

Introduction

Methicillin-resistant *Staphylococcus aureus* (MRSA) infections have become a topic of concern for hospitals and long-term care facilities during the past decade. Because of the numerous questions addressed to the Georgia Department of Human Resources about proper handling of patients infected or colonized with this and other resistant organisms in health care facilities, a task force was asked to develop management guidelines. The group reviewed new information published in recent medical literature and recommendations made by other advisory groups, and took this information into account in its discussions. This report summarizes the guidelines developed by the task force, which met in March 1991.

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Executive Summary

The prevalence of antibiotic resistant organisms is increasing. Methicillin-resistant *Staphylococcus aureus* (MRSA) has drawn particular attention in the past few years. Newer data suggest that appropriately treated infections due to MRSA are not more prolonged, severe, nor likely to kill than those infections due to *Staphylococcus aureus* that are susceptible to the methicillin-like antibiotics. Because of this, long-term care facilities now have several options as to the intensity of measures with which they deal with MRSA.

General recommendations concerning MRSA and other antibiotic resistant bacteria include:

Colonization with a resistant organism such as MRSA is neither an indication for hospitalization nor a reason to restrict admission to a long-term care facility.

Isolation of patients *colonized* with resistant organisms such as MRSA is not indicated under most circumstances.

Universal precautions for Infection control should be practiced at all times. It is not practical nor possible to know all persons colonized with MRSA or other resistant organisms within a facility. The precautions taken must include:

- ▶ **Hands** should be washed before and after contact with all patients even when gloves are worn. A written protocol detailing proper hand wash technique should be available for reference. An antimicrobial soap may be useful when dealing with MRSA contamination.
- ▶ **Gloves** should be worn when in contact with any body substance and used in conjunction with proper hand wash technique. Gloves should be changed and hands washed immediately after contact with each resident.
- ▶ **Gowns** should be worn if soiling of clothes is possible.
- ▶ **Masks** should be worn only in special situations (e.g., when caring for a resident who is coughing).

Infections with resistant organisms such as MRSA should be evaluated and treated on a case-by-case basis.

This document presents specific guidelines for several important clinical aspects and a sample fact sheet for employee education.

Background

Staphylococcus aureus (*S. aureus*) has been a prominent cause of nosocomial infections for many years. Its role diminished markedly in the 1960s when the drug methicillin and similar drugs were introduced, as most strains of *S. aureus* at that time were susceptible. During the last decade, however, strains of *S. aureus* resistant to appear. Infections due to these methicillin-resistant *S. aureus* (MRSA) organisms caused widespread concern because they could be treated effectively only with the parenteral drug vancomycin, which had much greater potential for side-effects than did the methicillin-like drugs. As the organism rapidly spread in hospitals and extended care facilities, unusually intense measures were recommended for control of MRSA spread, such as strict isolation precautions or refusal to admit patients with the organism into health care facility.

In the past few years, however, new research data from clinical and epidemiologic studies has changed the view of MRSA. In many parts of the United States, MRSA now has become entrenched both in hospitals and long-term care facilities, with resultant interchange of patients carrying the organism between the two types of institutions.¹ Studies in long-term care facilities have shown that the presence of MRSA colonization in long-term care facilities have not led to an increase in the facility's infection rates, changed the pattern of infections seen in this setting, influenced the number of patients transferred to acute care facilities nor influenced the mortality rate for infections in nursing home residents.¹ These observations make it questionable as to how much of scarce resources should be committed to attempts to eradicate or control MRSA infections. Some health care facilities now have chosen to treat MRSA colonization and infection in the same way that it treats *S. Aureus* strains that are still sensitive to the methicillin-like group of drugs.²

On the other hand, presence of a high frequency of MRSA accounts for a higher frequency of vancomycin usage for treatment of established infections and for empiric therapy. Vancomycin therapy is somewhat more expensive and more toxic than therapy with the methicillin-like drugs.³

In addition, widespread use of vancomycin may foster the emergence of newer, vancomycin-resistant organisms.³ Since there are few other drugs beside vancomycin useful for controlling MRSA, it is worrisome that these antibiotic selection pressures exist. These concerns have led some to suggest that intensive efforts should be made to eradicate MRSA both in acute care hospitals and in long-term care facilities.^{3,4} These concerns about treatment are more likely to be important in the acute care hospital. Since vancomycin must be administered parenterally to be effective in systemic infection; few long-term care facilities would administer this drug.

