Recommendations for Placement of Children with Methicillin Resistant *Staphylococcus aureus* (MRSA) in School and Child Care Settings

Developed by the Colorado Department of Public Health and Environment and the MRSA in School/Childcare Settings Working Group[*]

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INTRODUCTION

Staphylococcus aureus ("staph") are bacteria that are commonly found in the noses and on the skin of healthy people. When staph are present on or in the body without causing illness it is called "colonization." At any given time, from 20% to 50% of the population are colonized with staph bacteria. These bacteria can occasionally get through the skin barrier and cause skin or soft tissue infection. Although most such infections are not severe, staph can also cause more serious illness such as blood or lung infections.

Staph with resistance to the antibiotic methicillin (or oxacillin/nafcillin) are known as **m**ethicillin- **r**esistant ***S****taphylococcus* ***a****ureus* or "MRSA." Resistance means that a particular antibiotic will not work against those bacteria (and susceptible means that the antibiotic will work against those bacteria). MRSA was first identified in the United States in the late 1960s and has primarily been seen in the hospital setting among older and sicker people. These hospital strains are usually resistant to multiple other antibiotics. Most people with MRSA have a history of recent hospitalization, surgery or dialysis, residence in a long-term care facility or the presence of a medical device (such as a catheter).

Since the late 1990s, a number of studies have demonstrated that MRSA colonization and infection are now being seen among healthy people in the community who do not have these healthcare-associated risk factors. It appears that these people have acquired MRSA in the community, rather than in a healthcare setting. Compared to the more typical hospital-acquired MRSA infections, these community-acquired MRSA infections tend to occur among younger people, and to involve less serious skin and soft tissue infections. Additionally, these MRSA strains are susceptible to many other antibiotics besides penicillins and cephalosporins. No data are currently available on community-acquired MRSA infections in Colorado.

MRSA are not known to cause more frequent or severe infections than staph strains that are susceptible; however, infections caused by MRSA may be more difficult to treat because there are fewer antibiotic choices. Additionally, antibiotics typically prescribed for healthy persons without known MRSA risk factors are often not effective for a MRSA infection. Effective antibiotics may not be prescribed until the results of culture and antibiotic susceptibility testing are known. This delay can allow the infection to progress.

INFECTION
Most people with staph are colonized only, that is, the bacteria are present in or on the body but are not causing illness/infection. Symptoms of infection vary depending on the part of body that is infected. Skin infections (the most common site of staph infections) typically result in local redness and warmth of the infected area with or without pus. Localized infections include boils, impetigo and wound infections Most infections are uncomplicated, but staph bacteria can get into the bloodstream and other body sites and then cause severe illness.

SPREAD
Staph bacteria are spread by contact with the hands, skin drainage, or secretions from the nose of a person who is infected or colonized. Persons who have draining infections are shedding more bacteria and are more infectious than persons who are colonized only.

PREVENTION/CONTROL
Hand washing is the most effective method of preventing the spread of staph. Persons should wash hands thoroughly with soap and warm running water after having contact with secretions from the nose, tracheostomies, or skin drainage of an infected or colonized person.

RECOMMENDATIONS

I. Children known to be colonized with MRSA in the nose or skin do not need to be excluded from the "healthy" school/childcare classroom.

II. Children known to be colonized with MRSA who have draining wounds or skin sores should be excluded from childcare; such children should be excluded from school if the wounds cannot be covered, contained, or dressing maintained intact and dry.

III. Children known to be colonized with MRSA should not be placed in classrooms with children who have severe immune system suppression.

Persons with severe immune system suppression are at increased risk for infections or more severe illness from some types of microorganisms including staph bacteria. Significant immune system suppression includes: 1) persons with low absolute neutrophil (type of white blood cell) counts (e.g., due to cancer chemotherapy); 2) persons with HIV infection and low CD4 lymphocyte counts; 3) persons on chronic high-dose systemic steroids (e.g. for severe asthma or certain other chronic diseases).

Persons with other medical conditions are not at increased risk of infection from staph or MRSA. Examples of such medical conditions include: HIV infection and near normal CD4 lymphocyte counts (often on antiretroviral therapy); asthma without chronic high-dose steroids; systemic lupus or other connective tissue disease without chronic high-dose steroids or other immunosuppressive medication; and cancer without low absolute neutrophil counts.

IV. <u>More complex situations</u> should be assessed on a <u>case-by-case basis</u> in conjunction with the local or state health department and pediatric infection control specialists.

An example of such a situation would be the child with a tracheostomy who is colonized with MRSA. The case-by-case assessment should take into account factors such as specific needs or characteristics of the child; the classroom setting; the number and types of children; classroom staffing; and the ability of the program to implement precautions that need to be taken to minimize the risk of transmission (see Appendix).

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APPENDIX: Considerations for More Complex Situations

QUESTIONS

1) What is the site of colonization (e.g. tracheostomy)?
2) Does the child have an assigned personal assistant?
3) If there is a personal assistant, is the staffing one-to-one?
4) What are the specific needs or characteristics of the child?
5) Is the child mobile or wheel chair bound?
6) What type of classroom setting is involved?
7) What are the numbers and types of children in the classroom?
8) What is the ability of the program to implement the precautions listed below?

GENERAL RECOMMENDATIONS

1) Use standard precautions (hand hygiene) and gloves when suctioning a tracheostomy site; if there is a reasonable likelihood of spraying of respiratory secretions resulting from suctioning, then use of a gown, mask, and eye protection is recommended.
2) Perform suctioning at a distance from other persons in classroom
3) Disposable gloves are adequate for other (non-suctioning) contact with secretions
4) Wash hands with soap and water (consider alcohol hand rub) after removing gloves
5) The child's environment should be cleaned routinely and when soiled with body fluids or secretions
6) A change in secretions (i.e. amount or color) or increased cough in the child with a tracheostomy indicates the need for clinical evaluation and consideration of exclusion from the classroom until signs and symptoms resolve and/or adequate therapy has been completed.

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