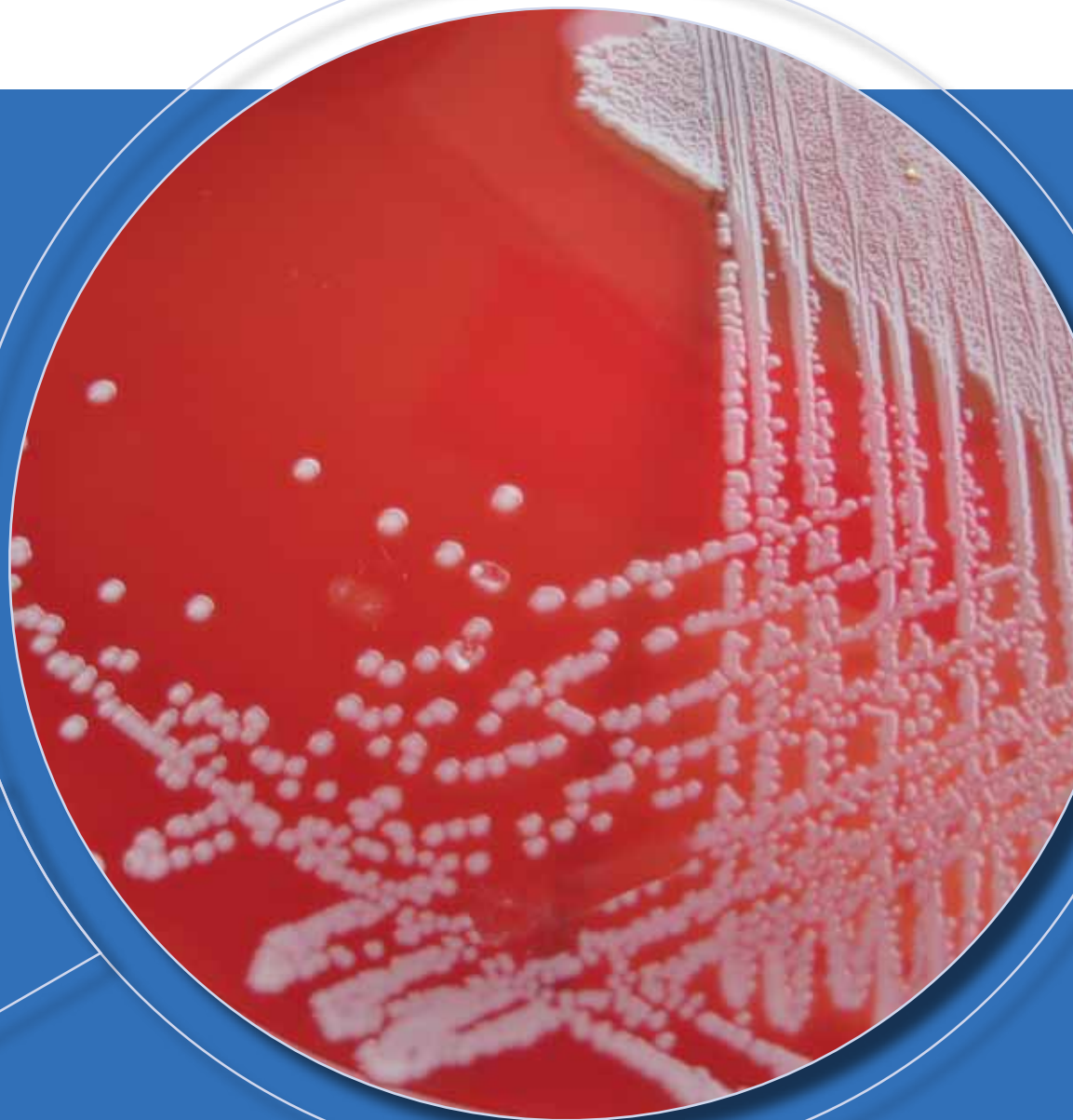


Australian Commission on Safety and Quality in Health Care

Implementation Guide
for Surveillance of
Staphylococcus aureus Bacteraemia

2013



Acknowledgements

Members of the HAI Technical Working Group for the SAB Guide:

Helen Van Gessel – Western Australia

Rebecca McCann – Western Australia

Allison Peterson – Western Australia

Christine Cope – South Australia

Irene Wilkinson – South Australia

Brett Mitchell – Tasmania

Annie Wells – Tasmania

Bernadette Kennedy – Victoria

Lisa Hall – Queensland

Julie Gallard – Infection Prevention and Control Professional

Rosie Lee – Infection Prevention and Control Professional

Louise Cooley – Public Health Laboratory Network

Marilyn Cruickshank – ACSQHC

Sue Greig – ACSQHC

Elizabeth Hanley – ACSQHC

Kylie Willows – ACSQHC

Neville Board – ACSQHC

Cate Quoye – ACSQHC

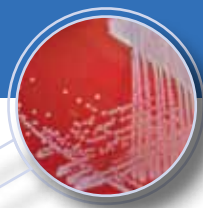
© Commonwealth of Australia 2011

This work is copyright. It may be reproduced in whole or in part for study training purposes subject to the inclusion of an acknowledgment of the source. It may not be reproduced for commercial usage or sale. Reproduction for purposes other than those indicated above, requires written permission from the Australian Commission on Safety and Quality in Health Care.

