

Healthcare-associated *Staphylococcus aureus* bloodstream infections

This page explains the *Staphylococcus aureus* (*S. aureus*) measure used on this website and describes how the measure is calculated.

S. aureus ('Golden staph') is a type of bacterium that can cause an infection of the bloodstream and can be acquired after a patient receives medical care or treatment in hospital. Contracting an *S. aureus* bloodstream infection while in hospital can be life threatening. Hospitals aim to have as few cases as possible.

For this measure, data for public hospitals are provided by state and territory health authorities. Data for private hospitals are provided by individual private hospitals and private sector hospital groups.

The nationally agreed benchmark set under the National Healthcare Agreement (NHA) is no more than 2.0 cases of healthcare-associated *S. aureus* bloodstream infection per 10,000 days of patient care for public hospitals in each state and territory.

Hospital peer groups

The hospital peer groups for this measure are based on the standard Australian hospital peer groups published by the Australian Institute of Health and Welfare (AIHW 2015), see 2015 Australian hospital peer groups (AIHW, 2015).

The following peer groups have been used:

MyHospitals groups	AIHW 2015 hospital peer groupings
Major hospitals	Principal referral
Large hospitals	Public acute group A
Medium hospitals	Public acute group B
Children's hospitals	Public Children's hospitals and public Combined women's and children's hospitals

Hospitals that are not included in the above categories are considered 'Unpeered' in MyHospitals reports. 'Unpeered' hospitals are a diverse group of specialised hospitals, sub and non-acute hospitals, small hospitals and clinics. Their results may not be comparable.

Rate of healthcare-associated *S. aureus* bloodstream infection

Cases of healthcare-associated *S. aureus* bloodstream infection per 10,000 patient days under surveillance.

Data source

National *Staphylococcus aureus* Bacteraemia Data Collection (NSABDC).

About the measure

This measure is the rate of *S. aureus* bloodstream infection associated with care provided at this hospital. Data are presented for total cases, and from 2016–17 cases are disaggregated by methicillin-resistant *S. aureus* (MRSA) and methicillin-sensitive *S. aureus* (MSSA).

A case of *S. aureus* bloodstream infection is defined as a positive blood culture for *S. aureus*. For surveillance purposes, only the first isolate per patient is counted, unless at least 14 days has passed without a positive blood culture, after which an additional case is recorded.

- **A case (patient episode) of *S. aureus*** is considered to be healthcare-associated if the first positive blood culture is collected more than 48 hours after hospital admission or less than 48 hours after discharge, or if the first positive blood culture is collected 48 hours or less after admission and one or more of the following clinical criteria was met for the case of *S. aureus*:
 - *S. aureus* is a complication of the presence of an indwelling medical device (for example, intravascular line, haemodialysis vascular access, cerebrospinal fluid shunt, urinary catheter)
 - *S. aureus* occurs within 30 days of a surgical procedure where the *S. aureus* is related to the surgical site
 - *S. aureus* was diagnosed within 48 hours of a related invasive instrumentation or incision
 - *S. aureus* is associated with neutropenia contributed to by cytotoxic therapy. Neutropenia is defined as at least two separate calendar days with values of absolute neutrophil count (ANC) or total white blood cell count (WBC) $<500 \text{ cells/mm}^3$ ($<0.5 \times 10^9/\text{L}$) on or within a seven-day time period which includes the date the positive blood specimen was collected (day 1), the three calendar days before and three calendar days after.

The definition of healthcare-associated *S. aureus* was developed by the Australian Commission on Safety and Quality in Health Care (the Commission). The Commission changed the definition in 2016, with clarification of the neutropenia criterion above. This definition of a healthcare-associated case of *S. aureus* was used by all states and territories for the 2015–16, 2016–17 and 2017–18 reporting years.

Data for 2010–11 to 2014–15 are provided according to the previous neutropenia criterion:

- *S. aureus* is associated with neutropenia ($<1 \times 10^9/L$) contributed to by cytotoxic therapy.

The definition used for healthcare-associated *S. aureus* cases occurring prior to the 2015–16 reporting period is available at: <http://meteor.aihw.gov.au/content/index.phtml/itemId/598734>.

This change in definition does not impact the comparability of counts of *S. aureus* bloodstream infection from previous years.

- **The patient days under surveillance** is the total number of days of admitted patient care under surveillance by infection control surveillance systems within the hospital.

Calculating the measure

The rate is calculated as the number of healthcare-associated cases of *S. aureus* divided by the total number of patient days under surveillance (x 10,000).

Rates based on less than 5,000 patient days under surveillance are denoted as NP.

If the surveillance rate (patient days under surveillance/total number of patient days) is less than 95%, the rate is reported as interpret with caution (using the symbol *), as the sample under surveillance may not be representative of the hospital.

Specification

The Performance and Accountability Framework (PAF) indicator has the same definition as the NHA indicator, but the PAF indicator reports at establishment level. Further details of the data specification for this indicator are available on Australia's metadata online registry, METeOR.

Notes

- The *S. aureus* cases were associated with both admitted patient care and with non-admitted patient care (including emergency departments and outpatient clinics). The comparability of the *S. aureus* rates among jurisdictions and over time is limited due to coverage differences. Also, the count of patient days reflects the amount of admitted patient activity but does not necessarily reflect the amount of non-admitted patient activity.
- New South Wales does not provide patient day data, but rather occupied bed day data for calculation of the denominator. There may be some difference between patient day and occupied bed day data. The peer group values include New South Wales establishments.
- Footnote †: For 2010–11, Queensland hospitals' *S. aureus* reporting was restricted to patients aged 14 years and older, and therefore are not nationally comparable between jurisdictions and have not been included in the peer group values.

For further information see the data quality statement in the Admitted patient care 2018-19 Appendices.