



TYPE 2 SURVEILLANCE MANUAL

Version 10

*Victorian Hospital Acquired Infection Surveillance System
Coordinating Centre*

*10 Wreckyn Street
North Melbourne, Victoria, Australia*

www.vicniss.org.au

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MISSION STATEMENT

The VICNISS Coordinating Centre aims to reduce the burden of hospital-acquired infections on the Victorian community. This will be achieved by establishing, implementing and supporting a standardised hospital infection surveillance system as a key component of infection control preventative strategies. VICNISS is committed to working in collaborative partnerships with Victorian health services and key stakeholders to achieve this aim.

PURPOSE AND USE OF THIS MANUAL

To provide information, definitions, and instructions for hospitals that participate in VICNISS to ensure standardisation of data collection, analysis and reporting procedures.

The VICNISS Type 2 Surveillance Manual is intended for use by infection control staff, hospital epidemiologists, and other personnel who are involved in surveillance activities in smaller Victorian public hospitals.

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1. VICNISS

1.1 Background

In April 2000, the Victorian Government released a 5-point infection control plan. One component of the Government's 5-Point Infection Control Strategy was the establishment of a surveillance system for hospital acquired infections.

The Report of the Expert Working Group on Surveillance of Hospital-acquired Infections was distributed for public comment in August 2000. The Expert Group recommended the establishment of an independent Coordinating Centre to provide advice and support for the VICNISS Program.

The VICNISS Coordinating Centre commenced operation in 2002 and has on staff Infection Control Consultants (ICCs), Infectious Diseases Physicians, an Epidemiologist, Information Technology Officer, and Education Program Developer.

1.2 Objectives of VICNISS

The objectives of VICNISS are:

- 1.2.1 To promote a standardised validated approach to hospital-acquired surveillance methods.
- 1.2.2 To provide, if possible, aggregated risk-adjusted data on hospital-acquired infections, which enables health services to benchmark against aggregated state and international data.
- 1.2.3 To promote the use of evidence based information to permit timely recognition of hospital-acquired infections for prevention, early intervention and cost containment.
- 1.2.4 To improve the way surveillance results are used in feedback for individual hospitals and across health services.
- 1.2.5 To promote the integration of hospital-acquired infection surveillance (including routine data collection) with strategic planning and continuous quality improvement systems for infection control.
- 1.2.6 To promote consumer participation in the development of hospital-acquired infection performance measure reporting.

1.3 Activities of the VICNISS Coordinating Centre

In order to meet the above objectives the VICNISS Coordinating Centre will, *in a timely acceptable manner*:

- 1.3.1 Assist hospitals in developing and implementing standardised validated surveillance methods.
- 1.3.2 Collect specified surveillance data from health care facilities.
- 1.3.3 Analyse and, if possible, report risk adjusted hospital-acquired infection aggregated data.

- 1.3.4 Conduct collaborative research studies to:
- Describe the epidemiology of emerging infections and pathogens;
 - Assess the importance of potential risk factors;
 - Further characterise hospital-acquired pathogens and mechanisms of resistance; and
 - Evaluate alternative surveillance and prevention strategies.
- 1.3.5 Provide reports on deliverables to all key stakeholders via the VICNISS Advisory Committee.

1.4 VICNISS Surveillance Programs

All Victorian public hospitals will be invited to participate in VICNISS. There are two main surveillance programs, as follows:

1.4.1 Type 1 Surveillance Program

Includes public hospitals with greater than 100 acute beds. (See the VICNISS Type 1 Surveillance Manual for further information on this program).

1.4.2 Type 2 Surveillance Program

Includes primarily rural public hospitals with less than 100 acute beds or low surgical throughput.

This Manual deals exclusively with Type 2 surveillance.

2. HOSPITAL-ACQUIRED INFECTION SURVEILLANCE^{1, 2}

2.1 What is Surveillance?

Surveillance is the systematic collection, management, analysis, interpretation and reporting of data for use in the planning, implementation and evaluation of health practice. Perhaps the most vital component is the capacity to feedback data to the persons who can undertake effective prevention and control activities. Data obtained from surveillance (for example of infectious diseases) underpin many public health activities.

In a hospital setting, information obtained from surveillance of hospital acquired infections (HAI) can be extremely important in the context of continuous quality improvement (CQI) as use of objective data is used to improve patient outcomes.

2.2 Why do we do Surveillance?

Surveillance of diseases, conditions or events can provide reliable data on which to base decisions. Surveillance data allows assessment of the size of the problem, trends over time, and can assist with planning and evaluating interventions. A good surveillance program should help to:

- Determine baseline rates of adverse events (including HAI);
- Detect changes in the rates or distribution of these events;
- Facilitate investigation of significantly increased rates of infection;
- Determine the effectiveness of Infection Control measures;
- Monitor compliance with established hospital practices;
- Evaluate changes in practice; and
- Identify areas where research would be beneficial.

2.3 Selecting Surveillance Targets

We can't possibly do surveillance on all health issues, so how do we choose?

In a hospital setting, infection control teams must tailor their surveillance activities to best match resources with priorities and institutional objectives.

Elements to be considered when choosing events for surveillance include:

The specific objectives of the surveillance system, i.e. what exactly do you want to know?;

- The frequency of the event;
- The cost or impact of the event;
- The potential for surveillance data to contribute to prevention activities;
- The health needs of the client or patient population; and
- The organisation's mission and strategic goals.

¹ Lee, T.B. & Baker-Montgomery, O.G. (2000). *Association for Professionals in Infection Control and Epidemiology (APIC) Text of Infection Control and Epidemiology*, USA.

² Pottinger, J.M., Herwaldt, L.A. & Perl, T.M. (1998). *Society for Healthcare Epidemiology of America, A Practical Handbook for Hospital Epidemiologists*, Slack Incorporated, USA.

The most important characteristic of any surveillance system is that the data that are collected allow you to answer the question you were asking.

Traditionally, surveillance for hospital-acquired infections was often “hospital-wide” surveillance, where data were collected on all identified infections in the facility. This method of surveillance has now largely been overtaken by more targeted surveillance methods that focus on at-risk groups. The advantages and disadvantages of these two surveillance methods for hospital-acquired infections are summarised in Table 2.1.

Table 2.1 Advantages and Disadvantages of Two Major Surveillance Strategies for Hospital-acquired Infections

Method	Advantages	Disadvantages
Traditional Hospital wide surveillance	<p>Collects comprehensive data on all infections in the facility.</p> <p>Establishes baseline infection rates.</p> <p>Identifies patterns of infections.</p> <p>Recognises outbreaks early.</p> <p>Increases visibility of ICC.</p>	<p>Expensive, labour intensive, and time-consuming.</p> <p>May yield excessive data.</p> <p>With limited resources, may leave insufficient time to analyse data and initiate changes.</p> <p>Some infections detected cannot be prevented.</p> <p>Overall infection rate not valid for inter-hospital comparison.</p>
Priority-directed site-specific surveillance	<p>Resource based methodology. Flexibility and adaptability for specific needs and problems.</p> <p>Can focus on infections with known control measures to reduce infection risk.</p> <p>Can determine valid denominators.</p> <p>For some measurements, availability of appropriate risk adjustment systems and external comparative data.</p>	<p>Collects data only for targeted patients or risks. Limited information about endemic rates.</p> <p>May miss clusters or outbreaks in non-surveyed areas or populations</p>

2.4 Essential Elements of Surveillance

This section describes the basic elements of surveillance of hospital-acquired infections.

2.4.1 Collection of Data

The CDC NNIS definitions are the most comprehensive and widely used definitions for hospital-acquired infections. VICNISS data collection is based on these definitions. **The use and correct application of these definitions is vital if the results of surveillance are to be compared between facilities and internationally.**

To ensure good, reliable data, the information being collected must be well defined and understood by all those involved, particularly when data is collected by more than one person or at different facilities and where the data are to be aggregated and/or compared. Other points for consideration include:

- Clear definition of both the *events* and the *population* under surveillance. For hospital-acquired infection surveillance, the *event* is an infection. The definition of an infection may be, for example, “a superficial or deep wound infection, but not a stitch abscess”. An example of a *population* under surveillance may be “all patients who had a hip replacement in July and who spent 24 hours or more in hospital”.
- Staff collecting data understand and apply these definitions consistently to ensure that, where an event or person does not meet the definition, they should be excluded.
- Methods of finding infections that are able to find as many relevant infections as possible. These are known as **sensitive** methods of case finding.
- Case finding infections must also be **specific** so that time and energy are not wasted collecting irrelevant data and that only true cases of infection are found. As an extreme example, you could examine every patient’s medical records for any indication of an infection and this usually involves using more than one source of data and information such as *patient based* sources such as medical records, clinical rounds and communication with staff; *laboratory based* sources such as pathology reports and antimicrobial susceptibility patterns and *other departments* such as Admissions, the Operating Suite and Outpatient clinics.

Post discharge surveillance

Post discharge surveillance is of increasing concern because of shorter lengths of stay in the acute care inpatient setting. It is estimated that between 12% and 84% of SSI are detected from discharge. However there is no consensus on which post discharge surveillance methods are the most sensitive, specific and practical. Although there are no standardised methods for this kind of surveillance, development of such systems is becoming increasingly important as without post discharge surveillance a significant percentage of infections may be missed.

Post discharge surveillance is currently not included in the VICNISS Type 2 program.

2.4.2 Management of Data

Data should be collected, organised and stored in systems that facilitate analysis and reporting. Computerisation can greatly assist with this process. Computerised data should be backed up regularly to reduce chances of losing data.

2.4.3 Analysis of Data

Surveillance systems need to incorporate appropriate analyses, often not relying on count data alone, but using methods that take into account the size of the population under study, as well as the time period of the surveillance. Using **ratios**, **proportions** and **rates**, rather than raw numbers to describe events often allows for comparisons between different time periods or facilities.

Examples of analyses relevant to hospital-acquired Infections:

A. Calculation of Infection Rates

The general formula for calculation of infection rates is $(x/y) \times k$ where

x = the number of infections (**the numerator**)

y = the number in the population at risk (**the denominator**)

k is a constant and is a multiple of 10.

The resulting rate should be a number greater than or equal to zero. For a proportion, k is 100, and the result can also be given as a percentage. Usually, for reporting device rates, k is 1000. The result is reported as a number of infections per 1000 device days.

For example, if in a sample of 120 total knee replacements there are four infections, the rate would be $4/120 \times 100$ or 3.33 percent. An alternative way to report this rate would be $4/120 \times 1000$ or a rate of 33.33 infections per 1000 operations.

B. Risk Stratification

Within any population, individuals exhibit variation. These differences may affect an individual's risk of infection.

For example, people with diabetes or obesity may be at a higher risk of infection than people without these conditions. When comparing populations, we often make attempts to adjust for these factors to make the comparisons fairer or more valid.

Stratification is a technique to control for differences in distribution of risk by subdividing a larger population into groups with similar attributes. For surveillance of some types of hospital-acquired infections, a method of achieving this is through use of a risk index. Individuals are given a score based on their estimated risk of infection relative to other individuals. Comparisons are then made between infection rates based on groups of individuals in the same risk category, who therefore have been deemed to have a similar level of risk.

C. Comparison of Rates

Comparison of infection rates for different time periods, for different hospitals or, less commonly, between individuals, should only be attempted in the following circumstances:

- Where rates have been calculated on groups stratified according to risk; and
- Where surveillance methods and definitions were uniform and consistently applied; and
- Where the sample size was sufficiently large to calculate a valid estimate of the infection rate (the required sample size depends on what the rate is expected to be, and can be calculated).

2.4.4 Feedback and Reporting of Data

The results of the analysis must be communicated to the persons who need the information and have the power to authorise changes. There is little point in carrying out surveillance if the data are not used to report on rates and to make changes where these are necessary. Regular reporting and feedback is a vital component of a successful surveillance system.

The VICNISS Coordinating Centre will analyse the data and report back to facilities within agreed timeframes. Further information regarding the data collection timetable can be obtained from the VICNISS website.

2.4.5 Surveillance Planning

When carrying out surveillance, it is useful to have a long term plan to ensure that the data collected will meet your requirements. When developing a long-term surveillance plan for your facility the following key questions should be addressed:

- A. *What are the priorities for hospital-acquired infection surveillance?*
- B. *How will the data be used?*
- C. *What patients should be included?*
 - Certain high-risk patients.
 - Patients undergoing certain operative procedures OR who are exposed to certain high-risk procedures.
 - Patients in certain areas of the hospital.
- D. *What kinds of data are needed?*
 - Data primarily on infections and their characteristics.
 - Data on the populations who are at risk.
 - Data that will permit the calculation of infection rates by risk index.
 - Data that will permit the calculation of device-associated infection rates
 - What time period should the data cover to provide the most useful information, e.g., one month; periodic intervals during the year; quarterly, semi-annually or annually; or continuous.
- E. *What resources are required?*
 - Personnel (Surveillance, clerical, data processing, other department).
 - Data sources, including both laboratory and patients records
 - Information technology.

Careful consideration of these issues should ensure that the data and the resulting analyses fulfil the purpose for which they were collected.

3. SURVEILLANCE IN SMALLER HOSPITALS

3.1 Introduction

The major component of surveillance for large hospitals performing high volumes of surgery and with Intensive Care Units is aimed at producing risk adjusted infection rates which can then be compared with aggregate rates. This type of surveillance is not appropriate for many smaller hospitals, as the numbers of infections and patients at risk of infection are too small to calculate valid and reliable infection rates.

For these reasons, a different approach is necessary in smaller hospitals. Appropriate surveillance programs for small hospitals are not well documented in the international literature, and in many ways Australia is in a unique situation with respect to the numbers of smaller and rural hospitals serving the population.

The approach being used by VICNISS is that surveillance of surgical patients and calculation of infection rates is only recommended for hospitals with sufficient surgical throughput, combined with alternative methods such as process surveillance and reporting of selected infections.