Cover photo: Dr John Ferguson and Dr Patrick Harris

Contents

Acknowledgements	Inside front cover
Introduction	2
Case definition	2
Background to SAB surveillance	3
Application of SAB definition	3
Case detection methods	3
Contaminants	4
Applying Criterion A	4
Incubating on admission	4
SAB that occurs 48hrs or less after discharge	4
Applying Criterion B	5
Criterion B.1	5
Criterion B.2	6
Criterion B.3	6
Criterion B.4	6
Allocation of SAB between health care facilities	7
Selection of appropriate denominator for national surveillance	8
Appendix 1 – Flowchart of identification of healthcare associated SAB	10
Appendix 2 – Examples of application of the SAB definition	11
Appendix 3 – Definitions	16
Appendix 4 – Comments and feedback	Inside back cover
References	Inside back cover

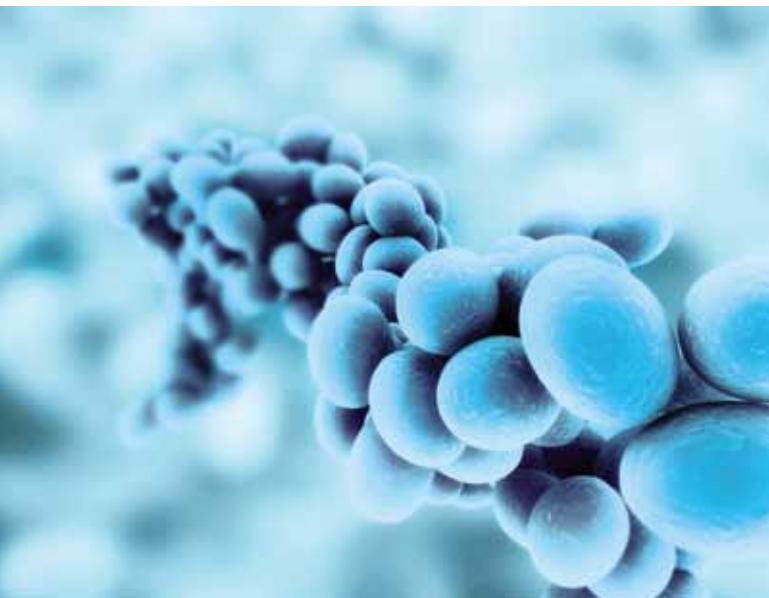


Introduction

The Implementation Guide for the Hospital Surveillance of SAB has been produced by the Healthcare Associated Infection (HAI) Technical Working Group of the Australian Commission on Safety and Quality in Health Care (ACSQHC), and endorsed by the HAI Advisory Group. The Technical Working Group is made up of representatives invited from surveillance units and the ACSQHC, who have had input into the preparation of this Guide. (See acknowledgements on inside front cover)

The Guide has been developed to ensure consistency in reporting of SAB across public and private hospitals to enable accurate national reporting and benchmarking. It is intended to be used by Australian hospitals and organisations to support the implementation of healthcare associated *Staphylococcus aureus* bacteraemia (SAB) surveillance using the endorsed case definition¹ and further detail in the Data Set Specification.²

The Guide has been developed to support and standardise existing surveillance activities and is not intended to replace or inform clinical assessment of infections for patient management.



Case definition



Healthcare associated *Staphylococcus aureus* bacteraemia (SAB)

A patient-episode of *Staphylococcus aureus* bacteraemia (SAB) is a positive blood culture for *Staphylococcus aureus*.

For surveillance purposes, only the first isolate per patient is counted, unless at least 14 days has passed without a positive culture, after which an additional episode is recorded

A SAB will be considered to be a **healthcare-associated** event if:

EITHER

CRITERION A

The patient's first SAB positive blood culture was collected **more than 48 hours after** hospital admission or less than 48 hours after discharge.

OR

CRITERION B

The patient's first positive SAB blood culture was collected **less than or equal to 48 hours after hospital admission and one or more of the following key clinical criteria** was met for the patient-episode of SAB:

1. SAB is a complication of the presence of an indwelling medical device (e.g. intravascular line, haemodialysis vascular access, CSF shunt, urinary catheter) See notes for additional surveillance consideration
2. SAB occurs within 30 days of a surgical procedure where the SAB is related to the surgical site
3. SAB was diagnosed within 48 hours of a related invasive instrumentation or incision
4. SAB is associated with neutropenia (less than $1 \times 10^9/L$) contributed to by cytotoxic therapy

If none of these criteria are met, then the episode of SAB is considered to be community-acquired for the purposes of surveillance.

Background to SAB surveillance

The rate of healthcare associated bacteraemia due to *Staphylococcus aureus* is considered to be a robust outcome measure for the control of HAI because the identification of *S. aureus* in a blood culture is rarely considered to be a contaminant.

The majority of healthcare associated SAB episodes are linked to medical procedures, such as the insertion of intravenous lines or surgery, and as such are potentially preventable. This has been clearly articulated in recent articles in the medical literature.^{3,5}

The national SAB case definition¹ provided was developed by the HAI Advisory Committee of

the ASQHC and was endorsed by all Australian jurisdictions in 2009.

Currently, only infections associated with care provided by acute care public hospitals are required to be monitored and reported by jurisdictions for inclusion in the National Health Care Agreements reporting system. (For more detail about acute care public hospitals, refer to Appendix 3)

However, other facilities and healthcare services will either choose to, or be required to monitor this indicator at a local or jurisdictional level.

Application of the SAB definition

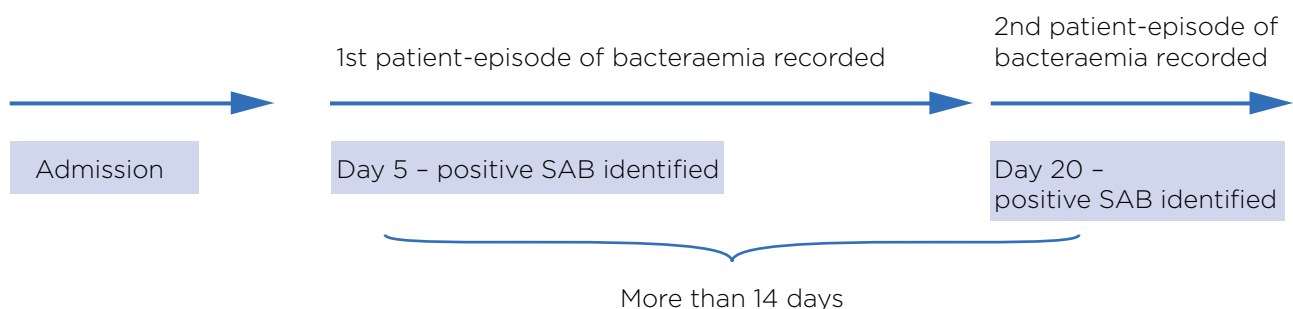
Notes for application of the healthcare associated SAB definition

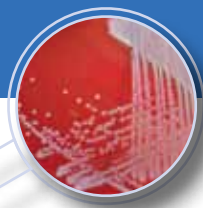
Case detection methods

- An active surveillance process should be undertaken for all SAB cases. This process should include review by infection control staff in collaboration with clinicians responsible for case management to determine that the case fits the healthcare associated definition by applying either Criterion A or B. In cases where attribution of the SAB is not clear, further consultation may be necessary.
- Cases where a known previous positive blood culture has been obtained within the last 14 days are excluded.