Background Continues

Efforts to eradicate MRSA that have been successful involve systems for immediately recognizing new patients who carry the organism and instituting barrier precautions immediately for these patients, avoidance of transfer of patients with MRSA, intensive surveillance and culturing of patients and personnel, setting up MRSA isolation areas or other means to physically separate MRSA-positive patients and staff from others, strictly enforced barrier isolation precautions to interrupt spread of the organism, treatment protocols for positive patients and staff, and stringent environmental disinfection.⁴ One recent report describes eradication of MRSA colonization in a long-term care facility by these steps plus treatment of nasal colonization with a new topical antimicrobial.⁵ Thus, controlling MRSA, when it has been accomplished, “can be extraordinarily expensive and labor-intensive, and cause disruption of clinical services.”³ Even then, in some instances, eradication of carrier state has not been effective.⁴

The task force feels that these new data offer long-term care facilities several options as to the intensity of measures with which they deal with MRSA. Those facilities with extensive infection control resources may wish to use the measures for eradication suggested above.^{3,4} Others which have very limited resources for infection control may wish to follow the approach that eliminates these intensive precautions, which disrupt desirable social interactions between patients and curtail services, such as physical therapy, to patients.¹

Regardless of the intensity of the approach chosen by a given long-term care facility, the task force identified several considerations that should apply to all situations in which antibiotic-resistant organisms, including MRSA, are encountered. These guidelines are listed on the next page.

General Recommendations for Long-Term Care Facilities

General infection control measures are appropriate for preventing spread of MRSA, as for other types of infecting organisms.

Procedure Recommendations:

Inform all employees about resistant organisms and how to deal with them. A sample “Employee Information Sheet”, using MRSA as an example, is included.

Observe universal precautions at all times. It is not practical nor possible to know all persons colonized or infected with MRSA or other resistant organisms. These precautions must include:

- ▶ Washing hands before and after contact with residents. A written protocol detailing proper hand washing technique should be available to all staff for reference. An antimicrobial hand soap may be useful when dealing with MRSA contamination.
- ▶ Wearing gloves when in contact with any body substances, and use proper hand washing technique.
- ▶ Wearing a mask when in close contact with a resident who is coughing.
- ▶ Wearing a water-repellent gown to protect clothes when soiling with blood or body fluids is a possibility.
- ▶ Cleaning the resident’s environment (horizontal surfaces, etc.) Daily and when visibly soiled.
- ▶ Disinfecting resident equipment (blood pressure cuffs, stethoscopes, etc.) between residents. Don’t share resident personal items.

**General Recommendations for
Long-Term Care Facilities
Continues**

Policy Recommendations:

Colonization with resistant organisms such as MRSA is neither an indication for hospitalization nor a reason to restrict admission to a long-term care facility.

Isolation of residents colonized with resistant organisms such as MRSA is not indicated under most circumstances.

Infections with resistant organisms such as MRSA should be evaluated and treated on a case-by-case basis.

Infection Control Recommendations for Long-Term Care Facilities

Note: The presence of wounds or other infected or colonized sites should not limit procedures such as physical therapy or compromise the level of resident care.

Residents With Draining Lesions At Any Site:

1. Cover draining lesions when possible.
2. Discard soiled dressings in leak-proof bag(s).
3. Bag all linen. Place wet or damp linen in leak-proof bag(s) for transport.
4. Wear gloves when manipulating the drainage area. Wash hands before and after gloving.
5. Wear water-repellent gowns when soiling of clothes is likely. Remove the gown before leaving the resident room.

Residents With Urinary Catheters:

1. Change indwelling urinary catheters only when necessary.
2. Maintain a closed drainage system...
3. Keep drainage bags off the floor, but below the level of the resident's bladder.
4. Use a separate container for collection of urine from each resident. Disinfect the container after each use. Avoid touching the container with the catheter bag or drainage spout.
5. Wash and thoroughly dry the resident's perineal area a minimum of once per day or anytime it becomes soiled.
6. Secure the catheter to the resident to avoid tension on the urinary catheter.
7. Wash hands after manipulating the catheter or collecting urine.

**Infection Control Recommendations
for Long-Term Care Facilities**

Residents With Respiratory Symptoms:

1. Teach the resident to cough into a tissue, and provide a bag for its disposal. Encourage resident to wash hands frequently.
2. Wear gloves when providing tracheostomy care, suctioning, or giving mouth care.
3. Wear masks when in close contact with a resident who is coughing (example: when suctioning or giving mouth/tracheostomy care).
4. Wash hands after removing gloves when touching respiratory secretions.

MRSA Fact Sheet for Employees

What is *MRSA*?

MRSA stands for methicillin-resistant *Staphylococcus aureus*. It is a strain of *S. Aureus* that is distinguished from other *S. aureus* strains by its resistance to the special Beta-lactose drugs (called the “methicillin-like” drugs) that usually are used to treat these organisms. MRSA can affect people in different ways. People can carry the organism in the nose or on the skin without showing any symptoms of illness. This is called MRSA **colonization**. MRSA also can cause **infections** such as boils, wound infections, infected decubitus ulcers, etc. There is no evidence that properly-treated infections caused by MRSA are more or less serious than other *Staphylococcus aureus* infections.

How is *MRSA* transmitted?

MRSA is spread from person-to-person by direct contact. This means that if persons have MRSA on their skin (especially on the hands) and touch another individual, they may spread MRSA. A person may have MRSA on the hands as a result of being a carrier or from touching another person who is a carrier or infected with MRSA.

What can I do to prevent the spread of *MRSA*?

General infection control measures are appropriate for preventing the spread of MRSA. Hand washing, using soap and warm running water for 10-20 seconds, is the single most important and cost-effective measure necessary to control the spread of MRSA. Proper hand washing should be performed after the care of each resident, after handling soiled dressings and clothing, and after wearing gloves. Report illness including unusual skin rashes or boils to your supervisor before working with residents. **Wash your hands before and after contact with each patient.**

MRSA Fact Sheet for Employees Continues

Will I take *MRSA* home to my family?

This is unlikely because the organism is rarely transmitted by linens and clothing. Wear protective garments when you are be at risk of contaminating your clothing with wound or other body fluids drainage. Always thoroughly wash your hands before going home from work.

How is *MRSA* Treated?

Persons who are *colonized* with MRSA usually do not need to be treated. It is a medical decision to decide if treatment is necessary. The antibiotic used to treat persons with severe MRSA *infections*, vancomycin, is given intravenously. Oral vancomycin is not effective against MRSA. Vancomycin can have severe side effects. Other antibiotics may be considered if indicated by susceptibility testing results.

Glossary of MRSA Related Terms

Carrier

A person who is *colonized* with MRSA. The organism may be present in the nares (nose), sputum, urine, an open wound, in the stool or on the skin without the clinical manifestations of disease. A carrier may transmit the organism to another person through direct contact, usually by contact with hands.

Colonization

Presence of MRSA on tissue without the presence of symptoms or clinical manifestations of illness or infection. A carrier is *colonized* with MRSA.

Infection

Invasion and multiplication of MRSA in a tissue with the manifestation of clinical symptoms of infection such as increased white blood cell count, fever, lesions, boils, drainage from a break in skin continuity, and erythema. *Infection* does warrant treatment.

Mode of Transmission

The method by which MRSA is spread into the environment and to other persons. MRSA is transmitted primarily by direct person-to-person contact (i.e. from the hands of one individual to a susceptible individual). It is not thought that bed lines or environmental surfaces play a significant role in MRSA transmission. However, proper techniques for cleaning of linens and disinfection of environmental surfaces are good infection control measures against all organisms, including MRSA.

Nosocomial Infection

An infection that was not present on admission but developed during the hospital/facility stay.

Universal Precautions

The application of isolation (barrier) precautions for blood, bloody fluids, other body fluids, non-intact skin, and mucus membranes for ALL residents regardless of diagnosis.

References

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