3.2 Surgical Site Infection Rates

This surveillance is used in Type 1 hospitals and may be suitable for some Type 2 hospitals. Data are collected on all patients undergoing certain types of surgery and these patients are monitored for infection following surgery. Risk factors such as ASA score, wound class and duration of operation are used to assign the patients into a risk category between 0 and 3 using a simple system based on the CDC NNIS (now NHSN) surveillance (see Section 5.10). Extreme caution must be exercised when interpreting rates based on small numbers of patients as a single infection can cause a potentially misleading increase in the infection rate.

3.3 Process Indicator Surveillance

One approach that can be used as an alternative to infection (or outcome) surveillance is process surveillance, which aims to monitor processes that have been demonstrated to affect outcomes, which in this case are infections.

The most effective surveillance monitors processes that have been shown to be most closely associated with the outcome. For example, correct administration of prophylactic antibiotics to surgical patients (see Section 5.1) has been shown to be effective in reducing the rate of surgical site infections. Therefore, for hospitals performing low volumes of surgery, it may be more appropriate to monitor the administration of antibiotics than to calculate an infection rate.

Other processes that have been demonstrated to be closely related to infection outcomes include handwashing, catheter insertion techniques and staff vaccination, such as Health Care Workers and Measles Vaccination (see Section 5.2), are based on these processes.

3.4 Reporting of Selected Infections and Related Events

Other approaches which are being used include reporting of events such as multi-resistant organisms, serious (deep or organ space) wound infections and bloodstream infections. In some cases these can be used to calculate a rate of infections using occupied bed days or another similar broad measure of throughput as a denominator. For example, infections caused by multi-resistant organisms (see Section 5.5), which should be a relatively rare event in a small hospital, can be reported and a rate of MRO infections per occupied bed days calculated. This can be useful in identifying clusters of these events at a single hospital or at a particular group of hospitals.

4. VICNISS SURVEILLANCE METHODOLOGY

4.1 Hospital Categories

Hospitals to participate in the Type 2 Surveillance Program have been divided into three categories: Small (1-14 acute beds), Medium (15-49 acute beds) and Large (50-100 acute beds).

The classification of the hospital groups is based on the following considerations:

- 4.1.1 The Large hospitals category enables some comparison to the SENIC study findings. In the landmark SENIC study there were seven sample categories according to bed-count including the combined 50-74 and 75-99 categories. Hospitals of less than 50 beds were excluded.
- 4.1.2 The Small and Medium hospitals categories are separated as 0-14 and 15-49 acute beds respectively to allow for comparable sample sizes whilst making a clear distinction between the two hospital categories according to performance of surgery and dedicated Infection Control EFT time. The Small hospitals do not perform much if any surgery and compared to the Medium hospital have limited dedicated Infection Control EFT.

4.2 Target Populations

Unless stated otherwise:

4.2.1 Patients

All single or multi day acute care patients aged ≥ 16 years.

The patient must not belong to one of the following patient groups:

- A. Patients in the Emergency Department.
- B. Patients on a psychiatry ward, that is, a ward providing care for patients whose primary condition is psychiatric.
- C. Patients on a physical medicine and rehabilitation ward that is a ward for patients whose primary reason for hospitalisation is to receive physical or rehabilitative therapy.
- D. Patients whose primary reason for admission is not an acute illness, such as those in a long-term facility skilled nursing care or domiciliary sections of the hospital.
- E. Patients seen as outpatients whether for observation, diagnosis or therapy.

4.2.2 Health Care Workers

All non-casual employees (including students) who are employed to work in the acute sector. A non-casual employee is one who has ongoing expectation of work and engages in a regular roster or pattern of employment.

Three sub-categories in relation to infectious hazards are given below. These categories are based on those outlined in the Australian Government Department of Health and Aging

(2004) *Infection control guidelines for the prevention of transmission of infectious diseases in the health care setting.*

A. *Clinical Contact*

a. Direct

This group has direct physical contact with patients and/or blood and body substances. Examples include:

- Medical practitioners, nurses and allied health practitioners
- Maintenance personnel who service clinical equipment
- Sterilisation services personnel
- Mortuary staff
- Cleaning staff
- Waste management personnel

b. Indirect

This group is less likely to have direct physical contact with patients and/or blood and body substances. They may be exposed to infections spread by airborne or droplet transmission but are unlikely to be at risk from blood borne diseases. Examples include:

- Catering staff
- Primary care reception staff and ward clerks
- Maintenance staff

B. *Non-clinical Contact*

This group has no greater exposure to infectious diseases than does the general public. Examples include:

- Clerical staff
- Gardening staff

C. Laboratory staff

Laboratories contain special risk factors because of the equipment used (e.g., centrifuges) and the possibility of exposure to high concentration of infectious agents generated by culture procedures

4.3 Surveillance Modules and Performance Indicators

Current **process indicator** surveillance modules are:

- Surgical Antibiotic Prophylaxis
- Health Care Workers and Measles vaccination

- Health Care Workers and Hepatitis B vaccination
- Peripheral Venous Catheter Use

Current **outcome indicator** surveillance modules are:

- Multi resistant organisms
- Bloodstream Infections
- Occupational exposures
- Surgical Infection Report
- Outpatient Haemodialysis Event
- Surgical Site Infection

The following Performance Indicators have been endorsed by the VICNISS Advisory Committee and the Department of Human Services. Hospitals that do not follow these performance indicators are requested to submit to the VICNISS Coordinating Centre documented reasons for this decision.

The VICNISS Coordinating Centre is required to report this information to the Department of Human Services.

1. **VICNISS Type 2 Surveillance Hospital Participation Indicators**

Required Surveillance Activities

Small Hospitals

- Multi Resistant Organism surveillance data - collect and submit to the VICNISS Coordinating Centre quarterly.
- Bloodstream infection surveillance data - collect and submit to the VICNISS Coordinating Centre quarterly.
- Occupational Exposure surveillance data - collect and submit to the VICNISS Coordinating Centre quarterly.
- Notification of Deep and Organ space surgical site infections to the VICNISS Coordinating Centre quarterly.

Medium Hospitals

- Multi Resistant Organism surveillance data - collect and submit to the VICNISS Coordinating Centre quarterly.
- Bloodstream infection surveillance data - collect and submit to the VICNISS Coordinating Centre quarterly.
- Occupational Exposure surveillance data - collect and submit to the VICNISS Coordinating Centre quarterly.
- Notification of Deep and Organ space surgical site infections to the VICNISS Coordinating Centre quarterly.

Large Hospitals

Outcome Indicator Modules

- Bloodstream infection surveillance data - collect and submit to the VICNISS Coordinating Centre quarterly.
- Occupational Exposure surveillance data - collect and submit to the VICNISS Coordinating Centre quarterly.
- Notification of Deep and Organ space surgical site infections to the VICNISS Coordinating Centre quarterly.

Process Indicator Modules

- Annual Surgical Antibiotic Prophylaxis module.
- Other process indicators optional.

2. VICNISS Type 2 Surveillance Data Quality Indicators

Data Quality Indicators

- Quarterly surveillance data submitted within 1 week of the required date (as notified by VICNISS Coordinating Centre).
- Complete organism data including antibiotic resistance patterns be submitted for all Multi Resistant Organism and bloodstream infections.

Inquiries regarding the Performance Indicators to Mr Clinton Dunkley Senior Program Advisor, Infection Control & Cleaning, Quality and Safety Branch, Department of Human Services. Ph: 9096 7324. Email: Clinton.Dunkley @ dhs.vic.gov.au.

4.4 VICNISS Surveillance Plans

Each hospital is requested to complete an Annual Surveillance Plan (See Appendix 7.1) according to the surveillance modules in Section 4.3. Hospitals are expected to follow the protocol for each of the selected calendar months in which the surveillance module is to be undertaken (See Section 5). When completing the Annual Surveillance Plan consideration needs to be given to the hospitals Strategic Plan and existing Infection Control resources.

Table 4.1 Examples of Annual Surveillance Plans

Example 1 Small Hospital Category

Surveillance Module	Months Please mark as appropriate							Year _____				
	J	A	S	O	N	D	J	F	M	A	M	J
Process Indicators												
2.Measles Vaccination												
3.Other												
MROs												
LC-BSIs												
Haemodialysis												
Surg Infectn Report												

Example 2 Medium Hospital Category

Surveillance Module	Months Please mark as appropriate							Year					
	J	A	S	O	N	D	J	F	M	A	M	J	
Process Indicators													
1.SurgAbProphylaxis													
2.Measles Vaccination													
MROs													
LC-BSI													
Surg Infectn Report													
Haemodialysis													

Example 3 Large Hospital Category

Surveillance Module	Months Please mark as appropriate							Year					
	J	A	S	O	N	D	J	F	M	A	M	J	
Process Indicators													
1.SurgAbProphylaxis													
3.Other													
MROs													
LC-BSIs													
Haemodialysis													
Surg Infectn Report													
Surgical Site Infection (Type 1 Module)													
6.HER													
8.HYST													
9.KPRO													

Example 4 Incorrect

Surveillance Module	Months Please mark as appropriate							Year					
	J	A	S	O	N	D	J	F	M	A	M	J	
MROs													
LC-BSIs													
Haemodialysis													
Surgical Site Infection (Type 1 Module)													
1. APPY													
2. CHOL													

4.5 Reporting Requirements

4.5.1 Data Fields

Each data field falls into one of three requirement categories for VICNISS surveillance.

Required = field must be completed on every completed form. These fields contain basic information needed to describe the infected patient.

For all data collection forms – if data is not available for a VICNISS **required field**, please write 'NA' for Not Available (although a specific tick box is not provided for this option). This will assist VICNISS to discern between fields accidentally missed and those for where data was not available.

Not required = the VICNISS program does not require the data and will not use the information in any analysis. These fields are determined by individual hospitals that wish to collect information of specific interest to themselves.

4.5.2 Data Transfer

Data transfer occurs via faxing hard copies of surveillance forms to the VICNISS Coordinating Centre. A data summary form (Appendix 7.2) outlining the previous month's data collection is to be faxed to the VICNISS Coordinating Centre each month.

5. VICNISS SURVEILLANCE MODULES

5.1 *Process Indicator: Surgical Antibiotic Prophylaxis*

This module is based on the *National Surgical Infection Prevention Medicare Quality Improvement Project* that has been developed by The Centers for Medicare and Medicaid Services and the Centers for Disease Control and Prevention.

VICNISS Procedure Groups to be included for this surveillance module include:

APPY, CHOL, COL, CSEC, GAST, HER, HPRO, HYST, KPRO, REC and VHYS (See www.vicniss.org.au/HCW/Type2/ICD10Codes.aspx for more detailed information).

5.1.1 *Aim*

To improve the selection, timing and duration of prophylactic antibiotics used to prevent infections at the surgical site.

The 'Best practice' standards are those recommendations outlined in the *Therapeutic Guidelines Antibiotic Version 12* (2003). The VICNISS performance indicator threshold for individual hospitals aiming to achieve these recommendations is 95%.

The *Therapeutic Guidelines Antibiotic Version 12* (2003) note:

'Prophylaxis is the use of antibiotics to prevent infections at the surgical site'.

'In general the antibiotics should be directed against the likely causative organism(s)'.

'The route of administration, timing and duration should be chosen to achieve effective plasma and tissue levels of drug(s) during and shortly after the surgical procedure when bacterial contamination is maximal'.

'The route of administration is usually parenteral, either IV or IM'.

'Intravenous antibiotics should be given as soon as the patient is stabilised after induction of anaesthesia, except for vancomycin, which requires a slower infusion that should be completed just prior to induction. Intramuscular antibiotics should be given at the time of premedication for surgery'.

'The critical time for successful prophylaxis is the 4 hours following implantation of organisms into a wound. In general a single dose of a parenteral drug is sufficient. Giving more than 1 or 2 doses post operatively is not advised except where specifically recommended'.

5.1.2 *Objectives*

To document the:

1. Proportion of patients given the recommended prophylactic antibiotics for the operative procedure of interest.
2. Proportion of patients who received prophylactic antibiotics within 2 hours before surgical incision.
3. Proportion of patients who received prophylactic antibiotics whose antibiotics were discontinued within 24 hours after surgery.

5.1.3 Methodology

The methodology is the prospective data collection of the first 50 consecutive operative procedures post the nominated commencement date that fit the inclusion criteria **only**.

In addition to the criteria outlined in 4.2 Target Populations.

A. Inclusion Criteria:

- Evidence of an operative procedure that may be classified in one of the above VICNISS Procedure Groups during admission (See www.vicniss.org.au/HCW/Type2/ICD10Codes.aspx for more detailed information).

B. Exclusion Criteria:

- Patient was on antibiotics at the time of admission, except for patients undergoing colon surgery who were on oral antibiotics. Oral antibiotics may be given to decontaminate the bowel prior to colonic surgery.
- Patient was being treated for an infection prior to the first surgical procedure of interest.
- Patient had all antibiotics start dates missing for antibiotics administered during hospitalisation
- Patient was given antibiotics more than 24 hours prior to surgical incision time except for patients undergoing colon surgery who were on oral antibiotics
- Colon surgery patients in which the ICD10-AM 3056301 (Revision of stoma of large intestine) was the only code that qualified the case for the sample

Objective 1: Prophylactic Antibiotic Choice

Numerator: All patients given the recommended prophylactic antibiotics for the operative procedure of interest.

Denominator: All patients who underwent a procedure listed in the eligible VICNISS Procedure Groups.

Objective 2: Prophylactic Antibiotic Timing

Numerator: All patients who receive antibiotics within 2 hours before surgical incision. (This also comprises all Caesarean Section patients who receive antibiotics immediately after clamping of the cord).

Denominator: All patients given prophylactic antibiotics who meet the general inclusion (and not exclusion) criteria only. Additional exclusion criteria for this Objective are:

- Patient undergoing colon surgery who are given prophylactic oral antibiotics only.
- Unable to determine if an antibiotic was started within 1 hour of surgery start time due to missing time values.

Objective 3: Prophylactic Antibiotic Duration

Numerator: All patients whose prophylactic antibiotics are discontinued within 24 hours of surgery end time.