- If the same patient has a further positive blood culture more than 14 days after their last positive blood culture then this would be considered a second patient-episode of SAB for surveillance purposes. This includes haemodialysis patients.

Best practice recommends that 2 sets of blood cultures be collected from separate sites on the patient for identification of SAB. However, if the results are discordant, the episode should be investigated to confirm it is a true bacteraemia (i.e. *S. aureus* from a blood culture is rarely considered a false positive/contaminant).





Application of the SAB definition (continued)

The presence of contaminants

Staphylococcus aureus is a rare contaminant in a blood culture (identified in 1-2% of adult culture positive episodes) but can be more common in children (5-10%).⁶

A SAB will only be considered a contaminant and not reported in the surveillance data if:

- the clinical picture is unresponsive of infection AND either a repeat blood culture is negative AND / OR
- the clinical picture is unsupported and no *Staphylococcus aureus* targeted antimicrobial treatment is given.

Applying Criterion A

Incubating on admission

The episode is **not** counted as a healthcare associated infection if a *Staphylococcus aureus* positive blood culture is obtained from a patient more than 48 hours after admission, but there were documented clinical signs of staphylococcal infection on admission. Provided there is no evidence of an association with a prior admission or medical procedure received in hospital (as per Criterion B).

In order to make this determination, a consultation with the patient's medical officer and / or an infectious diseases physician is required. If there is significant uncertainty, then the episode should be classified as healthcare associated.

Occurs 48 hours or less after discharge

To ensure that all diagnosed cases of SAB that occur within 48 hours of discharge from an acute care hospital are included, all episodes of SAB diagnosed at a hospital will need to be investigated by appropriately trained staff. Unless fully integrated information technology systems are available that link to private and public facilities, information from the patient's history will need to be obtained to determine recent hospital discharge, and all hospitals should have robust systems in place to gather this information. Investigation is most effectively done contemporaneously whilst the patient is in hospital, and should not be limited to only information contained in the medical notes.



Applying Criterion B

These four criteria are used for those SAB that are detected within 48 hours of admission to hospital, as SAB that occur after this are almost always regarded as health care associated HA-SAB (unless the infection is deemed as incubating on admission).

Some hospitals / health services / jurisdictions may choose to collect key clinical information only for patients in the less than 48 hour subset of SAB. However, many sites find it useful to classify all health care associated SAB using the key clinical information (even those that present after 48 hours in hospital) according to these same criteria, and this is encouraged if capacity allows.

Some episodes of SAB may fulfil more than one of the four criteria for HA-SAB. As long as at least one criterion is met then the episode should be included in the surveillance for health care associated SAB if they have been in hospital less than 48 hours. Additional information may be required at a jurisdictional level for health care associated SAB.



Criterion B.1

Complication of indwelling medical device – an intravascular device or other device

An episode of a SAB should be regarded as a complication of an intravascular (**IV**) device (and therefore counted/reported as healthcare associated) if:

- an **intravascular catheter** was present up to 48 hrs prior to the SAB episode **and** there is no other identifiable focus of infection due to *Staphylococcus aureus*. NB. This does not mean that the IV line had to be in place for at least 48 hours.

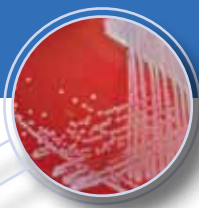
Note that an **introducer** used in IV procedures (e.g. in angiograms) is considered an IV line according to National Healthcare and Safety Network (NHSN) definitions⁴ and therefore a SAB occurring within 48 hours of a procedure using an IV introducer is attributed to this unless there is an identifiable focus of infection (likely due to *S. aureus*) at another site.

- For patients with **haemodialysis access devices** in place: A SAB should be attributed to such a device if there is clinical evidence of infection at the vascular access site **or** there is no other identifiable source of infection due to *S. aureus*.

An episode of SAB should be regarded as a complication of a **non-IV indwelling medical device** (and therefore is a healthcare associated SAB) if:

- The device was in place within 48 hours of the **SAB** and there is clinical or microbiological evidence of a *S. aureus* infection associated with the site of device insertion or an organ connected to the device.

Such devices include but are not limited to urinary catheters, percutaneous endoscopic gastrostomy (PEG) tubes, chest tubes, cerebro-spinal fluid (CSF) shunts, peritoneal dialysis catheters.



Applying Criterion B (continued)

Criterion B.2

An episode of SAB should be regarded as a complication of a surgical procedure (and therefore as a healthcare associated SAB) if:

- There is an infection that fulfils the surveillance criteria of a superficial or deep organ space surgical site infection (SSI) that is proven or likely to be due to *S. aureus*.
- In the presence of a surgically implanted device, the 30 day time limit is **extended to 1 year if a deep incisional / organ space infection related to the device is detected**. This recognises the possibility for delayed presentation of infections in this context. **Items classified as surgically implanted devices** include (but are not limited to) permanent pace makers, joint prostheses, nerve stimulators, breast implants, surgical mesh. For further detail on devices included refer to jurisdictional classifications.
- The episode of SAB should be allocated to the hospital / health service where the relevant preceding surgery / surgical manipulation occurred.
- In cases of recurrent surgical procedures, even if for recurrent infection, a SAB that meets the case definition should be allocated to the site where the most recent surgical procedure was undertaken (see example 13B).

Criterion B.3

Invasive instrumentation or incision within 48 hours

- If the time interval between invasive instrumentation or incision is more than 48 hours, there must be compelling evidence that the infection was related to the invasive device or procedure.
- If there have been multiple incisions or instrumentation, then the infection should be allocated to the most recent procedure, and the facility where this was performed. (Examples of invasive instrumentation include, but are not limited to: pacing wires, endoscopic retrograde cholangiopancreatography (ERCP), cardiac catheterisation).

