



Infectious Disease Epidemiology Report

Methicillin-Resistant *Staphylococcus aureus* (MRSA) – Maine, 2011



Introduction

Staphylococcus aureus, often referred to as "staph," are bacteria commonly found on the skin or in the nose of about 30% of the population. This organism is called Methicillin-sensitive *Staphylococcus aureus* (MSSA). Most of the time, staph do not cause any harm. Methicillin-resistant *Staphylococcus aureus* (MRSA) is a type of staph resistant to certain antibiotics called beta-lactams. These antibiotics include methicillin and other more common antibiotics such as penicillin, amoxicillin, and oxacillin. Less than 2% of people are colonized with MRSA.

Severe or potentially life-threatening MRSA infections occur most frequently among patients in healthcare settings with an invasive MRSA infection. Patients in healthcare facilities may have weakened immune systems, undergo procedures (such as surgery) or have catheters inserted into the skin. These conditions make it easier for MRSA to get into the body and infect sterile sites, such as blood.

Methods

An invasive MRSA infection is defined as MRSA isolated from a normally sterile site (blood, cerebrospinal fluid, pleural fluid, etc.). Common invasive MRSA infections include bloodstream infections, pneumonia, and joint infections. Symptoms vary by infection location. Invasive MRSA infections are a reportable condition in Maine.

Maine CDC also receives reports of non-invasive MRSA infections, including surgical wound infections and urinary tract infections. Reporting non-invasive MRSA infections is not required by law, and not all facilities and laboratories in Maine report these to Maine CDC. Therefore, surveillance data for non-invasive MRSA infections in this report likely under represent the true burden of disease among Maine residents.

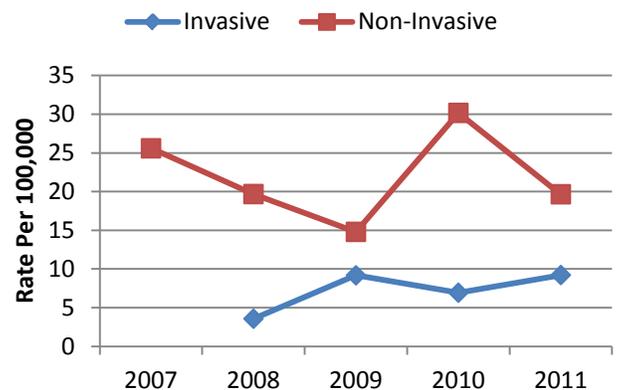
Results

During 2011, a total of 121 confirmed cases of invasive MRSA infections were reported to Maine CDC. This is an increase from the 91 cases reported in 2010. The rate of invasive MRSA infections in Maine was 9.2 cases per 100,000 persons (Figure 1). Reporting of invasive MRSA infections started in April 2008; therefore, data for 2008 do not represent a full year. This may account

for the low rate of reported invasive MRSA infections in 2008.

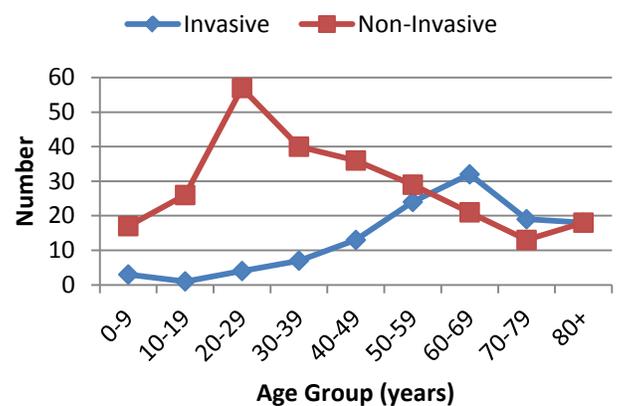
During the same time period, 258 cases of non-invasive MRSA infections were reported to Maine CDC for a state rate of 19.7 cases per 100,000 persons. This is a decrease from the 396 cases reported in 2010. The rate is likely less than the true disease burden because of differences in reporting.

Figure 1: MRSA Infection Rates in Maine, 2007-2011



Sixty-two percent of invasive and non-invasive MRSA infections reported in Maine were among males. Among those with invasive MRSA infections, the median age was 61 years (range 2 to 95 years). The median age among those with non-invasive MRSA infections was 33 years (range 0 to 102 years).

Figure 2: MRSA Infections by Type and Age Range* in Maine, 2011



*One non-invasive MRSA case was missing date of birth and was excluded.

During 2011, invasive MRSA infections were reported in residents from 15 counties in Maine, and non-invasive

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MRSA infections were reported in residents from 14 counties. The rate of invasive MRSA infections was highest in Somerset County (19.6 cases per 100,000 residents). The rate of reported non-invasive MRSA infections was highest in Washington County (78.3 cases per 100,000 residents).

Figure 3: Rate of Invasive MRSA Infections by County of Residence in Maine, 2011

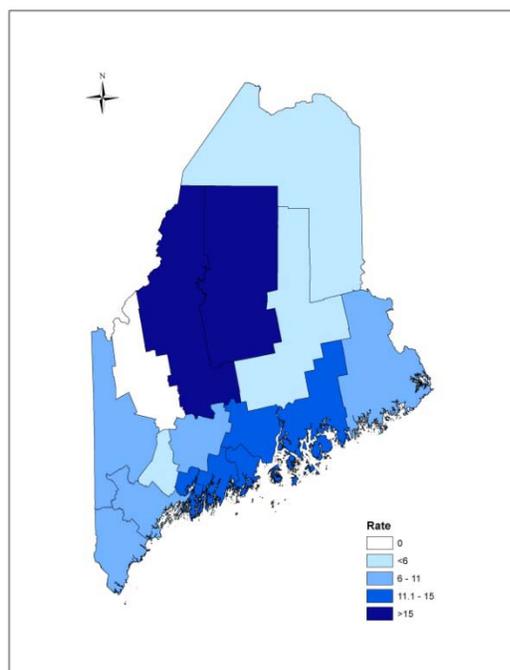
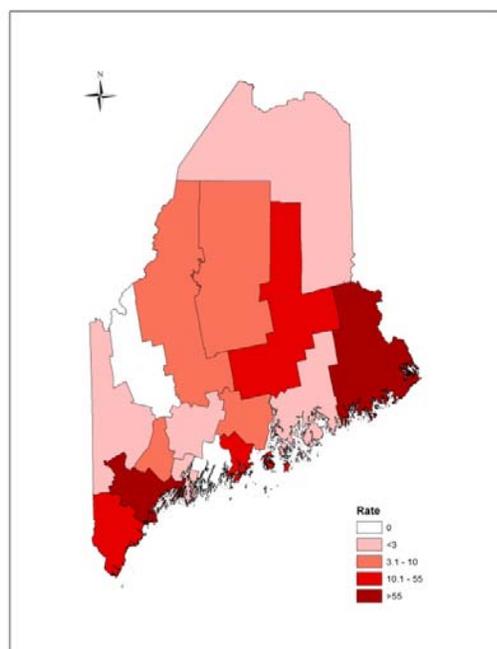


Figure 4: Rate of Non-Invasive MRSA Infections by County of Residence in Maine, 2011



Discussion

Maine CDC began routine surveillance for invasive MRSA cases in 2008 when it was added to the Maine CDC Notifiable Conditions List. Maine surveillance data for 2011 indicate the rate of invasive MRSA infections has increased slightly. The rate of reported non-invasive MRSA shows a marked decrease compared with 2010, but this should be interpreted with caution since the reporting of non-invasive cases is not required and is inconsistently reported by facilities and providers.

The most significant risk factor for MRSA infection is open wounds or broken skin, such as a surgical site. However, MRSA infections can occur on areas of the skin where there is no obvious wound or break in the skin.

Preventive measures to reduce MRSA transmission:

- Cover wounds with clean, dry bandages until healed
- Do not attempt to treat a MRSA skin infection by yourself; doing so could worsen or spread it to others
- Wash hands with soap and water or use an alcohol-based hand rub to prevent the spread of MRSA
- Use disinfectants effective against *Staphylococcus aureus*
- Avoid sharing personal items including towels, washcloths, razors, and clothing
- Avoid contact sports and other skin-to-skin contact until your infection has healed

Invasive MRSA infections and all outbreaks of MRSA must be reported to Maine CDC by calling 1-800-821-5821 or faxing to 1-800-293-7534. For more information contact your healthcare provider or local health center.

Additional information about MRSA infections is available at:

Maine CDC website:

<http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/airborne/mrsa.shtml>

Federal CDC website: <http://www.cdc.gov/mrsa/>

Prevention of MRSA Infections:

<http://www.cdc.gov/mrsa/prevent/index.html>