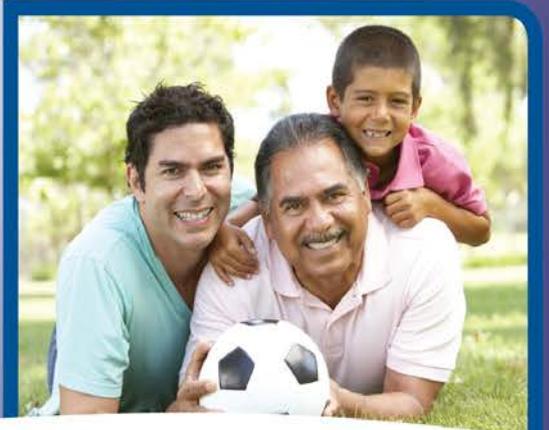
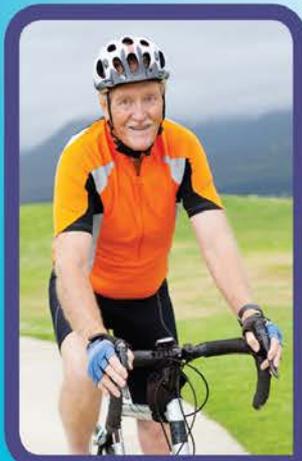


Staphylococcus aureus bacteraemia

Surveillance protocol



***Staphylococcus aureus* bacteraemia (SAB) surveillance protocol**

Department of Health and Human Services, Tasmania

Published 2016

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Suggested reference: Wilson, F, Hughson, L, Anderson, T and Wells, A (2016), *Staphylococcus aureus* bacteraemia (SAB) surveillance protocol, Hobart: Department of Health and Human Services.

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Background

Staphylococcus aureus is a Gram positive bacterium that colonises around 20 – 30% of the population.

Some *Staphylococcus aureus* bacteria are resistant to the antibiotic methicillin and these are termed methicillin-resistant *Staphylococcus aureus* (MRSA).

S. aureus can cause a wide range of infections including skin and soft tissue infections, bone and joint infections, respiratory tract infections and medical device related infections.

Infection may be associated with a bacteraemia (bloodstream infection) which may be complicated by sepsis, endocarditis or metastatic seeding (infection established at other tissue sites). *S. aureus* bacteraemia (SAB) are a serious cause of morbidity and mortality worldwide with a proportion of these SAB episodes associated with healthcare and healthcare activities. Many of these are potentially preventable.

SAB in Tasmania is a notifiable disease pursuant to the Public Health Act 1997 thus all SABs identified in Tasmania are notified to the Director of Public Health by the identifying laboratory.

TIPCU monitors and reports on all SAB identified within Tasmania in accordance with the surveillance methods outlined in this protocol.

Definitions

Inpatient healthcare facility – facility where patients can be admitted for overnight stay and includes acute private or public hospitals, rural hospital, sub-acute facility, long term care facility, nursing home.

Inpatient – patient who has a minimum of an overnight stay in a healthcare facility.

Outpatient – patient who visits a healthcare facility for a medical, allied health or similar appointment.

Day case – a patient who attends a healthcare facility for a full or part day for a course of treatment.

SAB patient episode - a positive blood culture for *Staphylococcus aureus*; count the first isolate per patient unless at least 14 days have passed without a positive culture after which, record another isolate as an additional patient episode.

Healthcare associated SAB – the SAB meets either Criterion A **OR** Criterion B:

- **Healthcare associated Criterion A** - the patients first SAB was collected more than 48 hours after hospital admission or less than 48 hours after hospital discharge.
- **Healthcare associated Criterion B** - the patients first SAB was collected less than or equal to 48 hours after hospital admission **AND** one or more key clinical criteria (KCC) were met.

Community associated SAB - the SAB does not meet either Criterion A or Criterion B

Contaminant – the clinical picture does not support infection **AND** either a repeat blood culture is negative **AND/OR** no *S. aureus* targeted antibiotic treatment is given.

Definitions (continued)

Key Clinical Criteria (KCC) – four healthcare related devices, procedures or conditions that may be directly related to a SAB.

Key clinical criteria are identified for healthcare associated SAB:

- Healthcare associated SAB Criterion A – record a KCC where one can be identified
- Healthcare associated SAB Criterion B – a KCC must be identified