Criterion B.4

Associated with neutropaenia caused by cytotoxic therapy

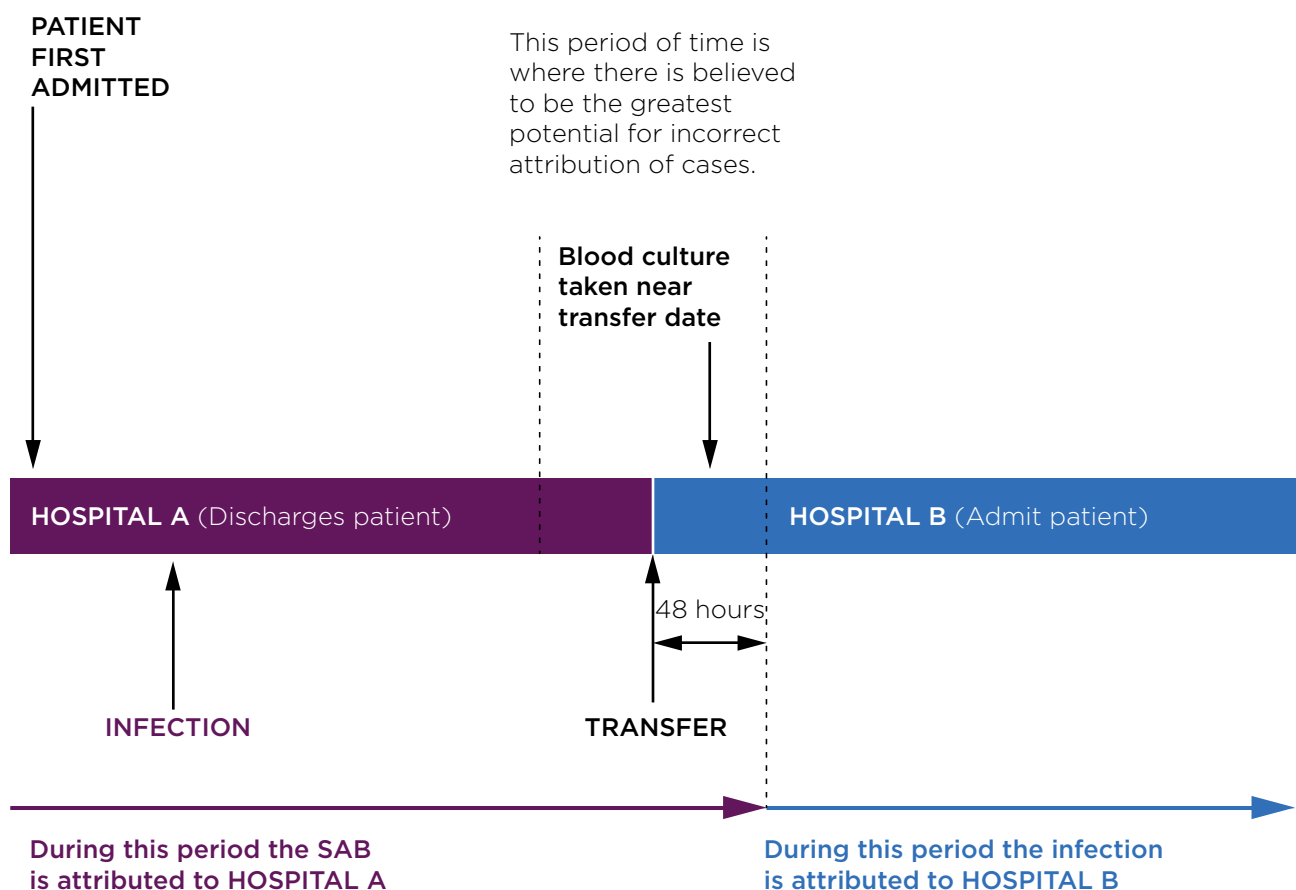
- This criterion includes drug related neutropaenia and does not include neutropaenia from other causes such as disease related neutropaenia.

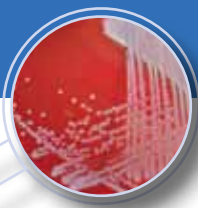


Allocation of SAB in event of transfer between health care facilities

- When an episode of bacteraemia is identified through infection control surveillance it is important to determine the source of the infection. When determining the source of infection consider if the healthcare associated infection can be associated with care provided at a different hospital (or other health care provider) other than the hospital detecting the infection.
- Transfer rules used to identify the location to which individual cases of confirmed bacteraemia should be attributed have been devised by the Centers for Disease Control and Prevention (CDC) in the US. If a case is identified within 48 hours of a patient being transferred from another facility then that case should be attributed to the transferring facility.
- The surveillance processes that are employed to collect the data should identify when blood cultures are collected in relation to transfer between hospitals or other health care providers. A diagrammatic representation of the issues is shown in Figure 1
- Good communication between healthcare facilities should be encouraged to allow correct attribution and to prevent cases being counted twice on surveillance systems of both the transferring hospital and the hospital to which a patient is transferred, or omission of reporting altogether. Poor communication in such circumstances could result in reporting of inaccurate infection rates, and could prevent investigation and understanding of causes of infection.

Figure 1: Diagrammatic representation of issues related to the attribution of correct facility for cases of health cases associated infection in transferred patients



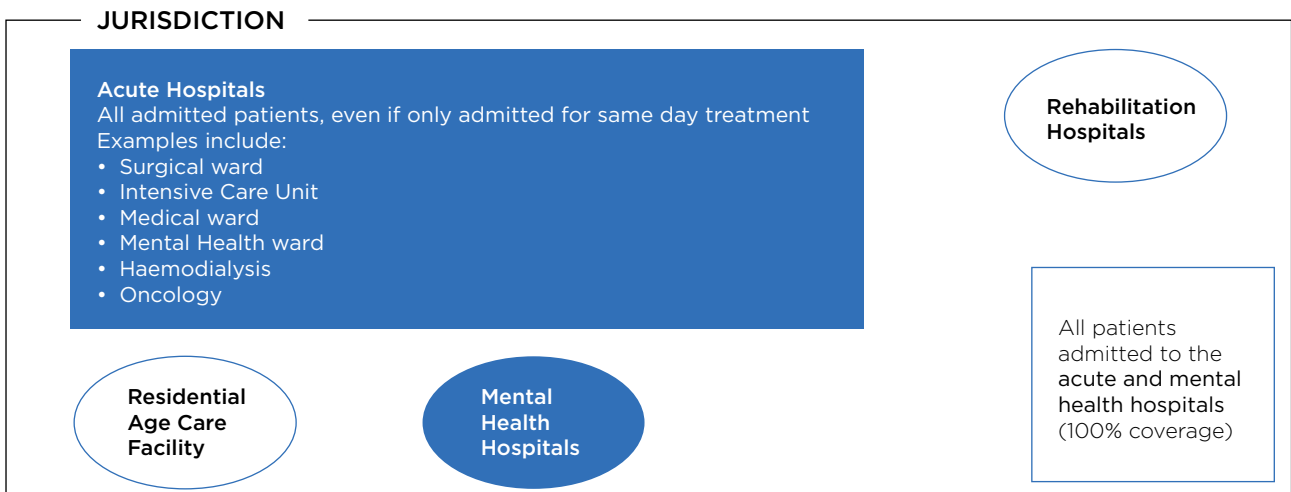


Selection of appropriate denominator for national surveillance

- The agreed denominator for reporting of SAB is patient days. For more detail refer to Appendix 3.
- It is important to recognise that the patient days reflect the hospitals included in the surveillance arrangements.
- For the purposes of reporting SAB data for the National Healthcare Agreement - **ALL** SAB associated with care in acute care public hospitals including mental health wards and hospitals should be included in surveillance arrangements, and therefore in both the numerator and denominator (see Model 1 – blue areas are covered by surveillance and patient days).
- For local hospital surveillance, refer to Jurisdictional surveillance units for denominator details.



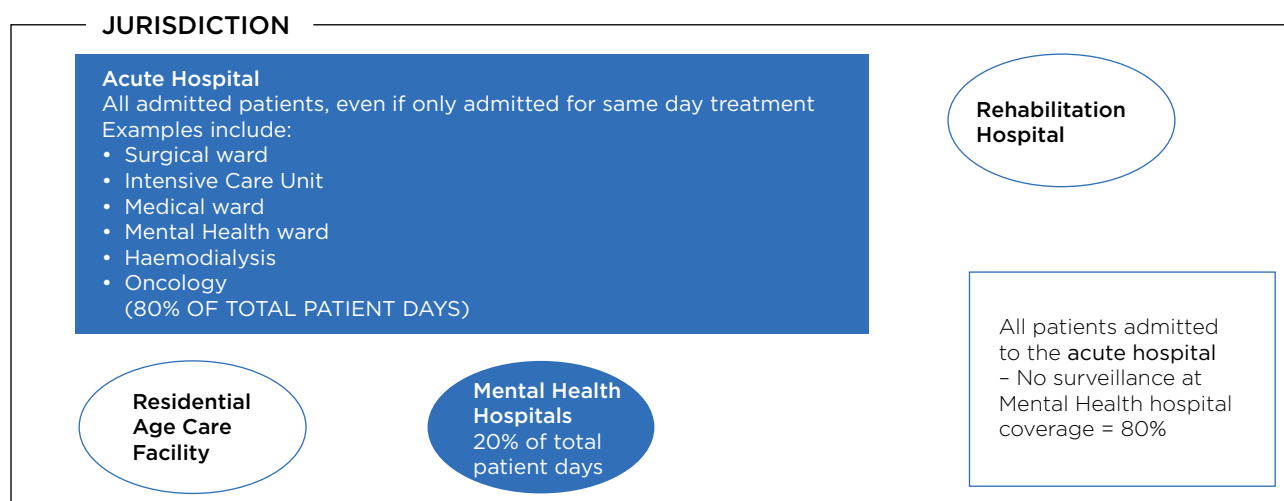
Model 1



Selection of appropriate denominator for national surveillance (continued)

- **However for most states and territories there is less than 100% coverage of acute care public hospitals.** Therefore if a hospital (or part thereof) is not included in the SAB surveillance arrangements, then the corresponding patient days should not be included in the denominator (see Model 2).

Model 2



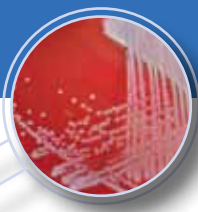
Note:

- Almost all the episodes of SAB will be diagnosed and associated with admitted patient care. However the intention is that SAB associated with non-admitted patient care is still included in the numerator. Because of the lack of a nationally agreed measure for recording outpatient occasions of service, the denominator remains patient days associated with admitted care.
- When data from different hospitals and / or jurisdictions is compared it should be noted that differences in admission practices and surveillance coverage will affect comparability of rates.
- Data variations can be calculated as follows.

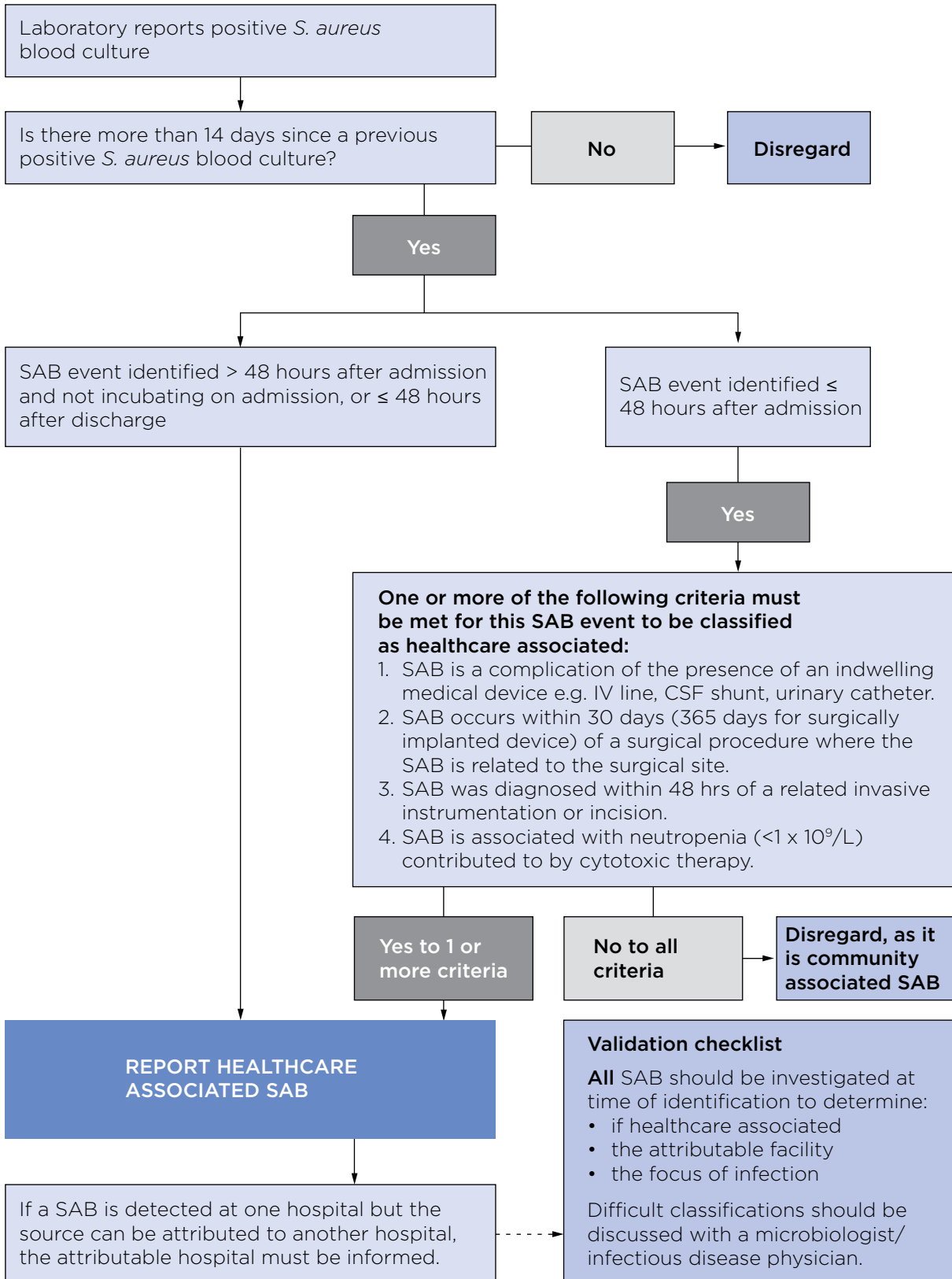
Coverage is calculated as follows:

Number of patient days included in SAB surveillance \div number of patient days for all public hospitals in the area of interest \times 100
(e.g. state/ territory/ Local Healthcare and Hospital Network.)

For additional information on definitions used to calculate SAB rates refer to Appendix 3.



Appendix 1: Flowchart of identification of healthcare associated SAB



Appendix 2: Examples of Application of SAB Case Definitions

Since commencing SAB data collection in Australian jurisdictions there have been several scenarios that required clarification. See below table for commonly encountered scenarios and application of current definitions:

- **Criterion A** – Healthcare associated: SAB greater than 48 hours after admission or within 48 hours of discharge
- **Criterion B** – Healthcare associated: SAB less than or equal to 48 hours after admission and one of the key clinical criteria met

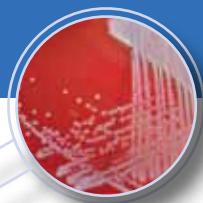
- **Community associated** – SAB less than or equal to 48 hours after admission and none of the key clinical criteria met

For each scenario, the following coding has been applied:

- **Hos A** = Acute hospital A
- **Hos B** = Acute hospital B
- **NA-HCF** = Non Acute healthcare facility – aged care; residential aged care; rehabilitation or a private external service provider

Scenarios	Details	SAB Criteria that apply	Attributable Facility / Community	Rationale for Classification
1	<ul style="list-style-type: none"> • SAB detected on admission to Hos A • Patient discharged from Hos A for less than 48 hours • Patient has intravascular line insitu associated with a previous episode of care in Hos A 	<p>Criterion B – Healthcare associated:</p> <p>SAB less than or equal to 48 hours after admission and one of the key clinical criteria met</p>	Hos A	Hos A reports SAB as per Criterion B.1
2	<ul style="list-style-type: none"> • Patient in Hos A for greater than 48 hours, no blood cultures collected • Patient with IV insitu transferred to Hos B, blood culture collected on admission – SAB detected 	<p>Criterion A – Healthcare associated:</p> <p>SAB greater than 48 hours after admission or within 48 hours of discharge</p>	Hos A	<p>Hos B infection control professional obligated to inform Hos A infection control professional of SAB</p> <p>Hos A required to report SAB as per Criterion A</p>
3	<ul style="list-style-type: none"> • Patient in Hos A for greater than 48 hours, SAB detected day 5 (AV fistula insitu – endocarditis) • Patient transferred to Hos B, blood cultures on admission negative • Subsequent blood culture (within 14 days of the SAB in Hos A, identified on day 5) SAB detected 	<p>Criterion A – Healthcare associated:</p> <p>SAB greater than 48 hours after admission or within 48 hours of discharge</p>	Hos A	<p>Hos A required to report initial SAB as per Criterion A</p> <p>Hos B not required to report because case was a known previous SAB within last 14 days (there must be 14 clear days for new SAB to be recorded)</p> <p>Note: this case highlights the importance of accurate clinical notes in transfer summaries, and collaboration between Hos A and B infection control professionals</p>

table continued on next page



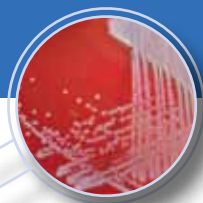
Appendix 2: Examples of Application of SAB Case Definitions (continued)