Denominator: All patients given prophylactic antibiotics who meet the general inclusion (and not exclusion) criteria only. Additional exclusion criteria for this Objective are:

- Patient was diagnosed and treated for infection within 2 days of surgery end date.
- Patient had additional procedures of interest performed during this admission after the first procedure.
- Patient did not receive any antibiotics during this hospital admission.
- Patient did not receive any antibiotics before, during or within 24 hours after surgery end time (i.e.; patient did not receive any prophylactic antibiotics).
- Unable to determine if all prophylactic antibiotics were discontinued within 24 hours of surgery end time due to missing time values.

5.1.4 Data Collection Form

The above form is on the following pages.

Reporting instructions for each data field follows the form.

References

Therapeutic Guidelines Expert Working Party (2003) *Therapeutic Guidelines Antibiotic Version 12* Victoria.

Center for Medicare and Medicaid Services (CMS) and Centers for Disease Control and Prevention (2002) *National Surgical Infection Prevention Medicare Quality Improvement Project*.

Type 2 Surgical Antibiotic Prophylaxis Surveillance Data Collection Form

If you have any queries regarding the completion of this sheet please contact VICNISS

FADED DATA FIELDS = NOT REQUIRED BY VICNISS

DO NOT ATTACH PATIENT BRADMA LABEL

VICNISS REQUIRED FIELDS – Fax to VICNISS 03 9342 2633

Hospital Code Number: _____

Patient Identification

MRN (UR No.): _____	Sex: M <input type="checkbox"/> F <input type="checkbox"/>	DOB: / /
----------------------------	---	-----------------

Procedure Details

Procedure Date: / /	Surgeon (coded): _____	Anaesthetist (coded): _____												
VICNISS Procedure Group: <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">APPY <input type="checkbox"/></td> <td style="width: 25%;">CSEC <input type="checkbox"/></td> <td style="width: 25%;">HPRO <input type="checkbox"/></td> <td style="width: 25%;">REC <input type="checkbox"/></td> </tr> <tr> <td>CHOL <input type="checkbox"/></td> <td>GAST <input type="checkbox"/></td> <td>HYST <input type="checkbox"/></td> <td>VHYS <input type="checkbox"/></td> </tr> <tr> <td>COL <input type="checkbox"/></td> <td>HER <input type="checkbox"/></td> <td>KPRO <input type="checkbox"/></td> <td></td> </tr> </table>			APPY <input type="checkbox"/>	CSEC <input type="checkbox"/>	HPRO <input type="checkbox"/>	REC <input type="checkbox"/>	CHOL <input type="checkbox"/>	GAST <input type="checkbox"/>	HYST <input type="checkbox"/>	VHYS <input type="checkbox"/>	COL <input type="checkbox"/>	HER <input type="checkbox"/>	KPRO <input type="checkbox"/>	
APPY <input type="checkbox"/>	CSEC <input type="checkbox"/>	HPRO <input type="checkbox"/>	REC <input type="checkbox"/>											
CHOL <input type="checkbox"/>	GAST <input type="checkbox"/>	HYST <input type="checkbox"/>	VHYS <input type="checkbox"/>											
COL <input type="checkbox"/>	HER <input type="checkbox"/>	KPRO <input type="checkbox"/>												
Operative Procedure: _____		ICD 10 AM Code/s: _____												
Incision Start Time: _____		Wound Closure End Time: _____												
Endoscopic Approach: Yes <input type="checkbox"/> No <input type="checkbox"/>														
For 'HER' Procedure Group Only: _____		Prosthetic Material: Yes <input type="checkbox"/> No <input type="checkbox"/>												

Antibiotic Prophylaxis	Prophylactic Antibiotic: Yes <input type="checkbox"/> No [^] <input type="checkbox"/>
-------------------------------	---

[^] **If 'No', was Prophylaxis known to have been withheld because:** Yes No
 ▪ patient on antibiotics for treatment of infection related to surgery; **or**
 ▪ patient having joint revision, and antibiotics to be given after old prosthesis removed for culture

Antibiotic (Generic Name)	Time of Administration		Dose	Route	Antibiotic Continued >24hrs*
	Time Given	Tick box below if Time Given is not available			
		More than 1hr prior to Incision <input type="checkbox"/> Within 1hr prior to Incision <input type="checkbox"/> On Induction <input type="checkbox"/> After Incision <input type="checkbox"/> Not Recorded <input type="checkbox"/>			Y <input type="checkbox"/> N <input type="checkbox"/>
		More than 1hr prior to Incision <input type="checkbox"/> Within 1hr prior to Incision <input type="checkbox"/> On Induction <input type="checkbox"/> After Incision <input type="checkbox"/> Not Recorded <input type="checkbox"/>			Y <input type="checkbox"/> N <input type="checkbox"/>
Vancomycin: Yes <input type="checkbox"/> No <input type="checkbox"/>	Time Completed:	More than 1hr prior to Incision <input type="checkbox"/> Within 1hr prior to Incision <input type="checkbox"/> On Induction <input type="checkbox"/> After Incision <input type="checkbox"/> Not Recorded <input type="checkbox"/>			Y <input type="checkbox"/> N <input type="checkbox"/>

* If an 8 hourly 3 dose exceeds the 24 hours still tick N (No). It is recognised the intent is to cease within 24 hours

NON-VICNISS FIELDS (OPTIONAL) – DO NOT FAX THIS PAGE TO VICNISS

**Type 2 Surgical Antibiotic Prophylaxis
Surveillance Data Collection Form**

Patient Identification			
MRN (UR No.):		Ward:	
Surname:		Given Name:	
Address:		Suburb:	
Postcode:	Phone:		Deceased:

Comments:

Record Complete:

5.1.5 Data Field Instructions – VICNISS Required Fields

Hospital Code Number

Enter 3-digit code number assigned by the VICNISS Coordinating Centre.

MRN (UR Number)

Enter hospital medical record number or any unique identification (ID) number.

Enter the UR number in exactly the same manner each time, that is, if patient ID numbers contain spaces, dashes, leading zeroes or alphabetic characters, e.g., 000-123-456 A. Always be consistent in recording them.

Sex

Tick 'M' (Male) or 'F' (Female).

DOB

Enter the date of birth using the format dd/mm/yyyy.

Procedure Date

Enter the date that the operative procedure was performed using the format dd/mm/yyyy.

VICNISS Procedure Group

Tick the VICNISS Procedure Group that corresponds to the VICNISS Operative Procedure that the patient underwent according to the picklist given below:

APPY, CHOL, COL, CSEC, GAST, HER, HPRO, HYST, KPRO, REC and VHYS.

(See www.vicniss.org.au/HCW/Type2/ICD10Codes.aspx for more detailed information).

Operative Procedure

Enter the VICNISS Operative Procedure that was undertaken.

Incision Start Time and Wound Closure End Time

Enter the time for "Start Time" in HH:MM on incision.

Enter the time for "End Time" in HH:MM on closure of wound.

Endoscopic/Laparoscopic Surgery

Tick 'Yes' if the entire operative procedure was performed through an endoscopic approach.

Tick 'No' if the operation was open, or an endoscope was used during the operative procedure for diagnostic purposes only.

Tick 'No' if the operation began as a laparoscopic procedure and was subsequently converted to an open procedure.

Prosthetic Material (For the HER {Hernia} Procedure Group ONLY)

Tick 'Yes' if non-human derived foreign body (e.g., mesh) is permanently placed in the patient during the operative procedure, otherwise tick 'No'.

Prophylactic Antibiotic

Tick 'Yes' if preoperative/operative prophylactic antibiotics were given for the operative procedure, otherwise tick 'No'.

Preoperative/operative prophylactic antibiotics are administered **with the intent** of preventing infections at the surgical site. Do not include antibiotics that have been given as a course leading up to the procedure.

IV antibiotics should be given as soon as the patient is stabilised after induction of anaesthesia, except for vancomycin that requires a slower infusion, that should be completed just prior to induction.

IM antibiotics should be given at the time of premedication for surgery.

^ If 'No', (to Prophylaxis Antibiotic): Please tick 'Yes' if prophylaxis was known to have been withheld because the patient was on antibiotics for treatment of infection related to surgery; or the patient was having joint revision, and antibiotics to be given after old prosthesis removed for culture. Otherwise tick 'No'.

Antibiotic (Generic Name)

There are three spaces for entering multiple antibiotics. In the third space, tick 'Yes' or 'No' for Vancomycin.

Time of Administration

Enter the time each prophylactic antibiotic administration commenced as HH:MM.

Please provide exact 'Time Given' or tick a box from the picklist given below:

'More than 1hr prior to Incision', 'Within 1hr prior to Incision', 'On Induction' (this box should only be ticked if prophylactic antibiotics are given prior to the surgical incision), 'After Incision', 'Not Recorded'.

For 'Vancomycin' please provide 'Time Completed' or tick a box from the picklist above.

Dose

Enter the "Dose" in grams (g) for each prophylactic antibiotic administered.

Route

Enter the "Route" as 'IV', 'IM', 'Oral', or 'Other', for each prophylactic antibiotic administered.

Antibiotic Continued >24hrs

Tick 'No' if antibiotics ceased within 24 hours post procedure.

Tick 'Yes' if antibiotics are continued longer than 24 hours UNLESS this is due to an 8-hourly 3 dose order which exceeded 24 hours (it is recognised that the intent here is to cease within 24 hours). In these cases, tick 'No'.

5.2 **Process Indicator: Health Care Workers and Measles Vaccination**

Measles is a highly infectious acute viral illness. Transmission continues to occur in health care settings between health care workers and patients *partly* because recommendations for the vaccination of health care workers have not been consistently implemented.

5.2.1 **Aims**

The AIMS of this process indicator surveillance module are to:

- Assess Victorian public hospitals *policy* compliance with the National Health, Medical and Research Council (NHMRC) and Department of Human Services (DHS) recommendations for susceptible health care workers specifically in regard to Measles-Mumps-Rubella (MMR) vaccination.
- To determine current status of Health care workers susceptible to measles.

The NHMRC Recommendation is that:

MMR vaccine is to be given to all susceptible health care workers, provided there are no contraindications.

Measles is spread by respiratory droplets. The risk to Health care workers occurs therefore because of direct and indirect contact with patients and not in the handling of blood and blood products.

A susceptible person (to measles) is someone who cannot provide acceptable presumptive evidence of immunity to measles.

A person can be considered to have acceptable presumptive evidence of immunity to measles if they meet one of the following criteria:

- Documented evidence of immunity; or
- Documented evidence of laboratory-confirmed measles; or
- Persons born before 1966 (unless serosurveillance data shows otherwise); or
- Persons over 4 years of age and born during or after 1966 (unless serosurveillance data shows otherwise) who have documented evidence of receiving two doses of a measles containing vaccine; or
- Children aged 1-4 years who have documented evidence of having received one dose of a measles containing vaccine.
- **Note:** Documented evidence does not need to be presented for the survey.

5.2.2 Methodology

This audit is to be conducted over one calendar month.

- A. Section A data collection form is to be completed by a nominated person in each hospital.
- B. There are 2 options for completing the Section B data collection form:
 - a. If possible, use an established staff health system.

and/or:

- b. If an established staff health system (or the necessary data) is not available, the Section C data collection form may be used. It is to be distributed to **non-casual** acute care staff born during or after 1966 only. The hospital code number and a coded employee number should be inserted prior to distribution.

Sections A and B data collection forms are to be faxed to the VICNISS Coordinating Centre at the end of the surveillance period.

5.2.3 Data Collection Forms

Sections A, B and C data collection forms are on the following pages.

References:

Department of Human Services (DHS) (2000) *Immunisation Guidelines for Health Care Workers* 2nd edition

National Health and Medical Research Council (NHMRC) (2003) *The Australian Immunisation Handbook* 8th edition Canberra : Australian Government Publishing Services.

Section A – Hospital Measles Vaccination

Data Collection Form

Date: Month _____ Year _____

Hospital Code Number: _____

1. Does your hospital have a documented policy on administration of MMR vaccine to health care workers? *(please tick)*

Yes No
(If 'No', proceed to question 3)

2. Does this policy adhere to the NHMRC definitions as outlined (page 5–8)? *(please tick)*

Yes No
(If 'Yes', proceed to question 3)

3. What number of **non-casual** acute care staff born ≥ 1966 are employed at your hospital?

Table 1.

Occupational Group*	Total number of non-casual employed staff DOB ≥ 1966
Medical staff	
Nursing staff	
Allied Health staff	
Other staff who have direct or indirect clinical contact	
Laboratory Staff	
Total	

* See section 4.2 Target Populations for Health Care Worker definitions.

Section B – Hospital Measles Vaccination Summary

Data Collection Form

Date: Month _____ Year _____

Hospital Code Number: _____

For non casual acute care staff born ≥ 1966 only:

Documented evidence of receiving two doses of a measles containing vaccine or immunity or laboratory confirmed measles:

Table 2.

<i>Occupational Group</i>	Number of staff			Total
	Yes	No	Unsure	
Medical staff				
Nursing staff				
Allied Health staff				
Other staff who have direct or indirect clinical contact				
Laboratory staff				
Total				*

* Total should equal **Table 1** total (see Section A – Hospital Measles Vaccination Data Collection Form)

Section C – Health Care Worker Measles Vaccination Data Collection Form

Name: _____ **Date:** ____ / ____ / _____

Your hospital has elected to participate in a voluntary VICNISS project to determine the current status of Health Care Workers susceptible to measles. **This data collection form is confidential and will not be sent to the VICNISS Coordinating Centre.** The VICNISS Coordinating Centre (funded by the Department of Human Services) will be responsible for data analysis and reporting de-identified aggregate hospital data.

The data collection form, once completed is to be forwarded to: _____

Could you please answer the following questions as specified: *(please tick)*

1. Were you born before 1966? Yes No

If 'No', proceed to Question 2.

If 'Yes', you are not required to answer any further questions.

2. Do you have routine clinical contact with acute care patients?

Yes *Example: Medical and Nursing staff, Environmental Services*

No *Example: Administration*

If 'Yes', proceed to Question 4.

