



# Infectious Disease Epidemiology Report

## Invasive Methicillin-Resistant *Staphylococcus aureus* (MRSA) Maine, 2015



### Background

*Staphylococcus aureus*, often referred to as "staph," are bacteria commonly found on the skin or in the nose of a third of the U.S. population. Most of the time, staph do not cause any harm. Methicillin-resistant *Staphylococcus aureus* (MRSA) is a type of staph that is resistant to certain antibiotics called beta-lactams. These antibiotics include methicillin and other more common antibiotics such as penicillin, amoxicillin, and oxacillin. About 1% of people in the U.S. are colonized with MRSA.

Severe or potentially life-threatening MRSA infections occur most frequently among patients in healthcare settings. 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 invade the body and infect sterile sites, such as blood.

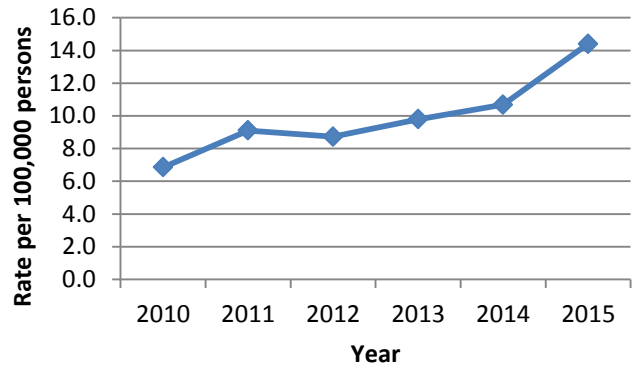
### Methods

An invasive MRSA infection is defined as MRSA isolated from a normally sterile site (blood, cerebrospinal fluid (CSF), pleural fluid, synovial fluid etc.). Common invasive MRSA infections include bloodstream infections and joint infections. Symptoms vary by infection location. Invasive MRSA infections are reportable in Maine. Cases are counted based upon laboratory report only; no follow up is completed on individual cases.

### Results

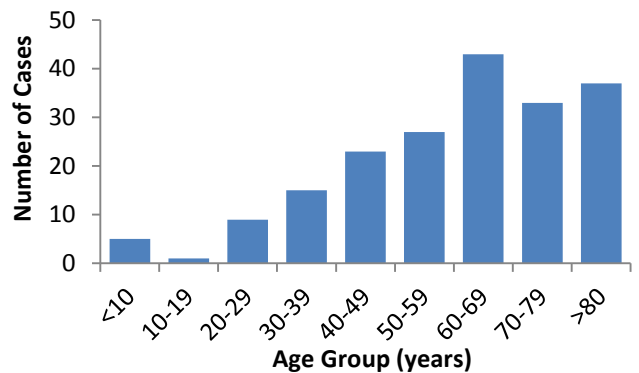
During 2015, a total of 192 confirmed cases of invasive MRSA infections were reported to Maine CDC. This is an increase from the 142 cases reported in 2014. The rate of invasive MRSA infections in Maine in 2015 was 14.4 cases per 100,000 persons (Figure 1). Invasive MRSA is not nationally notifiable.

Figure 1: Invasive MRSA Infection Rates in Maine, 2011-2015



Sixty-two percent of invasive MRSA infections reported in Maine were in males. The median age of reported invasive MRSA infections was 60 years (range 1 to 92 years) (Figure 2).

Figure 2: Invasive MRSA Infections by Age in Maine, 2015



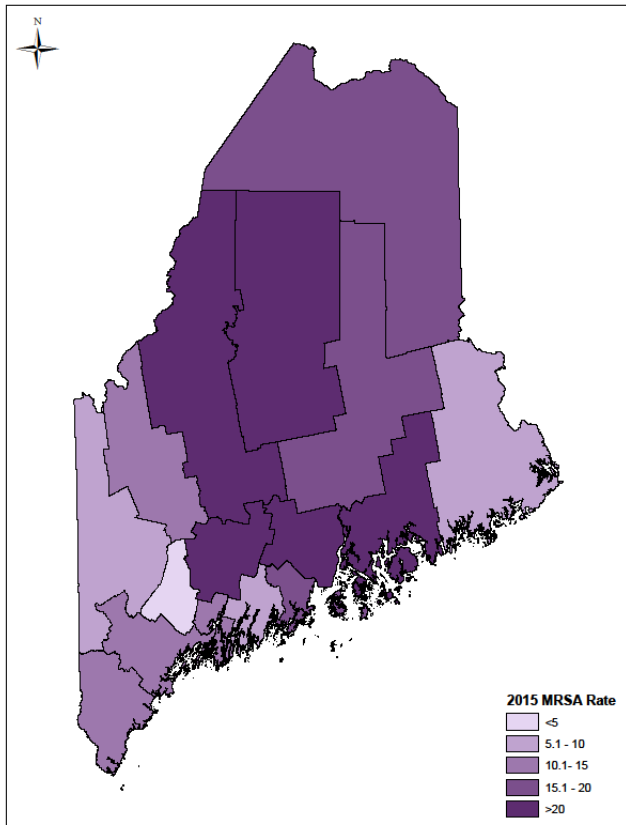
Of the 192 reported invasive MRSA cases, 113 (58.9%) were known to be hospitalized, and four (2.1%) died.

The most common source of the invasive MRSA infection was blood with 162 (84.4%) cases testing positive by blood culture. Other sources included: brain, bone, CSF, pleural fluid, and synovial fluid.

During 2015, invasive MRSA infections were reported in residents from all 16 counties in Maine (Figure 3). The rate of invasive MRSA infections was highest in Kennebec County (24.2 cases per 100,000 residents). Eight counties had rates of invasive MRSA higher than the state rate (Aroostook, Hancock, Kennebec, Knox, Penobscot, Piscataquis, Somerset, and Waldo).

## Invasive Methicillin-resistant *Staphylococcus aureus* (MRSA) – Maine, 2015

Figure 3: Rate of Invasive MRSA Infections by County of Residence in Maine, 2015



### Discussion

Maine CDC began routine surveillance for invasive MRSA infections in 2008 when it was added to the Maine CDC Notifiable Conditions List. Rates appear to be gradually increasing over time. This could be due to more facilities reporting cases or a true increase in disease burden.

Cases of MRSA are not actively investigated; they are counted based on laboratory confirmation only. The rates of hospitalization and death could be higher than reported, as this information comes from the initial report and no follow up is performed.

Although non-invasive MRSA is not reportable, the best way to prevent invasive MRSA is to prevent non-invasive MRSA, including skin and soft tissue infections.

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.

To prevent or 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 it 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 that are 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
- Use contact precautions for hospitalized patients

Invasive MRSA infections and all outbreaks of MRSA are reportable to Maine CDC by calling 1-800-821-5821 or faxing to 1-800-293-7534. MRSA infections identified by a hospital are reportable to the National Healthcare Safety Network, a federal CDC surveillance system. For more information contact your healthcare provider.

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/>
- National Healthcare Safety Network website: <http://www.cdc.gov/nhsn/>