Scenarios	Details	SAB Criteria that apply	Attributable Facility / Community	Rationale for Classification
4	<ul style="list-style-type: none"> Patient presents to ED in Hos A within 48 hours of an invasive radiological procedure at Hos A – blood culture collected & SAB detected Patient directly transferred to Hos B for further management (not admitted to Hos A), no further blood cultures collected 	<p>Criterion B – Healthcare associated:</p> <p>SAB less than or equal to 48 hours after admission and one of the key clinical criteria met</p>	Hos A	<p>Hos A is required to report SAB as per Criterion B.3.</p> <p>Hos B not required to report SAB</p>
5	<ul style="list-style-type: none"> SAB detected in ED and patient admitted to Hos A. Patient had Total Hip Replacement (implant) 6 months ago in Hos A – SAB related to deep incisional /organ space infection 	<p>Criteria B – Healthcare associated:</p> <p>SAB less than or equal to 48 hours after admission and one of the key clinical criteria met</p>	Hos A	<p>Hos A required to report SAB as per Criterion B.2</p> <p>Less than 48 hours after admission and surgery greater than 30 days ago however SAB related to deep wound infection within 1 year of implant surgery</p>
6	<ul style="list-style-type: none"> Patient in Non Acute HCF for greater than 48 hours, blood culture collected & SAB detected Patient transferred to Hos A, no blood culture collected 	Community associated	Community	<p>SAB does not meet Criteria A or B.</p> <p>Non-acute HCF's are not required to report SAB cases.</p> <p>Recommend investigation for own Quality Improvement purposes</p>
7	<ul style="list-style-type: none"> Patient in Non Acute HCF for greater than 48 hours, blood culture collected & SAB detected. Patient transferred to Hos A, blood culture collected on admission & SAB detected 	<p>Community associated:</p> <p>SAB less than or equal to 48 hours after admission and none of the key clinical criteria met</p>	Community	<p>SAB does not meet Criteria A or B.</p> <p>Non-acute HCF's are not required to report SAB cases.</p> <p>Recommend investigation for own QI purposes</p> <p>Hos A notes case as Community-associated SAB and is not required to report</p>

Appendix 2: Examples of Application of SAB Case Definitions (continued)

Scenarios	Details	SAB Criteria that apply	Attributable Facility / Community	Rationale for Classification
8	<ul style="list-style-type: none"> • Patient in Hos A greater than 48 hours with PICC insitu. • Transfer to Hos B, failed vascath insertion on admission • Blood culture collected 8 hours after vascath attempt - SAB detected 	<p>Criterion B - Healthcare associated:</p> <p>SAB less than or equal to 48 hours after admission and one of the key clinical criteria met</p>	Hos B	<p>Hos B required to report SAB as per Criterion B.3</p> <p>SAB occurred following invasive instrumentation, the most recent of which occurred in Hos B</p>
9	<ul style="list-style-type: none"> • Patient in Hos A admitted with infected chronic leg ulcers that have isolated <i>S. aureus</i> • Patient has clinical signs of sepsis on admission • Blood culture taken 4 days after admission and SAB detected • SAB antibiotic susceptibilities same as wound swab 	<p>Community associated:</p> <p>SAB less than or equal to 48 hours after admission and none of the key clinical criteria met</p>	Community	<p>Hos A not required to report SAB as does not meet Criteria A or B</p> <p>Clinician involved in the management of the patient deems the SAB was incubating on admission</p>
9A	<ul style="list-style-type: none"> • Patient in Hos A admitted with a leg ulcer colonised with <i>S. aureus</i> • Patient has no clinical signs of sepsis on admission • Blood cultures taken 4 days after admission and SAB detected • SAB antibiotic susceptibilities same as wound swab 	<p>Criterion A - Healthcare associated:</p> <p>SAB greater than 48 hours after admission or within 48 hours of discharge</p>	Hos A	Hos A required to report SAB as per Criterion A
10	<ul style="list-style-type: none"> • Patient in Hos A fractured pelvis. SAB detected 24 hours after admission. PICC inserted and treated for 14 days. No surgical intervention • Admitted to Hos B 30 days later with infected pelvic fracture site. SAB detected on admission 	<p>Community associated:</p> <p>SAB less than or equal to 48 hours after admission and none of the key clinical criteria met</p>	Community	<p>Both episodes of SAB are within 48 hours of admission and neither meet Criteria A or B</p> <p>Both Hos A and B note Community Associated SAB</p>

table continued on next page

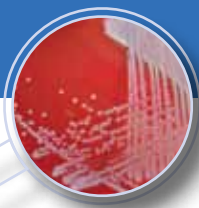


Appendix 2: Examples of Application of SAB Case Definitions (continued)

Scenarios	Details	SAB Criteria that apply	Attributable Facility / Community	Rationale for Classification
11	<ul style="list-style-type: none"> • Patient had aortic valve replacement and coronary artery bypass graft Hos A – May • Admitted to Hos B 6 weeks later with deep sternal wound infection growing <i>S. aureus</i> and SAB detected on admission • SAB antibiotic susceptibilities same as wound swab • Aortic valve normal on echocardiography 	<p>Healthcare associated:</p> <p>SAB less than or equal to 48 hours after admission and one of the key clinical criteria met</p>	Hos A	<p>Hos A required to report SAB as per Criterion B.2</p> <p>Hos B not required to report</p> <p>Deep wound infection greater than 30 days and not related to implant however clinician involved in the management of the patient deems the SAB as per Criterion B.2</p> <p>Hos B should notify Hos A for their information and records</p>
12	<ul style="list-style-type: none"> • Patient admitted to Hos A for drainage of ascites via catheter. Catheter removed and discharged 1 day later • Patient readmitted Hos A 3 days later with septic shock, SAB on admission • Ascites grows <i>S. aureus</i> • Insertion site not clinically infected • SAB antibiotic susceptibilities same as ascites specimen 	<p>Criterion B – Healthcare associated:</p> <p>SAB less than or equal to 48 hours after admission and one of the key clinical criteria met</p>	Hos A	<p>Hos A required to report SAB as per Criterion B.3</p> <p>Invasive instrumentation with compelling evidence that the infection was related to the invasive procedure (<i>S. aureus</i> in ascites fluid)</p>
13A	<ul style="list-style-type: none"> • Patient admitted Hos A for Total Hip Replacement – July • Patient admitted Hos B for deep incisional / organ space wound infection, SAB on admission – August • Transfer to Hos A for revision of Total Hip Replacement 	<p>Criterion B – Healthcare associated:</p> <p>SAB less than or equal to 48 hours after admission and one of the key clinical criteria met</p>	Hos A	<p>Hos A required to report SAB as per Criterion B.2</p> <p>Deep wound infection within 1 year of implant surgery</p> <p>Hos B should ensure Hos A is aware of the event</p>

Appendix 2: Examples of Application of SAB Case Definitions (continued)