If 'No', proceed to Question 3.

3. Do you work in a pathology laboratory?

Yes

No

If 'Yes', proceed to Question 4.

If 'No', you are not required to answer any further questions.

4. Do you have **documented** evidence of receiving two doses of a measles containing vaccine? Yes No Unsure

If 'No', or 'Unsure' proceed to Question 5.

If 'Yes', you are not required to answer any further questions.

5. Do you have **documented** evidence of immunity or laboratory-confirmed measles? Yes No Unsure

Comments:

If you require further information please contact: _____

Thank you for your participation

5.3 Process Indicator: Health Care Workers and Hepatitis B Vaccination

5.3.1 Aim

- To assess Victorian public hospitals policy compliance with National Health, Medical and Research Council (NHMRC) recommendations.
- To identify uptake of Hepatitis B vaccine offered to at risk health care workers.

The Communicable Diseases Network of Australia (2004) recommends to immunise all health care workers, particularly those who have direct clinical contact and laboratory staff.

The NHMRC *Australian Immunisation Handbook* (8th edition, 2003) recommends:

- A. For unvaccinated adults a primary course of three doses. There should be an interval of one to two months between the first and second dose with a third dose at two to five months after the second dose.

- B. Post-vaccination serological testing four weeks after the third dose of hepatitis B. If adequate anti HBs levels (≥ 10 mIU/ml) are not reached following the third dose the possibility of HbsAg carriage should be investigated. Those who are HbsAg negative and do not respond should be offered further doses of vaccine. This can be given as either a fourth double dose or a further three doses at monthly intervals with testing four weeks later. Persistent non-responders should be informed about the need for HBIG within 72 hours of parenteral exposure to HBV

Those who have a documented history of a primary course of hepatitis B vaccine but in whom seroconversion status is unknown, should be given a single booster dose of the vaccine and tested for anti-HBs levels four weeks later. If the antibody level is < 10 mIU/ml, two further doses of hepatitis B vaccine should be given according to the catch up schedule and anti-HBs levels retested at least three to four weeks after the second dose.

- C. Routine booster doses are NOT given.
- D. Following significant exposure (percutaneous, ocular or mucous membrane) to blood or potentially blood contaminated secretions the source of the blood should be tested as soon as possible for HbsAg and a blood sample taken from the recipient for anti Hbs testing, unless a recent satisfactory anti HBs result is on record. If the recipient is anti HBs negative, and the source is HbsAg positive or cannot be identified and tested rapidly a single dose of HBIG should be given within 72 hours. Hepatitis B vaccine should be given intramuscularly into the deltoid or anterolateral thigh as soon as possible but within seven days of exposure. The second dose should be given one to two months after the first and the third dose six months after the first dose.

5.3.2 Methodology

- A. Section A data collection form to be completed by a nominated person in each hospital.
- B. There are 2 options for completing Section B data collection form:
- a. If possible use an established staff health system. **and/or**
 - b. If an established staff health system (or the necessary data) is not available Section C data collection form may be used.

Section A and B data collection forms only are to be faxed to the VICNISS Coordinating Centre at the end of the surveillance period

5.3.3 Data Collection Forms

Sections A, B and C data collection forms are on the following pages.

Section A – Hospital Hepatitis B Vaccination

Data Collection Form

Date: Month _____ Year _____

Hospital Code Number: _____

1. Does your hospital have a documented policy on administration of Hepatitis B vaccine to health care workers? *(please tick)*

Yes No
(If 'No', proceed to question 3)

2. Does this policy adhere to the recommendations as outlined (page 5–13)? *(please tick)*

Yes No

3. What number of non-casual staff are employed at your hospital?

Occupational Group	Number
Medical staff	
Nursing staff	
Allied Health staff	
Other staff who have clinical contact	
Laboratory staff	
Total	

Section B – Hospital Hepatitis B Vaccination Summary

Data Collection Form

Date: Month _____ Year _____

Hospital Code Number: _____

For ALL non-casual staff:

Primary course of Hepatitis B vaccination:

<i>Occupational Group</i>	Number of staff			Total
	Yes	No	Unsure	
Medical staff				
Nursing staff				
Allied Health staff				
Other staff who have direct or indirect clinical contact				
Laboratory staff				
Total				

Section C – Health Care Worker Hepatitis B Vaccination Data Collection Form

Name: _____ **Date:** ____ / ____ / _____

Your hospital has elected to participate in a voluntary VICNISS project to determine the current status of Health Care Workers susceptible to hepatitis B. **This data collection form is confidential and will not be sent to the VICNISS Coordinating Centre.** The VICNISS Coordinating Centre (funded by the Department of Human Services) will be responsible for data analysis and reporting de-identified aggregate hospital data.

The data collection form, once completed is to be forwarded to: _____

Could you please answer the following questions as specified: *(please tick)*

1. Please tick your Occupational group:

<i>Occupational Group</i>	<i>Tick</i>
Medical staff	
Nursing staff	
Allied Health staff	
Other	
Clinical contact staff member (Example, Ward clerk, Environmental Services staff)	
Laboratory staff	
Non-clinical contact staff member (Example, Gardener and Clinical staff)	

2. Could you please answer the following two questions:

a. Have you had a primary course (3 doses) of Hepatitis B vaccination? *(Please tick)*

Yes No Unsure

b. If **'Yes'**, after the third dose at about 4 weeks, did you have a blood test to check your anti HB level (or that the vaccinations were working)? *(Please tick)*

Yes No Unsure

Comments:

If you require further information please contact: _____

Thank you for your participation

5.4 Process Indicator: Peripheral Venous Catheter Use

The indicators found in this module are based on those recommendations outlined in the *Guidelines for the prevention of intravascular Catheter-related infections* from the Centers for Disease Control and Prevention (2002). This document can be accessed via <http://www.cdc.gov/mmwr/PDF/RR/RR5110.pdf>.

5.4.1 Aim

- To optimise the safety associated with the use of Peripheral Venous Catheters (PVCs).
- Short term PVCs are inserted in peripheral veins for vascular access. Although the incidence of local or bloodstream infections (BSIs) associated with PVCs is usually low, serious infectious complications produce considerable annual morbidity because of the frequency with which such catheters are used.

Indicators

Indicator 1: Guidelines

Numerator: Number of hospitals with PVC management guidelines.

Denominator: Number of participating hospitals.

A risk reduction strategy is the development (and distribution) of hospital PVC management guidelines.

Indicator 2: Guideline references

Numerator: Number of hospital PVC management guidelines (at least partly) based on the CDC (2002) *Guidelines for the prevention of intravascular Catheter-related infections*.

Denominator: Number of participating hospitals with PVC management guidelines.

Recommendations in the CDC (2002) *Guidelines for the prevention of intravascular Catheter-related infections* are categorised on the basis of existing scientific data, theoretical rationale, applicability and economic impact. An equivalent Australian document is not yet available.

Indicator 3: Guideline review date

Numerator: Number of hospital PVC management guidelines that have been developed or reviewed post August 2002.

Denominator: Number of participating hospitals with PVC management guidelines.

The CDC (2002) *Guidelines for the prevention of intravascular Catheter-related infections* were published in August 2002.

Indicator 4: Site selection

Numerator: Number of PVCs inserted into patients upper limbs.

Denominator: Number of PVCs inserted during the surveillance period.

In adults, an upper-limb instead of lower-limb site is preferred for catheter insertion. A catheter inserted in a lower-limb site should be changed to an upper-limb site as soon as possible.

Indicator 5: Site management

Numerator1: Number of PVCs for which a prophylactic topical antimicrobial ointment or cream is applied to the site.

Numerator2: Number of PVCs for which a sterile gauze or transparent semi permeable dressing is used to cover the site.

Denominator: Number of PVCs inserted during the surveillance period.

Prophylactic topical antimicrobials should NOT be routinely applied to PVC insertion sites.

Sterile gauze or transparent semi permeable dressings should be used to cover catheter site. A dressing should be replaced if it becomes damp, loosened or visibly soiled.

Indicator 6: Site inspection

Numerator: Number of PVCs for which a daily site inspection is recorded in the patient notes.

Denominator: Number of PVCs inserted during the surveillance period.

A catheter insertion site should be evaluated at least daily by palpation through the dressing to discern tenderness and by inspection if a transparent dressing is in use.

Indicator 7: Replacement / Removal

Numerator: Number of PVCs that are replaced at (or removed before) 72-96 hours.

Denominator: Number of PVCs inserted during the surveillance period.

In adults, PVCs should be replaced at least every 72-96 hours to reduce the risk of phlebitis or infection. A PVC should be promptly removed if it is no longer essential.

Indicator 8: Complications

Numerator: Number of PVCs for which a complication (phlebitis, infection or malfunctioning catheter) develops.

Denominator: Number of PVCs inserted during the surveillance period.

A PVC should be removed if the patient develops signs of phlebitis, infection or a malfunctioning catheter.

5.4.2 Methodology

- A. Section A survey is to be completed by a nominated person in each hospital.
- B. Section B data collection form is to be completed for each of the first 50 consecutive PVCs in-situ post the nominated commencement date.

This module applies to multi-day acute care patients only.

Patients whose PVC was inserted in another health care facility are excluded from this module.

Patients whose PVC was inserted in the Emergency Department are included in this module.

One patient may have multiple PVCs inserted. For these patients a separate data collection form needs to be completed for each insertion.

For large hospitals this section may be completed as a WARD (instead of hospital wide) based surveillance exercise.

Patients who are transferred to another health care facility with PVC still in-situ are excluded from this module.

There is no specified time interval to complete this module.

Ideally data for this module should be prospectively collected. Retrospective data collection is only recommended if a standardised form (or section on a nursing plan) used documents the required data. The Sections A and B data collection forms are to be faxed to the VICNISS Coordinating Centre at the end of the surveillance period.

Some Category 1A recommendations for catheter site care- cutaneous antisepsis are outlined on page 14- *CDC Guidelines for the Prevention of Intravascular Catheter-Related Infections*.

These recommendations were not included in the Peripheral Venous Catheter Use module only because they were considered too difficult to measure

5.4.3 Data Collection Forms

Sections A and B data collection forms are on the following pages. Reporting instructions for each data field for the Section B data collection form follow after that.

References

Centers for Disease Control and Prevention (2002) *Guidelines for the prevention of Intravascular Catheter-Related Infections*. MMWR 2002;51 (No.RR-10).

Mayhall GC (1999) *Hospital Epidemiology and Infection Control* 2nd edition Lippincott Williams & Wilkins, Philadelphia.

Section A – Peripheral Venous Catheter Management Guidelines

Data Collection Form

Date: Month _____ Year _____

Hospital Code Number: _____

Please tick boxes as applicable:

1. Does your hospital have management guidelines on the use of Peripheral Venous Catheters?

Yes No
(If 'Yes', proceed to question 2)

2. Are the CDC (2002) *Guidelines for the prevention of intravascular catheter-related infections* referenced as part of these hospital management guidelines? *(please tick)*

Yes No

Please list any other references: _____

3. Were these hospital management guidelines developed (or reviewed) post August 2002)? *(please tick)*

Yes No

Type 2 Section B – Peripheral Venous Catheter (PVC) Use Surveillance Data Collection Form

If you have any queries regarding the completion of this sheet please contact VICNISS

- NB:**
1. Complete form for 'multi-day patients' only.
 2. Patients whose PVC was inserted at another health care facility are excluded.
 3. Patients whose PVC was inserted in the Emergency Department are included.
 4. One patient may have multiple PVCs inserted. For these patients, a separate data collection form needs to be completed for each insertion.

FADED DATA FIELDS = NOT REQUIRED BY VICNISS

DO NOT ATTACH PATIENT BRADMA LABEL

VICNISS REQUIRED FIELDS – Fax to VICNISS 03 9342 2633		
Hospital Code Number:		
Ward:		
Patient Identification		
MRN (UR No.):	Sex: M <input type="checkbox"/> F <input type="checkbox"/>	DOB: / /
Peripheral Venous Catheter (PVC)		
Insertion Date: / /	Insertion Time:	
Removal Date: / /	Removal Time:	
Site Selection: Upper limb <input type="checkbox"/> Lower limb <input type="checkbox"/>		
Prophylactic Topical Anti-Microbial Ointment or Cream is Applied to Site: Yes <input type="checkbox"/> No <input type="checkbox"/>		
Sterile Gauze or Transparent Semi-permeable Site Dressing: Yes <input type="checkbox"/> No <input type="checkbox"/>		
Documented Daily Site Inspections:		
(Day 0 = Insertion Date) Day 1 <input type="checkbox"/> Day 2 <input type="checkbox"/> Day 3 <input type="checkbox"/> Day 4 <input type="checkbox"/> Day 5 <input type="checkbox"/>		
Reason for Removal:		
As per hospital protocol <input type="checkbox"/>		
No longer required for medical management <input type="checkbox"/>		
Phlebitis <input type="checkbox"/>		
Exit site infection <input type="checkbox"/>		
Primary BSI <input type="checkbox"/>		
Other <input type="checkbox"/> (please specify) _____		

NB: If patient is transferred to another health care facility with PVC still in-situ, please discard this form.

5.4.4 Data Field Instructions (for Section B)

Hospital Code Number

Enter 3 digit code number assigned by the VICNISS Coordinating Centre.

Ward

If applicable enter specific ward on which surveillance module is undertaken.

Patient Identification

MRN (UR No)

Enter hospital medical record number or any unique identification (ID) number.

Enter the UR number in exactly the same manner each time, that is, if patient ID numbers contain spaces, dashes, leading zeroes or alphabetic characters (e.g., 000-123-456 A), always be consistent in recording them.

Sex

Tick 'M' (Male) or 'F' (Female).

DOB

Enter the Date of Birth using the format dd/mm/yyyy.

Peripheral Venous Catheter (PVC)

Insertion Date/Time

Enter the PVC insertion date and time using the formats dd/mm/yyyy and HH:MM.

Removal Date/Time

Enter the PVC removal date and time using the formats dd/mm/yyyy and HH:MM.

