

# Invasive MRSA in Allegheny County



## What is Invasive MRSA?

MRSA, or methicillin-resistant *Staphylococcus aureus*, is a type of bacterial infection that is resistant to antibiotics. About one in every three people has *Staphylococcus aureus* in their nose and two out of 100 people carry MRSA in their nose without signs of illness. If MRSA does cause disease, it usually causes skin infections. However, if MRSA infects a normally sterile site in the body, like blood or bone, it is known as invasive MRSA. If invasive MRSA is not treated promptly it can lead to sepsis and death.

## How is it transmitted?

Invasive MRSA can be contracted in a hospital setting through improper infection control like poor hand hygiene, leading to bloodstream infections or pneumonia, or it could be contracted in long-term care facilities such as nursing homes. Invasive MRSA can also be community-acquired.

## How often does it occur?

The Centers for Disease Control and Prevention (CDC) estimated that about 72,000 invasive MRSA infections occurred in the U.S. in 2014.<sup>1</sup> Invasive MRSA is a reportable condition in Allegheny County.<sup>2</sup> From 2015 to 2016, the Allegheny County Health Department received 267 reports of invasive MRSA, including 20 recurrent infections.<sup>3</sup> Death was reported in 4% of cases.

**Table 1.** Reported invasive MRSA cases by specimen source, Allegheny County, 2015 – 2016\*.

Specimen Source	N = 267, n (%)
Blood	238 (89)
Joint/synovial fluid	14 (5)
Bone	11 (4)
Pleural fluid	4 (2)
CSF	1 (0.4)
Muscle	1 (0.4)
Peritoneal fluid	0 (0)
Pericardial fluid	0 (0)
Other	18 (7)
Missing	6 (2)

\*Some cases involved multiple positive sources

**Table 2.** Reported invasive MRSA cases by patient characteristics, Allegheny County, 2015 – 2016.

Characteristic	N = 267, n (%)
<b>Sex</b>	
Male	154 (58)
Female	103 (39)
Unknown/Missing	10 (3)
<b>Age</b>	
≤ 19	3 (1)
20-44	37 (14)
45-64	81 (30)
≥ 65	144 (54)
Missing	2 (1)
<b>Race</b>	
White	193 (72)
Black	35 (13)
Asian	1 (1)
Unknown/Other/Missing	38 (14)

**Table 3.** Reported invasive MRSA cases by risk factors, Allegheny County, 2015 – 2016.

Risk Factor	N = 267, n (%)
<b>Stayed in an acute or long-term healthcare facility within 1 year of invasive MRSA test</b>	
Yes	142 (53)
No	54 (20)
Unknown	61 (23)
Missing	10 (4)
<b>Previous MRSA infection</b>	
Yes	107 (40)
No	98 (37)
Unknown	54 (20)
Missing	8 (3)
<b>Received dialysis within 1 year of invasive MRSA test</b>	
Yes	36 (13)
No	145 (55)
Unknown	77 (29)
Missing	9 (3)
<b>Vascular catheter in place at any time in the 2 calendar days before invasive MRSA test</b>	
Yes	39 (15)
No	169 (63)
Unknown	43 (16)
Missing	16 (6)

1. <https://www.cdc.gov/abcs/reports-findings/surveys/mrsa14.html>

2. <http://webapps.achd.net/MRSA/Home>

3. A recurrent infection involves a positive culture for a previously reported patient ≥ 30 days after initial report. Positive cultures for the same patient reported less than 30 days apart are considered the same event.