Scenarios	Details	SAB Criteria that apply	Attributable Facility / Community	Rationale for Classification
13B	<ul style="list-style-type: none"> 10 months after revision surgery admitted Hos A with deep Total Hip Replacement infection, SAB detected on admission 	<p>Criterion B – Healthcare associated:</p> <p>SAB less than or equal to 48 hours after admission and one of the key clinical criteria met</p>	Hos A	<p>Hos A required to report SAB as per Criterion B.2</p> <p>Deep wound infection within 1 year of implant surgery. Report according to last invasive procedure</p>
14	<ul style="list-style-type: none"> Patient undergoing chemotherapy as an outpatient at Hos A via peripheral IV line Admitted to Hos B with febrile neutropaenia and SAB 10 days after last chemotherapy 	<p>Criterion B – Healthcare associated:</p> <p>SAB less than or equal to 48 hours after admission and one of the key clinical criteria met</p>	Hos A	Hos A required to report SAB as per Criterion B.4
15	<ul style="list-style-type: none"> Patient undergoing haemodialysis via AV fistula at Hos A Three days after last haemodialysis admission presents with fever and SAB 	<p>Criterion B – Healthcare associated:</p> <p>SAB less than or equal to 48 hours after admission and one of the key clinical criteria met</p>	Hos A	<p>Hos A required to report SAB as per Criterion B.1</p> <p>Haemodialysis access device (fistula) considered an indwelling device</p>
16	<ul style="list-style-type: none"> Pt presents to ED at Hos A with sepsis. SAB detected on admission PICC insitu – pain in arm & thrombosis on u / sound. PICC site grew <i>S aureus</i>. Last accessed for chemo by Hos B Investigation by Hos B – PICC inserted by Private External Provider. On presentation to Hos B post-insertion for chemo, dressing was loose / soiled and site red 	<p>Criterion B – HA SAB < 48hrs after admission</p>	NA-HCF (private external service provider)	<p>SAB meets Criterion B but private external service providers and hospitals are not required to report SAB cases.</p> <p>Hos B inform Private External Service provider for QI purposes</p>



Appendix 3: Definitions

Acute care public hospitals

The 2011 specifications for National Healthcare Agreement PI 39 – SAB (including MRSA) in acute care hospitals state that “acute care public hospitals are defined as all public hospitals including those defined as public psychiatric hospitals in the Public Hospital Establishment National Minimum Data Set.

The denominator is “number of patient days for acute care public hospitals (only for hospitals included in the surveillance arrangements)”.

AIHW Performance indicators for the National Healthcare Agreement Detailed Specifications for second reporting cycle: 2011 CRC report, Version 6, page 81

<http://meteor.aihw.gov.au/content/index.phtml/itemId/448298>

Establishment type

CODE R1 Acute care hospitals

Establishments which provide at least minimal medical, surgical or obstetric services for inpatient treatment and / or care, and which provide round-the-clock comprehensive qualified nursing service as well as other necessary professional services. They must be licensed by the state health department, or controlled by government departments. Most of the patients have acute conditions or temporary ailments and the average stay per admission is relatively short.

Hospitals specialising in dental, ophthalmic aids and other specialised medical or surgical care are included in this category. Hospices (establishments providing palliative care to terminally ill patients) that are freestanding and do not provide any other form of acute care are classified to R6.

<http://meteor.aihw.gov.au/content/index.phtml/itemId/269971>

Number of patient days

The recommended denominator for calculating monthly rates of HAI in Australian healthcare facilities is patient days. Patient days is a national standard, defined in the national health data dictionary and used for national reporting. Occupied bed days is a term commonly used by some states to express a similar concept to patient days. However, there is no national standard for calculating occupied bed days.

Patient days are calculated by counting the total patient days of those patients separated during the specified period, including those admitted before the specified period. Patient days of those patients admitted during the specified period who did not separate until the following reference period are not counted.

For example, Patient A is admitted on January 20 and discharged February 20. Patient A generates 0 patient days in the hospital’s January record, and 31 patient days for February (11 from the January period of the separation, and 20 in February).

The yearly variance between calculations of patient days and occupied bed days is minimal (less than 1%); however the monthly variation can be quite significant for smaller hospitals.

Contract patient days are included in the count of total patient days. If it is a requirement to distinguish contract patient days from other patient days, they can be calculated by using the rules contained in the data element: total contract patient days.

<http://meteor.aihw.gov.au/content/index.phtml/itemId/270045/meteorItemView/long>

Appendix 4: Comments and feedback on the Surveillance of SAB

Send feedback or comment on the Surveillance of SAB Guide to:

HAI@safetyandquality.gov.au

References

1. <http://www.safetyandquality.gov.au/internet/safety/publishing.nsf/Content/staphylococcus-aureus-bacteraemia-definition>
2. [http://www.safetyandquality.gov.au/internet/safety/publishing.nsf/Content/8ACDDE1B8F648482CA2573AF007BC2D4/\\$File/DD%20Set%20Spec%20ver3.pdf](http://www.safetyandquality.gov.au/internet/safety/publishing.nsf/Content/8ACDDE1B8F648482CA2573AF007BC2D4/$File/DD%20Set%20Spec%20ver3.pdf)
3. Collignon, P., Wilkinson, I., Gilbert, G., Grayson, ML., Whitby, RM., (2006) Health care-associated *Staphylococcus aureus* bloodstream infections: a clinical quality indicator for all hospitals, MJA, 2006;184:404-406.
4. Horan, TC., Andrus, M., Dudeck, MA, (2008) CDC/NHSN surveillance definition of health care-associated infection and criteria for specific types of infections in the acute care setting, American Journal of Infection Control 2008; 36:309-32. Current as from March 2009.
5. Collignon, P., Cruickshank, M., Dreimanis, D., (2009) *Staphylococcus aureus* bloodstream infections: an important indicator for infection control. Chapter 2: Bloodstream infections – an abridged version, Healthcare Infection 14(4) 165-171.
6. Personal communication from Dr J Ferguson, Hunter Area Pathology Service (NSW): internal data 2005-9.



**Australian Commission on
Safety and Quality in Health Care**

Level 7
1 Oxford Street
Darlinghurst NSW 2010

GPO Box 5480
Sydney NSW 2001

Phone: (02) 9126 3600
Fax: (02) 9126 3613

Email: mail@safetyandquality.gov.au

www.safetyandquality.gov.au