Site Selection

Tick either 'Upper limb' or 'Lower limb'.

Prophylactic Topical Anti-microbial Ointment or Cream is Applied to Site

Tick 'Yes' if prophylactic topical anti microbial ointment or creams are applied to insertion site, otherwise tick 'No'.

Sterile Gauze or Transparent Semi-permeable Site Dressing

Tick 'Yes' if a sterile gauze or transparent semi-permeable dressing is in-situ, otherwise tick 'No'.

Documented Daily Site Inspections

Tick days for which daily site inspections were documented.

Reason for Removal

Tick either 'As per hospital protocol', 'No longer essential for medical management', 'Phlebitis', 'Exit site infection', 'Primary BSI', or 'Other'.

As per hospital protocol

For example: May occur when a PVC is resited after a specified time as recorded in the hospital protocol.

Phlebitis (Inflammation of a vein)

Symptoms may include erythema along a vein with or without edema, streak formation and palpable venous cord. The presence of tenderness alone does not constitute phlebitis.

Exit site infection

Exit site infections must meet at least one of the following criteria:

Criteria 1: Patient has purulent drainage at the exit site (i.e., skin-peripheral line juncture).

Criteria 2: Patient has at least two of the following signs or symptoms within 2 cm. of the skin exit site of the peripheral line with no other recognised cause: pain or tenderness, localised swelling, redness, heat, or in duration.

If a culture is performed there is isolation of a significant number of microorganisms (i.e., ≥ 15 colony forming units) by semiquantitative culture from exit site; if organisms are normal skin flora (e.g., coagulase negative staphylococci, micrococci, or diptheroids) they must be isolated in a pure culture (i.e., not mixed flora).

Primary BSI (bloodstream infection)

A primary BSI is one that arises without apparent local infection elsewhere due to the same microbe.

Catheter-related BSI is considered to be one type of a primary BSI. It is the isolation of the same microbe from blood cultures that is shown to be significantly colonising the catheter of a patient with clinical features of a BSI (most frequently manifested by fever alone but also possibly hypothermia, rigors, hypotension, tachypnea, tachycardia and confusion) in the absence of any other local infection caused by the same microbe that could have given rise to BSI.

Other

For example: When a patient dislodges a PVC or a PVC 'tissues'.

5.5 Multi Resistant Organism (MRO)

This surveillance module is primarily based on the Australian Infection Control Association (AICA) National Advisory Board (NAB) Surveillance definitions for Multi Resistant Organisms.

5.5.1 Aim

To provide a method for individual hospitals to measure infections caused by a selected MRO.

This surveillance module measures health care acquired infection (*not* colonisation) attributed to the MRO of interest for the surveillance period. Occupied bed days (OBDs) are used as the denominator so that different time periods within the same hospital can be compared.

The MROs to be initially included are methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant *Enterococcus* spp (VRE). At a later stage the MROs extended-spectrum beta-lactamase (ESBL) producing *Klebsiella pneumoniae* and multiple antibiotic resistant *Acinetobacter* spp may be included.

Most of these MROs are readily identified in microbiology laboratories and on laboratory reports. Surveillance across areas using multiple laboratories must ensure that each laboratory uses a common definition in their reports for these MROs.

5.5.2 Data Analysis

Three monthly surveillance periods (reports) will be analysed.

The following equation is used:

$$\frac{\text{No. of patients with a new MRO detection for the surveillance period} \times 10,000}{\text{Total OBDs for surveillance period} \quad 1}$$

The numerator is multiplied by 10,000 in order to reduce confusion as this removes decimal points in the final answer. The rate is now expressed as the number of patients with a new MRO detection per 10,000 OBDs.

5.5.3 Occupied Bed Days (OBDs)

OBDs (monthly) is the sum of all bed-days from the first day of the month to the last day of the month inclusive. It includes bed-days for the calendar period only. If a patient was either admitted or separated from the hospital during the period, the number of bed-days that will be included in the OBDs figure will be only those that were incurred during this period.

Non same-day OBDs are calculated by subtracting from the total OBDs the number of same-day separations.

5.5.4 Data Collection Form

A client form is to be completed if a selected MRO **infection** is detected. A MRO infection is defined as:

- A. A positive culture for the selected MRO associated with a sterile site isolate, or
- B. A positive culture for the selected MRO associated with a non-sterile site isolate where MRO specific antibiotic therapy was administered by a clinician.

Patients that are given empirical therapy for an MRO infection on the basis of clinical suspicion and no other evidence other than previous positive screening swabs should not be included.

A MRO **colonisation** is defined as a positive culture for the selected MRO associated with a non sterile site isolate where MRO specific antibiotic therapy was **NOT** administered by a clinician.

All **NEW** infections caused by the selected MRO, even if the patient is previously known to be MRO colonised are to be collected.

Only one infection with the selected MRO is to be counted for an individual patient during a single admission. If a patient is readmitted with an already counted MRO infection that has not been resolved, this infection is not recounted. If an infection occurs with another selected MRO during the same admission this should be separately counted.

The deidentified microbiology report should be forwarded with the completed form.

The above form is on the following pages.

Reporting instructions for each data field follows the form.

Reference:

Australian Infection Control Association (AICA) National Advisory Board (NAB) (2002) Surveillance definitions for multi resistant organisms, *Australian Infection Control* Vol 7(3).

Type 2 Multi Resistant Organism (MRO)* Surveillance Data Collection Form

If you have any queries regarding the completion of this sheet please contact VICNISS

NB: Complete form for NEW infections in ACUTE patients only (see Manual, Section 4.2)

DO NOT ATTACH PATIENT BRADMA LABEL

VICNISS REQUIRED FIELDS – Fax to VICNISS 03 9342 2633

Hospital Code Number:

Patient Identification

MRN (UR No.): _____ **Sex:** M F **DOB:** / /

Date Admitted to Hospital: / /

MRO Infection

Organism Name: MRSA
VRE **If VRE:** Van A Van B Other

MRO Detection: *Please tick one of the following boxes*

- MRO infection first detected at this hospital greater than or equal to 48hrs after (this) admission
 MRO infection first detected at this hospital within 48hrs of (this) admission
 Unresolved MRO infection previously detected at this hospital
 Unresolved MRO infection previously detected at another hospital (includes direct transfers)
 → If detected at another hospital, please list: _____

If available, **Specimen Collection Date:** / /

1. Sterile Site: → **Specific Site:** Blood Sterile body cavity
Tissue sample Other
(collected by aseptic technique)

Or:

2. Non Sterile Site AND MRO Specific Antibiotic Therapy is Administered by a Clinician:
→ **Specific Site:** Respiratory Wound
Urine Other

List Antibiotics Administered:

Organism & Sensitivity Matrix:

S = Sensitive, R = Resistant
I = Intermediate, U = Unknown

		Methicillin**				Fusidic Acid				Vancomycin				Rifampicin			
Gram positives		S	R	I	U	S	R	I	U	S	R	I	U	S	R	I	U
<i>Staphylococcus aureus</i>	<input type="checkbox"/>																
<i>Enterococcus faecalis</i>	<input type="checkbox"/>																
<i>Enterococcus faecium</i>	<input type="checkbox"/>																

Infection Confirmed with VICNISS Coordinating Centre: Yes No

Deidentified Microbiology Report Attached: Yes No

* A MRO infection is defined as:

1. A positive culture for the selected MRO associated with a sterile site isolate.
2. A positive culture for the selected MRO associated with a non sterile site isolate where MRO specific antibiotic therapy was administered by a clinician.

**Methicillin may be reported as equivalent Oxycillin or Flucloxacillin.

NON-VICNISS FIELDS (OPTIONAL) – DO NOT FAX THIS PAGE TO VICNISS

**Type 2 Multi Resistant Organism (MRO)
Surveillance Data Collection Form**

Patient Identification			
MRN (UR No.):		Ward:	
Surname:		Given Name:	
Address:		Suburb:	
Postcode:	Phone:		Deceased:

Comments:

Record Complete:

5.5.5 Data Field Instructions – VICNISS Required Fields

Hospital Code Number

Enter 3 digit code number assigned by the VICNISS Coordinating Centre.

MRN (UR Number)

Enter hospital medical record number or any unique identification (ID) number.

Enter the UR number in exactly the same manner each time, that is, if patient ID numbers contain spaces, dashes, leading zeroes or alphabetic characters, e.g., 000-123-456 A always be consistent in recording them.

Sex

Tick 'M' (Male) or 'F' (Female).

DOB

Enter the Date of Birth using the format dd/mm/yyyy.

Date Admitted to Hospital

Enter the date of admission using the format dd/mm/yyyy for the hospitalisation during which the infection was detected.

Other Healthcare Facility Admission

If the patient has been an inpatient in another healthcare facility (includes aged care facilities) during the last 6 months tick 'Yes', otherwise tick 'No'.

If 'Yes', list the healthcare facility.

Direct Transfer

Tick 'Yes' or 'No'.

Organism Name

Tick either MRSA or VRE (MRSE isolates should not be reported).

If VRE

Tick either Van A, Van B or Other.

Documented on Admission History

Tick 'Yes' if MRO infection is noted in 'admission history', otherwise tick 'No'.

Detected

To indicate how the infection was detected, tick either 'Admission', 'Post Discharge', 'HITH' or 'Readmission (within 6 months)' from the picklist.

Specimen Collection Date

Enter the date of the first isolate associated with the MRO detection using the format dd/mm/yyyy.

Detected \geq 48 hours After Admission

Tick 'Yes' if infection occurred more than 48 hours after hospital admission, otherwise tick 'No'.

Some MROS can be acquired from sources (e.g., community) outside of the hospital. The 48 hour rule can be applied. Nosocomial infections are defined as infections that occur more than 48 hours after hospital admission. For inpatient neonates such events occur at least 48 hours after delivery.

1. Sterile Site

Tick box if sterile site.

A sterile site is a significant isolate obtained from the blood stream, a normally sterile body cavity (peritoneum, pleural or pericardial space or CSF) or a tissue sample collected by aseptic means. It does not include isolates in the respiratory or urinary tracts. (Infections in these non sterile sites are counted if MRO specific antibiotic therapy is administered by a clinician.)

If a patient with a non sterile site MRO detection later develops a sterile site MRO detection during the same admission, this latter detection should be counted rather than the existing non-sterile site detection. Surveillance for non-sterile site MRO detections is inherently less accurate than detection of sterile site MRO detections.

Or:

2. Non Sterile Site AND MRO Specific Antibiotic Therapy is Administered by a Clinician

Tick box if Non Sterile Site.

List Antibiotics Administered

List antibiotics administered post specimen collection date.

Organism and Sensitivity Matrix

For the primary organism according to the antibiotics listed tick either Sensitive (S), Intermediate (I), Resistant (R) or Unknown (U) according to the picklist.

5.6 *Staphylococcus aureus* Bloodstream Infection (BSI)

This surveillance module is based (in part) on the Queensland Health model for Signal Infection Surveillance devised by the Centre for Healthcare Related Infection Surveillance and Prevention (CHRISP).

5.6.1 Aims

1. To provide a method for individual hospitals to count *Staphylococcus aureus* BSIs
2. To provide guidance on how to investigate information relevant to the causes and prevention of healthcare associated *Staphylococcus aureus* BSIs.

5.6.2 Data Collection Form

A data collection form is to be completed for all positive *Staphylococcus aureus* blood culture results.

Reporting instructions for each data field follows this form.

Healthcare acquired *Staphylococcus aureus* BSIs should be further investigated. A BSI 'Fact sheet' and 'Guide for Investigation' sheet are available to be utilised (see www.vicniss.org.au/HCW/Type2/Manual.aspx).

Type 2 *Staphylococcus aureus* Bloodstream Infection Surveillance Data Collection Form

If you have any queries regarding the completion of this sheet please contact VICNISS

DO NOT ATTACH PATIENT BRADMA LABEL

VICNISS REQUIRED FIELDS – Fax to VICNISS 03 9342 2633

Hospital Code Number: _____

Patient Identification

MRN (UR No.): _____

Sex: M F

DOB: / / /

General Details

Date Admitted to Hospital: / /

Infection Details

Specimen Collection Date: / /

Detected: During admission Post discharge surveillance HITH Readmission

Place of Acquisition: Healthcare associated* (*Please complete fields below*)
 Community associated (*No further fields to be completed*)

*If 'Healthcare associated', please specify:

1. Admission Status:

Inpatient (*Please complete fields below*) Non-inpatient (*No further fields to be completed*)

and

2. Focus of BSI:

Unknown Line associated** Organ site***

**If 'Line associated', please specify:

Device Type: Central line Peripheral line

Date Inserted: / / **Date Removed:** / /

Inserted By: (*staff type*) _____ **Where:** _____

Details about Insertion Documented in Patient's Medical Record: Yes No

***If 'Organ site', please **Specify Organ Site:** _____

Contributing Factors: Yes No ⇒ If 'Yes', please specify contributing factors:

1. Non-intravascular device ⇒ Please specify: _____

2. Procedure ⇒ Please specify: _____ ⇒ **Procedure Date:** / /

De-identified Microbiology Report Attached: Yes No

For Inpatient Health Associated BSIs only, an Investigation (or root cause analysis) was Undertaken: Yes No#

Further investigation is strongly recommended for all inpatient healthcare acquired *Staphylococcus aureus* BSIs. A BSI 'Fact sheet' and 'Guide for Investigation' sheet are available to be utilised (see www.vicniss.org.au/HCW/Type2/Manual.aspx).

Note: A *Staphylococcus aureus* BSI that recurs within 14 days of the original positive result is not counted as a new infection.

NON-VICNISS FIELDS (OPTIONAL) – DO NOT FAX THIS PAGE TO VICNISS

**Type 2 *Staphylococcus aureus* Bloodstream Infection
Surveillance Data Collection Form**

Patient Identification			
MRN (UR No.):		Ward:	
Surname:		Given Name:	
Address:			Suburb:
Postcode:	Phone:		Deceased:

Comments:

Record Complete:

5.6.3 Data Field Instructions – VICNISS Required Fields

Hospital Code Number

Enter 3 digit code number assigned by the VICNISS Coordinating Centre.

