcus aureus* or MRSA. Many commonly prescribed antibiotics are not effective against these bacteria. Some MRSA strains occur in epidemics, indicated by an 'E' before MRSA eg EMRSA-16, EMRSA-3 and may be distinguished from others by a number of special laboratory techniques.

Is MRSA dangerous?

MRSA rarely, if ever, presents a danger to the general public. It is no more dangerous or virulent than methicillin-sensitive *S. aureus* but it is more difficult to treat. This bacterium is usually confined to hospitals and in particular to vulnerable or debilitated patients. These include patients in intensive care units, burns units, surgical and orthopaedic wards. Some nursing homes have experienced problems with this bacterium. MRSA does not pose a risk to the health of hospital staff, unless they are suffering from a debilitating disease, or family members of an affected patient or their close social or work contacts. Therefore the friends or family of such a patient need not take any special precautions and should not be discouraged from normal social contact.

What does MRSA cause?

Most patients from whom MRSA is isolated are colonised with this organism rather than infected. Colonisation means the presence of the organism on the skin, or in the nose, or in the back of the throat but without any illness. However, if the patient also has a fever and inflammation associated with the presence of MRSA then they are considered to be infected. A proportion of patients become infected particularly if they have been put at greater risk, such as following an operation, or have a malignancy, or the presence of a bladder catheter, intravenous infusion or surgical drain. These patients may then develop illnesses similar to those caused by methicillin-sensitive *S. aureus* such as wound and skin infections, urinary tract infections, pneumonia and bacteraemia or 'blood poisoning'.

How is MRSA treated?

Colonisation with MRSA in the absence of illness or clinical evidence of infection may be treated with surface applied agents. This includes using special antibiotics, eg mupirocin, applied inside the nose, as well as washing, bathing and hair washing with disinfectants eg chlorhexidine. These measures will help reduce the possibility of the patient becoming infected or spreading the bacterium to another patient. Where infection is present, antibiotics commonly used to treat methicillin-sensitive *S. aureus* such as flucloxacillin, erythromycin and the cephalosporins, are not effective and the patient will require treatment with other antibiotics such as vancomycin or teicoplanin. These last two antibiotics are expensive, may be toxic and have to be given by intravenous infusion. Patients infected with MRSA must therefore be treated in hospital. This is only one of the reasons why considerable effort is made to try and prevent the spread of this organism.

How is spread of MRSA prevented?

Scrupulous handwashing by hospital staff before and after contact with patients and before any procedure, is the single most important infection control measure. It is most likely to prevent spread of MRSA from one patient to another, or from patient to member of staff who may subsequently pass the bacterium on to other patients. Patients with MRSA should be physically isolated in a single room with the door remaining closed and the room regularly damp dusted, or they should be nursed in a special ward away from other non-infected patients. The patient's notes should be clearly labelled 'MRSA' so that this type of accommodation is provided if and when they are admitted to hospital at any time in the future. It is important that the clinician looking after the patient in hospital notifies the general practitioner. If this has not already been done, then the patient or their family should mention to their general practitioner that they are carrying MRSA. This information should also be passed to any hospital to which the patient may be admitted in the future to ensure physical separation or isolation immediately on admission and hence reduce the possibility of spread to others. The use of antibiotics such as those applied inside the nose and bathing procedures previously described, will also help to reduce the risk of spread. Finally, when such a patient is discharged from hospital, their room should be comprehensively cleaned and all linen and other clinical waste disposed of in special bags.