KCC	Description	Examples
KCC 1	<p>Complication of an IV device if:</p> <ul style="list-style-type: none"> • An IV catheter was in-situ up to 48 hours prior to the SAB episode and there is no other focus of infection • An IV introducer was used for a procedure in the 48 hours prior to the SAB episode and there is no other focus of infection. • The device is a haemodialysis access device and there is clinical evidence of infection at the site OR there is no other identifiable source of <i>S. aureus</i> infection. • The non-IV indwelling device was in situ up to 48 hours prior to the SAB AND there is clinical or microbiological evidence of <i>S. aureus</i> infection at the insertion site or the organ connected to the device. 	<p>A – CVC - central venous catheter (CVC), tunneled CVC (Hickman's), peripherally inserted central venous catheter (PICC), Swan Ganz catheter, Vascath (dialysis), implanted devices (Infusaport, Portacath).</p> <p>B – other: IV device - peripheral arterial line, peripheral intravenous device, umbilical venous device, AV fistula.</p> <p>C – other: non IV indwelling device - urinary catheter, percutaneous endoscopic gastrostomy (PEG) tube, chest tubes, cerebro-spinal fluid (CSF) shunts, peritoneal dialysis catheters.</p>
KCC 2	<p>Within 30 days of surgery OR within 365 days of implant surgery where the SAB is related to the surgical site.</p>	<p>There is an infection that is proven or likely to be due to <i>S. aureus</i> and fulfills the surveillance criteria of a :</p> <ul style="list-style-type: none"> • superficial or deep organ space surgical site infection within 30 days of the surgical procedure or • deep incisional/organ space SSI related to the implanted device within one year of the surgical procedure.
KCC 3	<p>Within 48 hours of invasive instrumentation.</p>	<p>Pacing wires, endoscopic retrograde cholangiopancreatography (ERCP), cardiac catheterisation.</p>
KCC 4	<p>Neutropenia defined as at least two separate calendar days with absolute neutrophil count (ANC) $< 0.5 \times 10^9 / L$ on or within a seven-day time period which includes the date the positive blood specimen was collected (Day 1), the 3 calendar days before and the 3 calendar days after.</p>	<p>Only relates to neutropenia contributed to by cytotoxic therapy. Does not include neutropenia from other causes such as disease related neutropenia.</p>

Surveillance process

- Patient episodes of SAB are notified by the identifying laboratory to Public Health Services (PHS).
- Laboratory notifications are entered into the TIPCU spreadsheet by TIPCU personnel within two working days of receipt.
- Enhanced surveillance data collection spreadsheet is sent electronically or via mail from TIPCU to the relevant personnel (hospital infection prevention and control unit or local medical officer) for completion and return to TIPCU within two weeks.
- Upon receipt of the returned enhanced data collection spreadsheet, TIPCU personnel enter the returned data into the SAB spreadsheet.
- TIPCU perform data validation quarterly from laboratory reports and in consultation with the relevant infection control personnel.
- Electronic forms are stored in the TIPCU shared drive.
- Hard copy laboratory reports filed alphabetically by quarter and year and held by TIPCU.
- Validated data is published quarterly within eight weeks of the end of the relevant quarter.

Data validation

SAB data is validated quarterly in the following way:

- Identifying laboratories perform a data extraction of all SABs identified within Tasmania in the relevant quarter and send the extracted data to TIPCU.
- TIPCU cross checks data extraction with SABs notified to Public Health within the same quarter.
- Any discrepancies are investigated by TIPCU and the identifying laboratory.
- TIPCU sends cross checked data to hospital infection control personnel to cross check against SABs notified to them, to reassess acquisition attribution and for data error corrections.
- The validated data is returned to TIPCU

Surveillance process responsibilities

	Notification	Data
Laboratory	<ul style="list-style-type: none"> Notifies CDPU of result 	<ul style="list-style-type: none"> Hospital identification number Surname Date of birth Sex Specimen date Specimen laboratory number Name of organism Antibiogram
TIPCU	<ul style="list-style-type: none"> Checks SAB spreadsheet on shared drive to identify if the SAB fits the 'SAB patient episode' case definition. New case: <ul style="list-style-type: none"> Enters minimum patient data set into SAB spreadsheet Requests enhanced data for patient from hospital infection control personnel/General Practitioner Enters enhanced data into SAB spreadsheet. Duplicate results: <ul style="list-style-type: none"> Discards repeat results into confidential waste. 	<ul style="list-style-type: none"> Indigenous status Postcode Australian State/Territory identifier Laboratory code Geographical site of patient when specimen was taken Current hospitalisation – hospital code, date of admission, date of discharge
Infection control personnel; General Practitioner	<p>Completes enhanced data and identifies if the SAB is:</p> <ul style="list-style-type: none"> Healthcare associated OR Community associated If healthcare associated, is it Criterion A or B? <ul style="list-style-type: none"> If Criterion B, the SAB must have an associated KCC If criterion A, identify if there is a KCC associated with the SAB. Returns enhanced data to TIPCU within 2 weeks of receipt of request. 	<ul style="list-style-type: none"> Ward where blood culture taken Classification of SAB Attribution of SAB Key Clinical Criteria (for Criterion A where applicable and for all Criterion B) <ul style="list-style-type: none"> For KCC 1 - device type code For KCC 2 or 3 – hospital code where surgery or invasive instrumentation occurred.

Information management

All information held by TIPCU is in accordance with the information privacy principles as set out in the *Personal Information Privacy Act 2004*.

Information shared by laboratories (public and private) pursuant to the *Public Health Act 1997* is held in accordance with the *Personal Information Privacy Act 2004*.

All data or information requests must be referred to the Director of Public Health.

Contact details

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