MRN (UR Number)

Enter hospital medical record number or any unique identification (ID) number.

Enter the UR number in exactly the same manner each time, that is, if patient ID numbers contain spaces, dashes, leading zeroes or alphabetic characters, e.g., 000-123-456 A. Always be consistent in recording them.

Sex

Tick M (Male) or F (Female).

DOB

Enter the Date of Birth using the format dd/mm/yyyy.

Date Admitted to Hospital

Enter the date of admission using the format dd/mm/yyyy for the hospitalisation during which the infection was detected.

Specimen Collection Date

Enter the date the specimen was collected using the format dd/mm/yyyy.

Detected

To indicate how the infection was detected, tick either 'Admission', 'Post Discharge', 'HITH' or 'Readmission'.

Place of Acquisition

Note: Maternally acquired BSIs are infections in a neonate that is acquired from the mother during delivery. These BSI types are not included in this surveillance module.

To indicate where the infection occurred, tick either 'Healthcare associated' or 'Community associated'.

1. Healthcare associated

The BSI must meet at least one of the following criteria:

- a. Acquired during hospitalisation and not present or incubating on admission;
- b. Is a complication of the presence of an indwelling medical device (e.g., IV catheter, urinary catheter);
- c. Occurs within thirty days of a surgical procedure, where the BSI is related to the Surgical Site Infection;

- d. An invasive instrumentation or incision related to the BSI was performed within 48 hours before onset of the infection. If the time interval was longer than 48 hours, there must be compelling evidence that the infection was related to the invasive device or procedure; or
- e. Associated with neutropænia ($<1 \times 10^9/L$) contributed to by cytotoxic therapy.

If 'Healthcare associated', please specify **Status**

Healthcare associated events are subcategorised as being either *Inpatient associated* OR *Non-Inpatient-associated*. To indicate whether the patient was an inpatient or not, tick either 'Inpatient' or 'Non-inpatient'. Inpatient events are those that occur more than 48 hours after hospital admission or within 48 hours of discharge.

2. **Community associated**

These BSIs are when the episode is not healthcare associated and manifests within 48 hours after admission.

The remaining fields are for inpatient healthcare associated BSIs only:

Note: Only inpatient BSIs from the hospital are to be investigated. Generally, if a positive result is detected within 48 hours of admission and the patient has been an inter-hospital transfer or a recent admission at another facility, then investigation as a signal infection may not be required.

Focus of BSI

To indicate the principal site of infection, tick either 'Unknown', 'Line associated', or 'Organ site'.

1. **Unknown**

For example, disseminated infections such as those caused by *Neisseria meningitides*.

2. **Line associated (Intravascular catheter)**

This requires an intravascular catheter to be present within 48 hours of the episode. The BSI must not be related to an infection at another site.

If 'Line associated', please specify:

Device Type

To indicate the type of line inserted, tick either 'Central line' or 'Peripheral line'.

Note: Central lines are vascular access lines that terminate in or close to the heart or one of the great vessels. The aorta, vena cava (superior and inferior) brachiocephalic veins, internal jugular veins, subclavian veins, external iliac veins and common femoral veins are considered great vessels. If uncertain of central placement confirm by radiological verification. Examples of central lines are Swan Ganz, PICCs and CVCs (both tunneled and non tunneled). Excluded are midlines.

Date Inserted

Enter the date the line was inserted using the format dd/mm/yyyy.

Date Removed

Enter the date the line was removed using the format dd/mm/yyyy.

Inserted By

Enter the occupational category of the staff member who inserted the line. For example, nurse, doctor, medical student, etc.

Where

Enter the insertion site location. For example, upper limb, lower limb, chest, etc.

Details about Insertion Documented in Patient's Medical Record

Tick either 'Yes' or 'No'.

3. Organ site

This category is to be used when, at the time of presentation there is clinical or bacteriological evidence that the BSI arose from a specific organ site.

It is suggested that the organ sites be categorised into systems or anatomical areas as listed below.

- Bone and joint
- Cardiovascular (includes endocarditis, arterial or venous infection, myocarditis, pericarditis and mediastinitis)
- Central nervous system
- Gastrointestinal (includes gastroenteritis, enterocolitis, peritonitis and other intra-abdominal sources other than liver and biliary tract)
- Genital tract
- Head and neck
- Hepatobiliary
- Respiratory tract
- Skin and soft tissue
- Urinary tract
- Other

If 'Organ site', please specify:

Contributing Factors

The presence of a non-intravascular device or occurrence of a procedure that is considered to be a *contributing factor* to the episode should be recorded as a sub category. Tick either 'Yes' or 'No'.

If 'Yes', specify contributing factors:

1. Non-intravascular device or Procedure:

Tick either 'Non-intravascular device' or 'Procedure'.

2. **Non-intravascular device or Procedure Specific Type:**

Enter the specific type of 'Non-intravascular device' or 'Procedure'.

3. **Procedure Date:**

For 'Procedure', also enter the date the procedure was performed using the format dd/mm/yyyy.

Non-intravascular device associated BSIs

When a non intravascular device or prosthesis (e.g., Cerebro Spinal Fluid (CSF) shunt, prosthetic joint) is present at the suspected organ site focus within 48 hours of the BSI and there is compelling clinical or microbiological evidence that it is the focus of the infection, the presence of that device should be recorded.

Procedure-associated BSIs

For each BSI where an organ site focus is identified, it may be recorded whether an invasive medical, surgical or anaesthetic procedure (e.g., Endoscopic Retrograde Cholangiopancreatography (ERCP), arthroscopy etc.) within 48 hours (or within 30 days if an surgical site infection (SSI) is the focus) of the event was a significant contributing factor. If the time interval was longer than 48 hours (or 30 days for an SSI), there must be compelling evidence that the BSI was related to the procedure.

5.7 Occupational Exposure

This surveillance module is based in part on the Centers for Disease Control *Workbook for Designing, Implementing and Evaluating a Sharps Injury Prevention Program* and NSW Health *Infection Control Program Quality Monitoring Indicators User manual*.

5.7.1 Aim

To provide a method for individual hospitals to measure reported occupational exposures. Occupied bed days (OBDs) are used as the denominator so that different time periods within the same hospital can be compared.

5.7.2 Data Analysis

Three monthly surveillance periods (reports) are analysed.

The following equation is used:

$$\frac{\text{No. of (parenteral or non-parenteral) reported occupational exposures} \times 10,000}{\text{Total OBDs for surveillance period}} \quad 1$$

The top number is multiplied by 10,000 in order to reduce confusion as this removes decimal points in the final answer. The rate is now expressed as the number of occupational exposures per 10,000 OBDs.

5.7.3 Occupied Bed Days

OBDs (monthly) is the sum of ALL bed-days from the first day of the month to the last day of the month inclusive. It includes bed-days for the calendar period only. If a patient was either admitted or separated from the hospital during the period, the number of bed-days that will be included in the OBDs figure will be only those that were incurred during this period.

5.7.4 Data Collection Form

An incident form is to be completed if an occupational exposure is reported. The form is on the following pages. Reporting instructions for each data field follows the form.

Optional forms are also provided on the VICNISS website for those hospitals that wish to collect additional data. This data is currently not required by the VICNISS Coordinating Centre for analysis.

Type 2 Occupational Exposure Surveillance Data Collection Form

If you have any queries regarding the completion of this sheet please contact VICNISS

NB: Form to be completed for ALL INPATIENT sources only (including Emergency Department)

DO NOT ATTACH PATIENT BRADMA LABEL

VICNISS REQUIRED FIELDS – Fax to VICNISS 03 9342 2633

Hospital Code Number:

Employee Number:

Occupation

Categorisation of Health Care Worker:

Clinical Contact* Non Clinical Contact Laboratory Staff

*If 'Clinical Contact', please specify **Occupational Category:**

Medical Nurse Allied Health Other ⇒ If 'Other', please specify: _____

Exposure Details

Date of Exposure: / /

Location where Exposure Occurred:

Inpatient Ward Emergency Department High Dependency Unit
Operating Theatre Dialysis Unit Pathology/Clinical Laboratories
Other ⇒ If 'Other', please specify: _____

Type of Exposure: Parenteral Non-parenteral Human bite

Type of Fluid or Material:

Blood/blood products Bloodstained Non-bloodstained Visibly bloody solution

Source Information

Source Individual Identified: Yes* No

*If 'Yes', please specify:

1. Category of Source Individual:

Acute care inpatient Aged care inpatient Other ⇒ If 'Other', please specify: _____

and

2. Serostatus of Source Individual:

HIV Antibody:	Positive <input type="checkbox"/>	Negative <input type="checkbox"/>	Refused <input type="checkbox"/>	Unknown <input type="checkbox"/>
HCV Antibody:	Positive <input type="checkbox"/>	Negative <input type="checkbox"/>	Refused <input type="checkbox"/>	Unknown <input type="checkbox"/>
HbsAg:	Positive <input type="checkbox"/>	Negative <input type="checkbox"/>	Refused <input type="checkbox"/>	Unknown <input type="checkbox"/>

NON-VICNISS FIELDS – DO NOT FAX THIS PAGE TO VICNISS
INTERNAL HOSPITAL/HEALTH SERVICE USE ONLY

**Type 2 Occupational Exposure
 Surveillance Data Collection Form**

Exposed Employee			
Identification Number:	Ward:		
Surname:	Given Name:		
Address:		Suburb:	
Postcode:	Phone:		

Comments:

Record Complete:

5.7.5 Data Field Instructions – VICNISS Required Fields

Hospital Code Number

Enter 3 digit code number assigned by the VICNISS Coordinating Centre.

Identification Number

Enter unique identification number in exactly the same manner each time. This unique identification number must be able to be used if necessary to re-identify the employee to whom the data relates.

Occupation

Categorisation of Health Care Worker

See section 4.2 Target Populations for definitions of Health Care Worker categorisations.

Tick either 'Clinical Contact', 'Non Clinical Contact', or 'Laboratory Staff'.

Occupational Category

If 'Clinical Contact' is ticked as the Categorisation of Health Care Worker, please tick either 'Medical', 'Nurse', 'Allied Health', or 'Other'. If 'Other', please specify.

Exposure Details

Date of Exposure

Enter the date of exposure using the format dd/mm/yyyy.

Location where Exposure Occurred

Tick either 'Inpatient Ward', 'Emergency Department', 'High Dependency Unit', 'Operating Theatre', 'Dialysis Unit', 'Pathology/Clinical Laboratories' or 'Other'. If 'Other' please specify.

'Inpatient Ward' includes nurseries.

'Intensive Care Units' may be classified as High Dependency Units.

'Dialysis Units' include haemodialysis and peritoneal dialysis.

Type of Exposure

Tick either 'Parenteral', 'Non-parenteral' or 'Human bite' exposure

Parenteral Exposure

Piercing of skin or mucous membrane with a contaminated sharp. Contaminated sharp means any contaminated object that can penetrate the skin including but not limited to needles, scalpels, broken glass, broken capillary tubes and exposed ends of dental wires.

OR Non-parenteral exposure

Eye, mouth, other mucous membrane or non-intact skin contact with blood or other potentially infectious materials that results from the performance of an employees duties.

OR Human bite

Type of Fluid or Material

Tick either 'Blood/blood products', 'Bloodstained', 'Non-bloodstained' or 'Visibly bloody solution' (e.g., water used to clean a blood spill).

Source

Source Individual Identified

Tick either 'Yes' or 'No'.

If 'Yes', please specify:

1. Category of Source Individual

Tick either 'Acute care patient', 'Aged care patient', or 'Other'. If 'Other', please specify.

'Acute care patients' see Target Population, section 4.2.1.

'Aged care patients' (low or high level) who are temporarily admitted to an acute bed are ticked as an acute care patient.

and

2. Serostatus of Source Individual

Tick either 'Positive', 'Negative', 'Refused' or 'Unknown' for HIV Antibody, HCV Antibody and HbsAg.

5.8 Surgical Infection Report

This surveillance module is based on the:

1. Centers for Disease Control and Prevention National Healthcare Safety Network system.
2. Queensland Health Centre for Healthcare Related Infection Surveillance and Prevention Signal Infection Surveillance model.

5.8.1 Aims

1. To provide a method for individual hospitals to count *deep incision* and *organ space surgical site infections* (SSIs)
2. To provide guidance on how to investigate information relevant to the causes and prevention of *clean or clean contaminated deep incisional and organ space SSIs*.

5.8.2 Data Collection Form

A data collection form is to be completed for all 'inhouse' and 'inherited' deep incisional and organ space SSIs.

A SSI is classified as:

1. 'Inhouse' if the surgical procedure was performed at the reporting hospital.
2. 'Inherited' if the surgical procedure was performed at another hospital.

The definitions for these Surgical Site Infections are outlined in Section 5.8.4.

This form is available on the following pages.

Reporting instructions for each data field follows the form.

'In-house' clean or clean contaminated deep incisional and organ space SSIs should be further investigated. An SSI 'Fact sheet' and 'Guide for Investigation' sheet are available to be utilised (see www.vicniss.org.au/HCW/Type2/Manual.aspx).

Type 2 Surgical Infection Report Surveillance Data Collection Form

If you have any queries regarding the completion of this sheet please contact VICNISS

FADED DATA FIELDS = NOT REQUIRED BY VICNISS

DO NOT ATTACH PATIENT BRADMA LABEL

VICNISS REQUIRED FIELDS – Fax to VICNISS 03 9342 2633

Hospital Code Number:

Patient Identification

MRN (UR No.):

Sex: M F

DOB: / /

General Details

Date Admitted to Hospital: / /

Procedure Details

Procedure Date: / /

Surgeon (coded):

Anaesthetist (coded):

Procedure performed at above listed hospital code number: Yes No

If 'No', **Where was the procedure performed:**

VICNISS Procedure Group:

Procedure:

ICD 10 AM code/s:

Wound Class: C CC CO D NA

Antibiotic Prophylaxis

Prophylactic Antibiotic: Yes No * Unknown

* **If 'No', was Prophylaxis known to have been withheld because:**

- patient on antibiotics for treatment of infection related to surgery; **or** Yes No
- patient having joint revision, and antibiotics to be given after old prosthesis removed for culture

Antibiotic (Generic Name)	Time of Administration	Antibiotic Continued >24hrs
	More than 1hr prior to Incision <input type="checkbox"/> Within 1hr prior to Incision <input type="checkbox"/> On Induction <input type="checkbox"/> After Incision <input type="checkbox"/> Not Recorded <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>
	More than 1hr prior to Incision <input type="checkbox"/> Within 1hr prior to Incision <input type="checkbox"/> On Induction <input type="checkbox"/> After Incision <input type="checkbox"/> Not Recorded <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>

Outcome

Infection Date: / /

Infection Type: Deep incisional Organ / Space

Detected: During admission Post discharge surveillance HITH Readmission

Organ Space Site: *(If indicated in infection type please circle)*

Arterial or venous infection	Joint or bursa	Other infections of the urinary tract
Breast abscess or mastitis	GI tract	Other male or female reproductive
Endometritis	Osteomyelitis	Upper respiratory tract
Intraabdominal, not specified elsewhere	Other infections of the lower respiratory tract	Vaginal cuff

Organism Isolated: Yes No

Name of Primary Organism: MSSA MRSA Other _____

NON-VICNISS FIELDS (OPTIONAL) – DO NOT FAX THIS PAGE TO VICNISS

**Type 2 Surgical Infection Report
Surveillance Data Collection Form**

Patient Identification			
MRN (UR No.):	Ward:		
Surname:	Given Name:		
Address:		Suburb:	
Postcode:	Phone:	Deceased:	

Surgical Site Observation (Date/Comments)	
1.	4.
2.	5.
3.	6.

Comments:

Record Complete:

5.8.3 Data Field Instructions – VICNISS Required Fields

Hospital Code Number

Enter 3 digit code number assigned by the VICNISS Coordinating Centre.

MRN (UR Number)

Enter hospital medical record number or any unique identification (ID) number.

Enter the UR number in exactly the same manner each time, that is, if patient ID numbers contain spaces, dashes, leading zeroes or alphabetic characters, e.g., 000-123-456 A. Always be consistent in recording them.

Sex

Tick 'M' (Male) or 'F' (Female).

DOB

Enter the Date of Birth using the format dd/mm/yyyy.

Date Admitted to Hospital

Enter the date of admission using the format dd/mm/yyyy for the current hospital admission.

Procedure Date

Enter the date that the operative procedure was performed using the format dd/mm/yyyy.

Procedure performed at above listed hospital code number

Tick 'Yes' or 'No'.

If 'No' enter the location 'Where procedure was performed' in the space provided.

VICNISS Procedure Group

If applicable, list the VICNISS Procedure Group that corresponds to the VICNISS Operative Procedure that the patient underwent according to the pick-list given below:

APPY, CHOL, COL, CSEC, GAST, HER, HPRO, HYST, KPRO, REC and VHYS (See www.vicniss.org.au/HCW/Type2/ICD10Codes.aspx for more detailed information).

Procedure

Enter the name of the Procedure performed. For example, Right total hip replacement

Wound Class

Tick the wound class of the principal Operative Procedure or the Operative Procedure that led to infection according to the picklist given below:

- **CLEAN WOUNDS (C)** are uninfected operative wounds in which no inflammation is encountered and the respiratory, alimentary, genital, or uninfected urinary tracts are not entered. In addition, clean wounds are primarily closed and, if necessary, drained with closed drainage. Operative incisional wounds that follow non-penetrating (blunt) trauma should be included in this category if they meet the criteria.
- **CLEAN-CONTAMINATED WOUNDS (CC)** are operative wounds in which the respiratory, alimentary, genital, or urinary tracts are entered under controlled conditions and without unusual contamination. Specifically, operations involving the biliary tract, appendix, vagina, and oropharynx are included in this category, provided no evidence of infection or major break in technique is encountered.
- **CONTAMINATED WOUNDS (CO)** include open, fresh, accidental wounds. In addition, operations with major breaks in sterile technique (e.g., open cardiac massage) or gross spillage from the gastrointestinal tract, and incisions in which acute, non-purulent inflammation is encountered are included in this category.
- **DIRTY OR INFECTED WOUNDS (D)** include old traumatic wounds with retained devitalised tissue and those that involve existing clinical infection or perforated viscera. This definition suggests that the organisms causing postoperative infection were present in the operative field before the operation.

If the patient goes to the OR more than once during the same admission and procedures are performed through the same incision, report the wound class that reflects the highest degree of contamination of the wound (i.e., the "dirtiest" class).

Prophylactic Antibiotic

Tick 'Yes' if preoperative/operative prophylactic antibiotics were given for the operative procedure, otherwise tick 'No*'. Tick 'Unknown' for patients whose procedure was performed at another hospital.

Preoperative/operative prophylactic antibiotics are administered **with the intent** of preventing infections at the surgical site. Does not include antibiotics that have been given as a course leading up to the procedure.

IV antibiotics should be given as soon as the patient is stabilised after induction of anaesthesia, except for vancomycin that requires a slower infusion that should be completed just prior to induction

IM antibiotics should be given at the time of premedication for surgery.

* If 'No', (to Prophylaxis Antibiotic): Please tick 'Yes' if prophylaxis was known to have been withheld because the patient was on antibiotics for treatment of infection related to surgery; or the patient was having joint revision, and antibiotics to be given after old prosthesis removed for culture. Otherwise tick 'No'.

Antibiotic (Generic Name)

There are two fields for entering multiple antibiotics. Enter the antibiotics given according to the picklist given below:

Amikacin, Amoxicillin, Ampicillin, Benzylpenicillin, Cefepime, Cefotaxime, Cefpirome, Ceftazidime, Ceftioxone, Cephalothin, Cephazolin, Cefotetan, Ciprofloxacin, Clindamycin, Dicloxacillin, Erythromycin, Flucloxacillin, Gentamicin, Imipenem, Metronidazole, Penicillin, Piperacillin, Tinidazole, Ticarcillin, Vancomycin, Not recorded, Other.

Time of Administration

Tick the timing of each antibiotic administration (infusion or stat dose) according to the picklist given below:

'More than 1hr prior to Incision', 'Within 1hr prior to Incision', 'On Induction' (this field should only be ticked if prophylactic antibiotics are given prior to the surgical incision), 'After Incision', 'Not recorded'.

Antibiotic Continued >24hrs

Tick 'No' if antibiotics ceased within 24 hours post procedure.

Tick 'Yes' if antibiotics are continued longer than 24 hours UNLESS this is due to an 8-hourly 3 dose order which exceeded 24 hours (it is recognised that the intent here is to cease within 24 hours). In these cases, tick 'No'.

Infection Date

Enter the infection date using the format dd/mm/yyyy of the first clinical or laboratory evidence of the nosocomial infection appears.

When the date of a positive culture or other laboratory test is used as the infection date, enter the date the specimen was **collected** rather than the date the result was **reported** by the laboratory.

Detected

To indicate how the infection was detected, tick either 'Admission', 'Post Discharge', 'HITH' or 'Readmission' from the picklist.

If the procedure was performed at another hospital tick 'Admission', not 'Readmission'.

Infection Type

Tick the specific anatomic location or type of surgical infection according to the picklist given:

Deep incisional

Organ / Space infection

Organ Space Site

If the 'Organ space infection' was ticked as the "Infection Type", circle the specific site for the Organ space infection according to relevant subgroups from the picklist given.

Arterial or venous infection

Breast abscess or mastitis

Endometritis

Intraabdominal not specified elsewhere

Joint or bursa

GI Tract

Osteomyelitis

Other infections of the lower respiratory tract

Other infections of the urinary tract

Other male or female reproductive

Upper respiratory tract

Vaginal cuff

Organism Isolated

Tick 'Yes' if pathogenic organism has been isolated from an appropriate specimen, otherwise tick 'No'.

Name of Primary Organism

Enter/tick the name of the primary organism as either 'MSSA', 'MRSA' or 'Other'.

Organism is a conditionally required field. It is only required if 'Organism Isolated' is ticked as 'Yes'.

If 'Other' is ticked, specify name of organism

5.8.4 Specific Infection Site Definitions – Deep and Organ Space Infections

A. Deep Incisional

DEFINITION

A deep incisional SSI must meet the following criterion:

Infection occurs within 30 days after the operative procedure if no implant is left in place or within one year if implant is in place and the infection appears to be related to the operative procedure **and**

- involves deep soft tissues (e.g., fascial and muscle layers) of the incision **and**
- patient has at least **one** of the following:
 - a. purulent drainage from the deep incision but not from the organ/space component of the surgical site
 - b. a deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture-positive or not cultured when the patient has at least one of the following signs or symptoms: fever ($>38^{\circ}\text{C}$), or localised pain or tenderness. A culture-negative finding does not meet this criterion.
 - c. an abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination
 - d. diagnosis of a deep incisional SSI by a surgeon or attending physician.

REPORTING INSTRUCTIONS

- Classify infection that involves **both** superficial and deep incision sites as deep incisional SSI.
- Report culture specimen from a deep incision as Incisional Drainage. (ID)

B. Organ / Space

DEFINITION

An organ/space SSI involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure. Specific sites are assigned to organ/space SSI to further identify the location of the infection. Listed below are the specific sites that must be used to differentiate organ/space SSI. An example is appendectomy with subsequent subdiaphragmatic abscess, which would be reported as an organ/space SSI at the intraabdominal specific site.

An organ/space SSI must meet the following criterion:

- Infection occurs within 30 days after the operative procedure if no implant is left in place or within one year if implant is in place and the infection appears to be related to the operative procedure **and**
- infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure **and**
- patient has at least **one** of the following:
 - a. purulent drainage from a drain that is placed through a stab wound into the organ/space
 - b. organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space
 - c. an abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination
 - d. diagnosis of an organ/space SSI by a surgeon or attending physician.

REPORTING INSTRUCTIONS

- Occasionally an organ/space infection drains through the incision. Such infection generally does not involve re-operation and is considered a complication of the incision. Therefore, classify it as a deep incisional SSI.
- When there is no drainage through the incision the SSI remains an organ/space.
- If there is no spontaneous drainage through the incision but the wound is deliberately opened, it remains an organ space SSI. NB: It does not matter where the wound was deliberately opened, e.g., ward, operating theatre.
- Report culture specimen from organ/space as deep drainage.

The following are specific sites of an Organ/Space SSI:

- Arterial or Venous Infection
- Breast Abscess or Mastitis
- Disc Space
- Endocarditis
- Endometritis
- GI Tract
- Intra-abdominal, not specified elsewhere
- Intracranial, Brain Abscess or Dura
- Joint or Bursa
- Mediastinitis
- Meningitis or Ventriculitis
- Myocarditis or Pericarditis
- Osteomyelitis
- Other Female Reproductive Tract
- Spinal Abscess without Meningitis

5.9 Outpatient Haemodialysis Event

This surveillance module is primarily based on the Centers for Disease Control and Prevention (2003) *Dialysis Surveillance Network: Surveillance for Bloodstream and Vascular Access Infections in Outpatient Haemodialysis Centres Procedure Manual*.

5.9.1 Aim

To provide a method for individual outpatient haemodialysis units/centres to monitor bloodstream and vascular access infections and IV Vancomycin starts.

5.9.2 Data Collection Forms

There are two forms to be completed for this surveillance module. These forms begin on the following page. Reporting instructions for each data field follows the form.

Include chronic haemodialysis patients only who are permanently listed on the units program. 'Visiting' haemodialysis patients are not counted.

A. Incident Form

An Incident form is to be completed for each patient with a positive blood culture or IV vancomycin start.

Include ALL patients with a positive blood cultures taken as an outpatient or within 1 day after a hospital admission.

Include ALL IV vancomycin starts in the haemodialysis unit, not just those for a vascular access problem.

Rule for reporting repeats:

Complete a new Incident form for positive blood cultures occurring 21 days or more after a previous positive blood culture.

If IV Vancomycin is stopped for **less than 21 days** and then restarted, this is not considered a new incident. However if IV Vancomycin is stopped for **21 days or more** and then restarted this is considered a new incident.

B. Denominator Form

The number of chronic haemodialysis patients with each access type who receive haemodialysis on the first two working days of the month are recorded. Count each patient only once. If a patient has both an implanted access (graft or fistula) and a catheter count this patient as having the catheter.

Reference:

Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention (CDC) (2003) *Dialysis Surveillance Network: Surveillance for Bloodstream and Vascular Access Infections in Outpatient Haemodialysis Centres Procedure Manual*

Type 2 Outpatient Haemodialysis Event Surveillance Data Collection Form

Complete one form for each patient with a positive blood culture, or in unit IV antimicrobial start

If you have any queries regarding the completion of this sheet please contact VICNISS

DO NOT ATTACH PATIENT BRADMA LABEL

VICNISS REQUIRED FIELDS – Fax to VICNISS 03 9342 2633

Hospital Code Number:

Patient Identification

MRN (UR No.):

Sex: M F

DOB: / /

Vascular Accesses (tick all that a patient has):

1 = graft ⇔ **If YES to graft:** Synthetic (e.g. PTFE, Thoratec) **or** Native Vein
2 = av fistula 3 = temporary catheter (non-cuffed) 4 = permanent catheter (cuffed)

Incident Details

Incident Type (one or both may be ticked as appropriate):

Patient with a positive blood culture In-unit IV Vancomycin start

Date of Incident: / /

If blood culture **positive**, suspected source of positive blood culture:

1 = vascular access 2 = a source other than vascular access 3 = contamination 4 = uncertain

If blood culture **positive**, please complete the organism and sensitivity matrix:

Organism & Sensitivity:

	Methicillin*				Fusidic Acid				Penicillin				Ampicillin				Vancomycin				Rifampicin							
	S	R	I	U	S	R	I	U	S	R	I	U	S	R	I	U	S	R	I	U	S	R	I	U				
Gram positives																												
<i>Coagulase negative staph.</i> <input type="checkbox"/>																												
<i>Enterococcus faecalis</i> <input type="checkbox"/>																												
<i>Enterococcus faecium</i> <input type="checkbox"/>																												
<i>Staphylococcus aureus</i> <input type="checkbox"/>																												
Other organisms:	Not required																											

* Methicillin may be reported as equivalent Oxycillin or Flucloxacillin

Gram negatives	Ceftazidime	Ceftriaxone	Cefpirome	Imipenem	Piperacillin	Ampicillin	Gentamicin	Amikacin	Ciprofloxacin	Sulfamethoxazole
Record: S = Sensitive R = Resistant I = Intermediate U = Unknown										
<i>Acinetobacter spp.</i> <input type="checkbox"/>										
<i>Enterobacter spp.</i> <input type="checkbox"/>										
<i>E. coli</i> <input type="checkbox"/>										
<i>K. oxytoca</i> <input type="checkbox"/>										
<i>K. pneumoniae</i> <input type="checkbox"/>										
<i>P. aeruginosa</i> <input type="checkbox"/>										
<i>S. marcescens</i> <input type="checkbox"/>										
<i>S. maltophilia</i> <input type="checkbox"/>										
Other organisms:	Not required									

NON-VICNISS FIELDS (OPTIONAL) – DO NOT FAX THIS PAGE TO VICNISS

**Type 2 Outpatient Haemodialysis Event
 Surveillance Data Collection Form**

Patient Identification			
MRN (UR No.):		Ward:	
Surname:		Given Name:	
Address:		Suburb:	
Postcode:	Phone:		Deceased:

Comments:

Record Complete:

Type 2 Outpatient Haemodialysis Event Monthly Denominator Data Collection Form

If you have any queries regarding the completion of this sheet please contact VICNISS

VICNISS REQUIRED FIELDS – Fax to VICNISS 03 9342 2633

Hospital Code Number:

Month/Year:

For Month of:

Year:

Record the number of chronic haemodialysis patients who received haemodialysis on the first two working days of the month. Count each patient only once. If a patient has both an implanted access (graft or fistula) and a catheter, count this patient as having the catheter.

Vascular Access Type:	Number of Chronic Haemodialysis Patients:
Graft (Synthetic or native vein)	
Fistula	
Temporary catheter (noncuffed)	
Permanent catheter (cuffed)	
Total patients (= the sum of all patients listed above)	

5.9.3 Data Field Instructions – VICNISS Required Fields

For Form A:

Hospital Code Number

Hospital number to be assigned by VICNISS Coordinating Centre.

MRN (UR Number)

Enter hospital medical record number or any unique identification (ID) number.

Enter the UR number in exactly the same manner each time, that is, if patient ID numbers contain spaces, dashes, leading zeroes or alphabetic characters, e.g., 000-123-456 A always be consistent in recording them.

Sex

Tick 'M' (Male) or 'F' (Female).

DOB

Enter the Date of Birth using the format dd/mm/yyyy.

Vascular Accesses

Tick one or more boxes to indicate the patient's current vascular access: graft (synthetic or native vein), fistula, temporary catheter (non cuffed) or permanent catheter (cuffed).

Incident Type

Tick if it is an in-unit IV Vancomycin start and/or a patient with a positive blood culture.

Date of Incident

Enter the month, day, and year (dd/mm/yyyy) of the in unit IV Vancomycin start or positive blood culture.

Blood Culture

From the picklist given, tick: 0=not done, 1=positive, 2=negative, 3=unknown.

If the patient was hospitalised, include blood cultures taken within 1 day before to 1 day after hospital admission – do not enter the many blood cultures a patient may have during a hospital admission. For IV Vancomycin starts, include any blood cultures taken during the time frame of the IV Vancomycin start.

If positive blood culture, suspected source of positive blood culture:

1=vascular access, 2=a source other than the vascular access, 3=contamination, 4=uncertain

Tick '1=vascular access' only if there is some objective evidence of vascular access infection (i.e., drainage, pus, redness, swelling, pain, an open area, or a positive culture from the access showing the same organism found in the blood) – do not tick this category if the patient has a positive blood culture of no known aetiology (instead, Tick '4=uncertain').

Tick '2= a source other than the vascular access' if the patient has an infection at another site that could have caused the positive blood culture. Tick this option if either (a) or (b) is true: (a) a culture from another site (e.g., leg wound, urine) shows the same organism found in the blood; (b) there is clinical evidence of infection at another site, but a culture was not taken from it.

Tick '3= contamination' if the organism is thought to be a contaminant. Tick this option if either the laboratory or the attending physician states that the positive blood culture is suspected to be a contaminant. Blood cultures positive for the following organisms may represent contamination: coagulase-negative staphylococcus (CNS), diphtheroids, *Propionibacterium* species, or *Bacillus* species. CNS include *S. epidermis* and several other species of *Staphylococcus* but not *S. aureus*. Diphtheroids may be reported by the laboratory simply as "diphtheroids" or as a name starting with "*Corynebacterium*" such as "*C. ulcerans*". Contamination is more likely if only one blood culture "set" is positive for the organism. Each blood culture "set" usually consists of 20 ml of blood inoculated into two blood culture bottles (10 ml into each bottle); more than 2 bottles filled from a single venipuncture should be interpreted as only one set.

Tick '4 = uncertain' if there is insufficient evidence to decide among the three previous categories.

If blood cultures were positive

Complete the organism and sensitivity matrix for each primary organism. If multiple organisms are isolated, report on recognised pathogens only and not potential contaminants.

Organism and Sensitivity Matrix

For the primary organism according to the antibiotics listed tick either Sensitive (S), Intermediate (I), Resistant (R) or Unknown (U) from the picklist.

5.10 Surgical Site Infection (SSI) (Type 1 Module)

This module is currently being updated in the Type 1 Surveillance Program and will be available early in 2008.

In the meantime, please continue to collect data as per Version 9 of the Type 2 Surveillance Manual module.

6. GLOSSARY

ASA Score

American Society of Anesthesiology (ASA) score. This index is designed to pre-operatively assess the overall physical status of the patient. The score ranges from 1 for a healthy patient to 5 for a patient who is not expected to survive 24 hours post surgery.

Category Specific Rate

A category specific rate is a rate calculated for a subpopulation so that comparisons are possible. *For example*, if Hospital A and B compare data from like populations (pneumonia in ventilated patients in the surgical ICU), they may be able to interpret the differences that are observed.

Crude Rate

A crude rate is an overall rate for an entire population. This rate may be confounded by differences found in groupings or subpopulations within the overall population. For example, a hospital wide infection rate is a crude rate. Hospital A and Hospital B cannot interpret the differences between their overall rates because the crude rates do not give enough information about the risk factors and types of patients found in each facility.

Denominator

The lower portion of a fraction used to calculate a rate or ratio. For calculation of infection rates, denominators should closely represent the population at risk. If time is an important component of that exposure to risk, simple measures such as numbers of discharges or admissions is not valid.

Epidemiology

The study of populations to determine the frequency and distribution of disease and measure risks.

Incidence

Incidence measures the number of new cases of disease within a population over a given period of time. The numerator is the number of cases of the disease that have developed in a given time period; the denominator is the initial population at risk to develop that disease.

Incidence Rate (Incidence Density)

Incidence density, uses a denominator of person-time units, which accounts for the variation in the periods of follow-up for each subject. This involves calculating a rate in which the numerator is not included in the denominator.

For example, incidence density is used in the calculation of ventilator associated pneumonia rates. In this instance the numerator is the number of pneumonia cases that occurred in ventilator patients for a specified time period, and the denominator is the number of ventilator days, with ventilator days representing time units of exposure for these patients.

Hospital-acquired Infection

An infection is classified as hospital-acquired if it was not present or incubating at the time the patient was admitted to hospital. SSIs are considered hospital-acquired if the infection occurs within 30 days after the operative procedure or within 1 year if a device or foreign material is implanted.

Numerator

The numerator is the upper portion of a fraction used to calculate a rate or ratio. The numerator represents each event (e.g., infection) that occurs during the defined period of interest.

Outlier

An observation differing widely from the rest of the data. For example, an infection rate that is much higher or lower than other rates in the data set.

Pathogen

An agent of disease – that is, a disease producer. The term pathogen is used most commonly to refer to infectious organisms. These include microorganisms such as bacteria, viruses and fungi.

Period prevalence

Period prevalence is a combination of prevalence and incidence. The numerator is the number of cases of disease existing at the beginning of the study, in addition to all new cases that develop during the study period. The denominator is the entire population from which the numerator was derived.

Point Prevalence

The number of events or persons with a given disease or other attribute during a specified point in time.

Prevalence

Prevalence measures the proportion of cases of existing disease within a defined population at a given point in time. It is obtained by dividing the number of cases of existing disease by the total population.

Proportion

Proportion is a type of ratio, often expressed as a percentage, in which the numerator must be included in the denominator. For example, the proportion of cases of cholecystectomy in which a surgical site infection developed. The numerator would be the number of infections, the denominator would be the total number of cholecystectomies that were conducted during the study period.

Prospective Surveillance

Monitoring patients for infection whilst they are still in hospital. This surveillance can also include post discharge surveillance, whereby patients are monitored for a set period once they leave hospital. See also Retrospective Surveillance.

Rate

A rate is a ratio with a particular relationship between the numerator and denominator, in which time measurement is included in the denominator. (Note: the term rate is often inexactly applied to measures that may be true rates, ratios or proportions).

Ratio

Ratio is a general term; it is obtained by dividing one number by another. There is no implication that the numerator and denominator are related. For example, the ratio of men to women in a population.

Retrospective Surveillance

Using chart review after the patient has been discharged from hospital as the sole means of identifying infections.

Risk Adjustment

A standardised method used to ensure intrinsic and extrinsic risk factors for a hospital-acquired infection are considered in the calculation of hospital-acquired infection rates.

Risk Index

A means of stratifying patients according to their risk of infection. This then allows appropriate comparison of infection rates. See also Risk Adjustment.

Sensitivity and Specificity

An ideal surveillance detects and counts all “true” cases of infection and excludes false positives, i.e. cases that are not infections. Sensitivity is a measure of how well the surveillance system is detecting infections, and can be defined as the proportion of those with a hospital-acquired infection in the target population that is identified by the case finding methodology. Specificity is a measure of how good the system is at excluding potential cases who do not have an infection, and can be defined as the proportion of those without a hospital-acquired infection in the target population as correctly identified by the case finding methodology. A balance has to be struck between sensitivity and specificity; increasing one almost always reduces the other. In practical terms it is usually necessary to strike a balance between finding all true cases and the amount of effort necessary to track down cases that may turn out to be false positives.

Specificity

See sensitivity.

Standardisation

A set of techniques used to remove, as far as possible, the effects of differences in age or other confounding variables when comparing two or more populations.

Surveillance

The ongoing systematic collection, analysis and interpretation of health data.

Targeted Surveillance

Surveillance for infection in a specific area (for example, an intensive care unit) or for a specific procedure (for example, total hip replacement). Targeted surveillance for areas of concern is more efficient than doing surveillance across a whole hospital for all infections.

Trend

The general direction in which something tends to move. Surveillance involves observing the trend of infection rates to help identify any increases.

Validation

A program series of checks and challenges, repeated periodically to establish the soundness and accuracy of the data.

7. APPENDICES

7.1	Type 2 Annual Surveillance Plan Form	7—2
7.2	Event Sheet Fax Cover Page to VICNISS	7—3

Type 2 Annual Surveillance Plan

Please fax to VICNISS – 03 9342 2633

If you have any queries regarding the completion of this sheet please contact VICNISS
Please note the Surveillance Plan is to be completed from July to June to match the financial year like Performance Indicators

Hospital Code Number: _____ **Hospital Name:** _____

Submitted by: _____ **Position:** _____ **Date:** __ / __ / __

Surveillance Module	Financial Year: _____ / _____						Months: (Please mark as appropriate below)					
	J	A	S	O	N	D	J	F	M	A	M	J
Process Indicators												
1. Surgical Antibiotic Prophylaxis												
2. HCWs & Measles Vaccination												
3. HCWs & Hepatitis B Vaccination												
4. Peripheral Venous Catheter Use												
Multi-resistant Organism												
<i>Staphylococcus aureus</i> Bloodstream Infection												
Occupational Exposure												
Surgical Infection Report												
Outpatient Haemodialysis Event												
Surgical Site Infection (Type 1 Module)												
Please indicate VICNISS Procedure Groups:												
1.												
2.												
3.												

Please notify the VICNISS Coordinating Centre of any changes made to the Annual Surveillance Plan

Fax

To: Noleen Bennett **From:**
Fax: 03 9342 2633 **Hospital Code:**
Phone: 03 9342 2605 **No. of pages:**
Re: Type 2 Surveillance Program **Date:**

This facsimile contains confidential information intended only for the recipient named above and may be subject to legal privilege. If you are not the intended recipient, any disclosure, copying or use of this information is prohibited. If you have received this facsimile in error or have any other concerns regarding its transmission, please telephone VICNISS on +61 3 9342 2605.

Please find attached completed data for:

Month: _____

	Module Completed:		
5.1 Surgical Antibiotic Prophylaxis	Yes <input type="checkbox"/> No <input type="checkbox"/>		
5.2 HCW and Measles Vaccination	Yes <input type="checkbox"/> No <input type="checkbox"/>		
5.3 HCW and Hepatitis B Vaccination	Yes <input type="checkbox"/> No <input type="checkbox"/>		
5.4 Peripheral Venous Catheter Use	Yes <input type="checkbox"/> No <input type="checkbox"/>		
		Events/Infections Detected:	If 'Yes', how many:
5.5 Multi Resistant Organism	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
5.6 <i>Staphylococcus aureus</i> Bloodstream Infection	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
5.7 Occupational Exposure	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
5.8 Surgical Infection Report	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
5.9 Outpatient Haemodialysis Event	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
5.10 Surgical Site Infection (Type 1)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	_____

Comments: