Infection Control in Victorian Public Health Services 2002

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Infection control in Victorian public health services 2002

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Foreword

Over the last decade, health care delivery models have become more diverse. Simultaneously, evolving medical technology has allowed the treatment of sicker patients, including the very young, the very old, those undergoing intricate medical and surgical procedures and others with compromised immune systems. While advances in medical care have provided many opportunities for improved prospects for patient outcomes, they also include inherent risks, such as infection.

Infection associated with health care has been identified as one of the most common adverse outcomes in health care systems in the developed world. While not all health care-associated infections are avoidable, our challenge is to ensure that systems and processes are in place to maximise their prevention.

The Department of Human Services is committed to ensuring the quality and effectiveness of acute health care services in Victorian hospitals and improving patient safety through clinical governance. Infection prevention and control is a key component of this program. To achieve these aims, the Victorian Government has committed $33 million over four financial years to improve infection control and cleaning in Victorian hospitals.

The Victorian Infection Control Survey, which was conducted in acute public health services in 1996–97, forms the basis for comparison to this 2001–02 Survey. We are pleased to have been able to identify an overall improvement in the effectiveness of infection control programs in public health services throughout Victoria, and look forward to an ongoing improvement in performance from the initiatives that have been implemented since publication of the previous report in 1998.

Shane Solomon
Executive Director, Metropolitan Health and Aged Care Services

Executive summary

Background

The 2001–02 Infection Control Survey, is an integral subcomponent of the Victorian Government's five-point infection control strategy, which is to:

1. Develop a coordinated and strategic management approach to infection control in Victorian health services.
2. Improve adherence to staff infection control guidelines.
3. Establish a Victorian Hospital Acquired Infection Surveillance System.
4. Monitor and reduce the emergence of antibiotic-resistant organisms and vaccine preventable diseases.
5. Improve environmental surveillance.

In 1996, an Infection Control Task Force recommended that a comprehensive survey be undertaken of Victorian acute public health services to identify hospital resources for infection control and relevant supporting practices and policies. This initial review was conducted in 1996 and 1997, and incorporated an extensive review of local and international literature on infection control. The findings from this 1996–97 Survey, which are documented in the report *Infection Control In Victorian Public Hospitals 1998*, form the basis for identifying the current status and improvement in infection control practice across Victorian hospitals in this latest survey conducted in 2001 and 2002.

In August 2000, all health services were required to develop Infection Control Strategic Management Plans, which:

- Reflected a coordinated approach across health care services.
- Encompassed infection control structures, processes and resources.
- Addressed patient and staff infection control monitoring and prevention.

The strategic planning process required hospitals to address each of the five priority outcome areas identified in the Victorian Infection Control Strategy:

1. Management commitment, leadership and accountability.
2. Monitoring of infection control and reducing infection rates.
3. Prevention of adverse events.
4. Protecting health care workers and visitors.
5. Surveillance.

An expert panel reviewed the Strategic Plans, and the Department of Human Services provided reports to health services commending innovative initiatives and identifying priority areas to mid-2002.

The 2001–02 Infection Control Survey was also expected to have the added benefit of monitoring the effect of strategic priorities implemented by health services since submission and feedback on their 2000 Strategic Plans. Direct comparison to the

1996–97 Survey was not possible, as a new survey instrument was developed for the 2001–02 Survey. It was redeveloped due to the complexity and length of the original survey, which included over 5,000 questions, difficulties associated with tool design, resources required for data input, and the need for the tool to evolve in line with current standards and guidelines.

The 2001–02 Infection Control Survey instrument was designed to capture information in the key areas identified in the 1996–97 Survey, however, it excluded:

- Environmental cleanliness, which was separately audited in 2001.
- Detailed information on food safety, which is the subject of a separate audit.
- Pathology services, which are the subject of a separate accreditation process.

The key areas surveyed in 2001–02 were:

- The role of hospital management in infection control.
- Cleaning disinfection and sterilisation of medical/surgical equipment.
- Surveillance activities.
- Occupational health and safety.
- Staff infection prevention and control.
- Education and training.
- Infection control factors in the physical environment.
- Prevention of the emergence and spread of antibiotic-resistant microorganisms.

Objectives

The primary objective of the 2001–02 Infection Control Survey was to evaluate the effectiveness of current infection control programs, policies and practices in all Victorian acute public hospitals. It also allowed broad, State-based comparisons with the key findings in the benchmark survey conducted in 1996–97.

Some of the key areas identified in the 1996–97 Survey as requiring improvement were:

- Development of infection monitoring and control plans.
- Cleaning, disinfection and sterilisation of instruments and equipment, as outlined in Australian Standard AS 4187, in particular, those relating to monitoring and maintenance or sterilisers, and the excessive use of emergency, also known as ‘flash’ sterilisation, in lieu of increasing instrument inventory.
- Inappropriate use of glutaraldehyde, a chemical disinfectant used for high level disinfection of heat sensitive medical equipment.
- Identified gaps in hospital-acquired infection surveillance.

- Immunisation programs offered to health care workers and volunteers by health care organisations.
- Consultation with infection control practitioners in relation to planning for new works or refurbishment.

The survey instrument used in 2001–02 was developed in consultation with a reference group. This consisted of infection control practitioners, an infectious disease physician, a hospital engineer, a sterilisation expert and Department of Human Services representatives, in association with Taylor Nelson Sofres, a company experienced in survey design and analysis. Over 500 individual items were surveyed in 107 acute care health services in Victoria during a nine-month period from October 2001 to June 2002.

As part of the Victorian Government's overall Infection Control Strategy, all acute health services were required to submit three-year strategic plans in 2000 addressing five priority outcome areas. Many of the recommended strategies to improve infection control programs, as detailed in the 1998 Report, formed the basis of these plans.

The 2001–02 Infection Control Survey has identified an overall improvement in all key survey areas of infection control practice, with health care services achieving many of the 1998 recommended outcomes. Our challenge is to continue to build on these improvements, in order to maximise the potential for the prevention and control of infection and subsequent reduction in adverse outcomes to patients, health care workers and visitors to our health services.

Key findings: Achievements

Role of hospital management

All health services have an Infection Control Strategic Management Plan in place, and 99 per cent of health services have an executive sponsor, and committed organisational support and resources. Eighty-nine per cent of health services have a multidisciplinary infection control team, and regularly review and audit infection control policies and procedures. The majority of health services consult with infection control in relation to capital work, equipment purchase and critical incident risk management planning.

Cleaning, disinfection and sterilisation

In 94 per cent of health services, CSSD managers, or persons responsible for this role, were responsible for cleaning, disinfection and sterilisation of reusable instruments. The CSSD manager, or person responsible for this role, is also consulted regarding instrument purchase in the majority of health services.

There has been a significant reduction in the number of health services using glutaraldehyde, as well as improvements in the use of closed systems when glutaraldehyde is used. Thirty-eight health services still used glutaraldehyde. Of

these, 22 reported closed systems within the departments surveyed, while 16 reported open systems. There has also been a significant reduction in the use of 'flash' sterilisation.

Seventy-two per cent of health services demonstrated high compliance with policies and procedures for the storage, handling and transportation of sterile stock.

Surveillance

There has been extensive improvement in the surveillance of hospital-acquired infections in health services, with 96 per cent identifying a plan for surveillance. Eighty-five per cent of health services analysed this data, and 83.2 per cent of these provided feedback to key stakeholders within organisations.

Occupational health and safety

Ninety-eight per cent of health services have immunisation policies for health care workers, and 94 per cent make immunisation available to paid employees. In addition, 99 per cent of health services have policies for the management of health care workers exposed to infectious diseases, and all health services have policies for post-exposure to blood borne viruses. The majority of health services had access to specialist counselling for exposures to HIV and hepatitis C.

Ninety-eight per cent of health services had a system in place for documenting immunisation and screening, and provided health care workers with access to their immunisation records.

Education and training

The majority of health services have induction programs and ongoing education programs that include an infection control component. Over 90 per cent of health services reviewed and modified the infection control components of ongoing and induction education programs.

All health services provide training when new systems or equipment for cleaning, disinfection and sterilisation are introduced. The majority of health services provided education to CSSD staff on the handling of sterile stock.

Physical environment

There has been considerable improvement in the integration of infection control requirements within the physical environment. Over 90 per cent of health services have appropriate policies governing waste management and the safe handling and disposal of sharps.

Eighty-two per cent of health services were able to demonstrate planned maintenance schedules for equipment, air handling and water systems, with 90 per cent demonstrating documentation for work undertaken.

All health services reported that cooling towers were maintained in accordance with Victorian health regulations.

Antibiotic-resistant organisms

While the majority of health services use strategies for encouraging optimum antibiotic use, policies governing antibiotic prescribing and antibiotic restriction are most evident in larger health services. Similarly, audits of anaesthetic charts for administration of antibiotics prior to commencing surgical procedures is predominately undertaken by Category A health services.

Key findings: Improvement opportunities

The role of hospital management

Category D and E health services need to improve their provision of infection control information, including policies and procedures regarding patients and other consumers of the health service. Such information might include educational material on infectious diseases, immunisation, handwashing, multi-resistant organisms, and other measures to prevent transmission of health care associated infection.

Cleaning, disinfection and sterilisation

All health services should ensure that any staff responsible for sterile medical and surgical equipment have sufficient training and competencies. This includes those who process or store such equipment, including supply department staff, as well as end users. All health services are required to conduct internal audits on AS 4187 compliance. Compliance with AS 4187 requires improvement in workflows and layout of areas for:

- Cleaning, sterilisation and disinfection;
- Storage areas;
- Transportation processes for sterile stock.

Health services need to ensure that all thermal and chemical disinfection and sterilisation equipment used throughout each facility is monitored for effectiveness, and have clearly defined maintenance and calibration schedules. All health services are required to have policies for tracking systems for steam and chemically processed items.

Health services continuing to use glutaraldehyde should pursue alternative high level disinfecting agents, where practicable, as new solutions for particular instruments become available.

Surveillance

All health services need to develop surveillance programs appropriate to their local patient demographics and priorities. VICNISS Hospital Acquired Infection Surveillance will develop surveillance systems for smaller health services and long-term care facilities in consultation with key stakeholders.

Occupational health and safety

Health services need to ensure that immunisation policies are inclusive of groups who may be exposed to infectious diseases other than paid health care workers. These include volunteers and non-hospital employees such as agency staff, contractors and students. Health services are responsible for ensuring that non-hospital employees can substantiate appropriate immunisation status.

Access to HIV post-exposure prophylaxis within recommended timeframes needs to be documented. All health services should ensure that there are policies for occupational exposures to other infectious diseases, such as measles, varicella, tuberculosis and meningococcal.

Education and training

All health services need to ensure that learning outcomes from education programs are evaluated. In order to promote a holistic approach to the responsibility of infection prevention and control throughout organisations, knowledge of current infection control practice should be a key component of employment contracts and performance appraisals of all health care personnel.

Physical environment

All health services need to ensure that there is a documented system for undertaking an infection control risk assessment before redevelopment or structural maintenance. Contracts related to new works and refurbishment need to demonstrate infection-related clauses. All health services should develop, implement and monitor compliance with internal policies for containment of contaminants (such as dust), as part of a risk management approach within their facility.

All health services should regularly assess isolation room requirements to assist with future planning. In particular, Category A, B and C health services should use the opportunity of planned refurbishment or new works to review negative pressure ventilation in emergency departments and intensive care units.

It is recommended that all health services regularly review their isolation rooms to determine compliance with the current guidelines. In particular, where class N or P facilities exist, health services need to ensure that staff are trained in monitoring of air pressures, and that when in use room and airlock pressures are recorded at minimum on a daily basis.

Some improvement is required in all health services to ensure that waste management policies include reference to EPA guidelines. All contracts with external providers pertaining to waste, sharps or linen management should include infection-related clauses.

Category C, D and M health care facilities need to ensure that there is documented evidence of planned maintenance schedules for equipment, air handling and water systems within each organisation.

All health services need to ensure that information on monitoring of air changes in the operating theatre and CSSD is undertaken in accordance with the Department of Human Services 1996 Guidelines on Air-Conditioning in Health Care Buildings.[1]

Antibiotic-resistant organisms

All health services performing surgical procedures that require administration of antibiotic prophylaxis need to audit anaesthetic charts for compliance with recommended guidelines. Smaller health services need to improve documentation concerning the management of patients colonised with antibiotic-resistant organisms and the safe isolation of patients with suspected pulmonary tuberculosis.

Progress summary on the 12 recommended strategies from the 1998 Infection Control Task Force report

In 1998, the Infection Control Taskforce recommended that all health services develop strategies to ensure that they met relevant statutory requirements, safety standards and relevant guidelines related to infection control.

Recommended strategy 1

Required action

Health care services were required to advise the Department of Human Services of actions to implement priority issues identified in the 1996–97 individual health service survey reports by 30 June 1998.

Outcome

This requirement was achieved by all health services. Since then, health services have been required to develop and submit, in 2000, three-year infection control strategic plans based on the five identified key priority areas for infection control in Victorian public health services. An expert infection control panel reviewed these plans, and identified priority areas. Progress reports were requested and submitted on priority items from all health services in August 2002.

Recommended strategy 2

Required action

All health services were required to submit a costed Infection Control Monitoring and Control Plan to the Department of Human Services by 31 October 1998, which was to include:

- Evidence of a review of organisational structures.
- Reporting relationships for infection monitoring and control.
- A comprehensive education strategy.

1 *Victorian Department of Human Services,* ***Capital Works Guidelines: 6.3 Air-conditioning in health care buildings 1996****.*

- A strategy for meeting statutory requirements and identified standards of practice by 30 June 2001.

Outcome

This requirement was achieved by all health services. In August 2000, all health services were required to develop Infection Control Strategic Management Plans that reflected a coordinated approach across health care services, encompassed infection control structures, processes and resources, and addressed patient and staff infection control monitoring and prevention.

To assist hospitals implement their Plans, a total of $7.8 million one-off funding was distributed in March 1999, with a further $3 million distributed in July 1999. These funds were allocated on the basis of throughput to hospitals and rural regions. The rural regional offices allocated funding prioritised on the basis of the rural infection control plans. The majority of these funds were used to upgrade sterilisation equipment and to purchase of medical instruments to ensure compliance with AS 4187.

In 2000, all Victorian public health services were requested to submit three-year strategic plans addressing the five priority areas for infection control, including:

1. Management commitment, leadership and accountability.
2. Monitoring of infection control and reducing infection rates.
3. Prevention of adverse events.
4. Protecting health care workers and visitors.
5. Surveillance.

All health services report annually to the Department on the progress of their plans. Priorities established for health services have included establishing multidisciplinary infection control teams and health service-wide infection control services with clear organisation structures and executive support, as well as phasing out the use of glutaraldehyde in open systems. The 2001–02 Survey demonstrated a high level of compliance with this area by all health services.

Recommended strategy 3

Required action

The survey tool developed by the Infection Control Taskforce in 1996 forms the basis for assessing compliance with specified standards. A third party should resurvey health services to assess compliance with these standards.

Outcome

In 2001, a new survey tool was developed, in consultation with an Infection Control Reference Group, the Department of Human Services and a specialist survey development company. The tool was developed being mindful of requirements to enable broad comparisons to the 1996–97 Infection Control Survey, and to identify

progress on current strategies in infection control practice. A second external survey was subsequently conducted in 107 Victorian public health services from October 2001 to June 2002.

Recommended strategy 4

Required action

Infection control practitioners and infection control teams in all health services should be encouraged to develop an 'infection control alliance' with hospitals of their choice. These alliances' role should be to facilitate quality improvement, including benchmarking and peer review.

Outcome

Regional infection control practitioners have, for many years, established professional networks, which have now been formalised with regional infection control alliances in the five rural regions. A formal rural collaborative group, the Rural Infection Control Practice Group (RIPRAC) was formed in early 2001. Strategic priorities for rural regions include the establishment of formal links with infectious disease physicians or metropolitan infectious disease services for advice and support. While the 2001–02 Infection Control Survey identified that the majority of health services had formal links, this was still more common in Category A, B and C health services. Some improvement is still required in this area.

Metropolitan health services have also used informal networks for advice and support. In 1998, a number of metropolitan and regional health service infection control practitioners established the Victorian Infection Control Surveillance Project, in order to facilitate standardised surveillance methods based on best practice in acute and long-term care facilities. This enabled benchmarking of performance in surgical site infection surveillance and identification of the prevalence of infections in long-term care patient populations. The Department of Human Services has also established an infection control website to facilitate communication of information and sharing of resources to Victorian infection control practitioners and infection control teams.

Recommended strategy 5

Required action

The Department of Human Services should work closely with regional and rural health services to ensure that infection control practitioners, along with staff responsible for cleaning, disinfection and sterilisation in these facilities, are able to prepare their infection control plans effectively. The Department should also examine the most appropriate model for delivery of services, which meet key standards and are effectively utilised.

Outcome

In early 2000, the Department of Human Services undertook extensive consultation with metropolitan health services and rural regions regarding implementation of the Victorian Government's five-point Infection Control Strategy. This led to the development of the *Guidelines for Infection Control Strategic Management Plans*, and allocation of a $4,500 one-off funding to all health services and hospitals to assist with the development of these plans. An additional 32 infection control practitioners were recruited and trained in 2001 to assist health services to meet key infection control standards. With the 11.5 EFT additional infection control practitioners allocated to the rural sector, regions chose to establish centres of infection control excellence that provide region-wide access to experts in sterilisation and infection control. The Department of Human Services has allocated $250,000 recurrent funding to support rural regional infection control services. The Department will undertake an evaluation of these rural service delivery models in 2003.

Recommended strategy 6

Required action

The Department of Human Services should investigate the provision of a specialist statewide support service for health services. The service would provide educational and practical advice and support on infection monitoring and control, and disinfection and sterilisation issues.

Outcome

The Department of Human Services consulted with health services and rural regions regarding mechanisms to enhance infection control structures and supports for health services.

An expert working group was established to advise on the surveillance needs for Victorian public hospitals. The VICNISS Hospital Acquired Surveillance Coordinating Centre was launched in February 2002. It provides specialist statewide support on surveillance and monitoring for all Victorian public health services. In addition, $34,000 was allocated to enhance the Victorian Hospitals Pathogens Surveillance System.

In 2000, all Victorian public health services were requested to submit three-year strategic plans, which promoted organisational ownership of infection control and required executive sponsorship and formal links with infectious diseases services.

Rural regional infection control centres of excellence were established to provide local access to regional expertise.

In 2000, the Department undertook a review of the role and membership of the Standing Committee on Infection Control. A new committee, the Victorian Advisory Committee on Infection Control (VACIC) was formed in 2001, with three subcommittees addressing the issues of surveillance, antibiotic use and education, and guideline development.

Recommended strategy 7

Required action

An online infection control, cleaning disinfection and sterilisation message board should be developed to link practitioners and to facilitate their access to current professional literature and opinion. Health services would be required to provide dedicated computer access and training to infection control and Central Sterilising Services Department personnel in their facility for the purpose of accessing this message board.

Outcome

All health services have been provided with one-off and recurrent funding to improve access to computers and electronic information. The 2001–02 Survey identified that the majority of infection control practitioners in all public acute health services have access to computers and electronic communication. The Department of Human Services infection control website facilitates the sharing of information between practitioners, and identifies links to professional resources. All Victorian public health services have free access to the Clinicians Health Channel, their electronic libraries and other online resources. The VICNISS website facilitates the sharing of surveillance information between health services via an e-bulletin and FAQ site.

Recommended strategy 8

Required action

That an expert working group be established to advise on the development of performance indicators for monitoring of hospital and statewide performance, and to report back to the department within 12 months of its establishment.

Outcome

In August 2000, the findings of the Expert Working Group (EWG) on the Surveillance of Nosocomial Infections were publicly released. The EWG recommended that components of the US Centers for Disease Control (CDC) National Nosocomial Infection Surveillance (NNIS) program be adopted for Victorian public hospitals with greater that 100 beds. The VICNISS Hospital Acquired Infection Surveillance Coordinating Centre was launched in February 2002 to provide specialist statewide support for all Victorian public health services.

Recommended strategy 9

Required action

All plans submitted to the Department for major capital works, redesign or structural maintenance of health care facilities should include an infection control risk assessment plan that takes into account the specific community and patient population characteristics, and the expected prevalence of epidemiologically important microorganisms.

Outcome

The 2001–02 Infection Control Survey identified that the majority of health services undergoing refurbishment or redevelopment routinely seek input from infection control. Further improvement is required, however, to ensure that all health services document infection control risk assessment plans prior to redevelopment or structural maintenance.

Recommended strategy 10

Required action

Infection control plans should be submitted to the Department of Human Services by 30 October 1998, and should include a strategy for meaningful involvement of consumers and staff in the assessment and maintenance of standards of cleanliness in public hospitals.

Outcome

The 1998 Survey determined that there were no uniform cleaning standards for Victorian public health services. The Department of Human Services Patient Satisfaction Monitor captures perceptions of cleanliness only. Consequently, in 1999, the Department of Human Services commissioned the development of the document *Victorian Public Hospital Cleaning Standards*. In January 2000, the cleaning standards and funding were distributed to all public health services to assist with implementation of the Cleaning Standards.

An independent audit of cleaning standards, which was undertaken from December 2000 to April 2001, identified that all health services were able to meet the acceptable quality limit of 80 per cent.

In May 2002, all health services were required to report on external audit results for very high, high and moderate risk areas. This identified that the average for very high risk areas was 94.5 per cent across the State, and for high and moderate risk areas the average was 92 per cent across the State. In April 2003, the average result for very high risk areas was 91.1 per cent across the state, and for high and moderate risk areas the average was 90.4 per cent across the state. These results are comparable to the independent audit undertaken in 2001.

Recommended strategy 11

Required action

All health services need to identify a strategy to immediately meet glutaraldehyde safety standards, and a strategy for phasing out the use of glutaraldehyde for high level disinfection purposes, other than in self-contained closed systems, by 30 June 2001.

Outcome

This recommendation was reviewed in 2001 by a specialist subcommittee of the Victorian Advisory Committee on Infection Control (VACIC). A further seven recommendations were made, including, where practicable, the phasing out of glutaraldehyde, other than in self-contained closed systems, by December 2001. Alternative technologies should be sought where possible. The 2001–02 Survey identified that the majority of health services had implemented the VACIC subcommittee recommendations.

Recommended strategy 12

Required action

The Department should make available additional funding to supplement current institutional funding for infection control and monitoring.

Outcome

Over 1998 and 1999, the Victorian Government allocated $13.6 million as one-off funds, mostly allocated to sterilisation equipment. In addition, Category C, D and E health services were funded $4 million through the general equipment fund.

At the end of 1999, $33 million was allocated in recurrent funding over four years for improved infection control and cleaning. Specific funding for infection control and monitoring included:

- $2.2 million allocated annually for additional infection control practitioners.
- $1.6 million allocated annually for implementation of strategic plans.
- $250,000 allocated annually for rural resources.
- $1.1 million is being allocated annually over three years for the establishment of the Victorian Nosocomial Infection surveillance Centre.
- Over $500,000 allocated for a statewide infection control survey.
- $3 million allocated annually for implementation of cleaning standards.

Methodology

Objectives

The objectives of the survey development project were to develop a survey instrument and methodology that would:

- Identify the nature and effectiveness of current infection control policies, programs, and practices in all acute public health services and multipurpose health centres.
- Be based on relevant Australian Standards and national and State guidelines and regulations.
- Allow for comparison with key findings of the Victorian Public Hospitals Infection Control Survey 1996–97.
- Allow health services to benchmark themselves against like categories of health services for key areas.
- Meet all requirements for validity, reliability and reporting capability.
- Allow for efficient and effective data collection, analysis and reporting.
- Limit the number of questions to less than 500.
- Provide a flexible model, with subcomponents or modules that could be used by health services to survey their own infection control programs, policies and practices independently.

Survey design

The survey design and development was undertaken collaboratively with the Department of Human Services, a reference group and the research consultants, Taylor Nelson Sofres (TNS). The consultants were engaged to work with Department of Human Services and the reference group in the design of the survey instrument, and to advise on developing the methodology for the project. Full details of the design and development are in Appendix 1.

The role of the reference group was to provide expert input into the survey instrument development project. The team of experts included:

- Infection control practitioners representing both metropolitan and rural health services.
- A sterilisation expert.
- An infectious disease physician.
- A hospital engineering consultant.
- Other stakeholders from within the Department of Human Services.

The reference group defined seven information areas that would need to be addressed in the survey:

1. The role of hospital management in infection control.
2. Cleaning, disinfection and sterilisation of medical/surgical instruments and equipment.
3. Surveillance activities.
4. Occupational health and safety; staff infection prevention and control.
5. Education and training.
6. Infection control factors in the physical environment.
7. The prevention of the emergence and spread of antibiotic-resistance microorganisms.

Evidence

The philosophy of the reference group was that infection control is not just the responsibility of health service boards of management and infection control practitioners – but of all health care workers. Therefore, responsibility should be demonstrated in all parts of the organisation, including executive management. For this reason, the survey included tangible evidence that complied with current standards and guidelines, and which was validated, where possible, by more than one person in the health service. Twenty-two different roles were identified as key respondents to provide information for the Infection Control Survey.

The information collection requirements were extensive and complex, drawn from interviews, document inspections and observations. It was concluded that the data would be most appropriately collected via a face-to-face survey interview or, in limited circumstances, by telephone interviews. Because of the technical nature of the information required, the surveyors who collected the data had expertise in infection control and sterilisation. Infection control policies, practices, standards and guidelines were considered equally relevant to all organisations, regardless of size, service mix or geography.

Data collection

The use of a computer-assisted personal interview (CAPI) questionnaire, whereby the surveyor enters all survey data directly into a database, reduced data entry error and data entry time. It also achieved a significant reduction in the turnaround time from data collection to reporting.

Mayfield Education Centre (MEC), an industry-recognised provider of education and consultancy in sterilisation and infection control, was appointed as the survey implementation manager for the Infection Control Survey in August 2001. MEC subsequently recruited seven experienced infection control practitioners, chosen because of their knowledge and experience in infection control, sterilisation and

disinfection, computer literacy, communication skills, and previous auditing experience as surveyors.

The surveyors' role was to gather information as per the detailed protocols outlined in the surveyor's manual. It was not the role of surveyors to interpret the data, provide feedback to the surveyed sites on the effectiveness or ineffectiveness of their infection control processes, or engage in education or training of staff.

Pilot and validity

Prior to undertaking the survey, pilot surveys were conducted at eight health services. The purpose of the pilot survey was to test the effectiveness of the infection control survey instrument and the pre-survey questionnaire, as well as the computer-based personal interview approach and MEC interview scheduling.

To assess the validity of survey processes and, in particular, inter-auditor reliability, validation surveys were undertaken at six health services across Victoria. The validation surveys' approach involved two surveyors visiting the selected sites. One took the lead in asking questions, and both independently recorded their responses. Where observations or inspection of documents were required, each surveyor was expected to undertake the observations or document inspection and record the response independently. The analysis of the results demonstrated good consistency of responses, with no particular pattern to the discrepancies noted. The complete results of the validation are reported in Appendix 1.

Individual health service report framework

TNS was responsible for the receipt of survey data, processing, analysis and preparation of individual health service reports. Individual health service reports were provided to health services for each of the detailed items that were surveyed. Each result was based on one of three models, developed to reflect the different types of evidence gathered and the number of individuals who were asked about each issue. The models and ratings applied were developed to apply equally to all health services, regardless of the category type of health service.

The reported results reflect the level of consistency of responses among those surveyed, and is congruent with the reference group's philosophy (that infection control is not just the responsibility of infection control practitioners, but of all health care workers and management). The results indicate an integration of infection control programs, policies and practices within a health service. In addition, the results are largely based on written evidence. For the purpose of the survey, written evidence was only accepted if it complied with all critical elements of current guidelines and standards.

Statewide report framework

While direct comparisons to the 1996–97 Survey are not possible, due to the difference in the new survey instrument developed for the 2001–02 Survey, broad

comparisons are made on key findings and recommendations from the previous survey. To ensure the evaluations are as comparable as possible, where multiple staff were surveyed, the results for the statewide report are focused on the responses of a key respondent.

In keeping with the philosophy of the reference group, the results for the statewide report are based on the different types of evidence gathered (such as verbal or written). Written evidence was only accepted if it complied with all critical elements of current guidelines and standards. For the purposes of this report, high compliance reflects verbal or written existence of relevant policies, practices and programs, while low compliance reflects no evidence of relevant policies, practices and programs.

1 The role of hospital management in infection control

1.1 Overview

Each health service must ensure, at board of management level, that there is a commitment to infection prevention throughout the organisation. This is achieved by implementing and promoting an effective infection control program throughout the health service. To be effective, the program must be adequately resourced, and have executive support and accountability. This can be facilitated by the appointment of an executive sponsor, who will act as an advocate for the infection control service at executive management level.

The 1996–97 Survey identified that communication between the infection control team, management and other key departments was not always effective, with organisational structures to facilitate communication and reporting often absent.

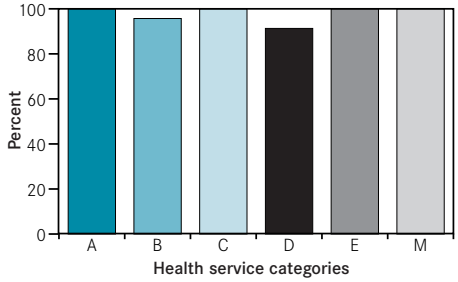
1.2 Strategic plans

In 2000, all Victorian public health services were requested to submit three-year strategic plans addressing the five priority areas for infection control. In 2001–02, all health services verified the existence of Strategic Management Plans for Infection Control, with 39 per cent of health services demonstrating high compliance for regular progress reporting on strategic priorities to the Board of Management. Subsequent to the survey, in August 2002, all health services reported to the Department of Human Services regarding the progress in their strategic management plans.

Seventy-six per cent of health services demonstrated high compliance in producing a documented operational plan that is reviewed annually, with 99 per cent basing the plan on the goals identified in the Strategic Management Plan.

It is a requirement that all health services fully comply with this item.

Figure 1 Executive sponsor represents infection control at executive management



1.3 Executive sponsor

Some of the objectives of the strategic priorities concerned clear identification of executive sponsorship and organisational structures to facilitate communication and reporting for infection control services within and across health services. The executive sponsor ensures that the infection control team plays an integral part in the decision making and communication processes in the health service.

In 2001–02, 99 per cent of health services surveyed identified an executive sponsor for infection control. Of these, 94 per cent represented the infection control practitioner or team at executive management level.

It is a requirement that all health services fully comply with this item.

1.4 Multidisciplinary infection control teams

Eighty-nine per cent of health services demonstrated evidence of the existence of a multidisciplinary infection control team to implement the infection control program. Low compliance in this area was predominately in smaller health services, which would benefit from formal links with an infectious diseases service and the establishment of a team to support the infection control program.

It is a requirement that all health services fully comply with this item.

1.5 Organisational support and resources

To be effective, an infection control program must be appropriately resourced. This includes ensuring adequate personnel, for example, infection control practitioners (ICPs), clerical support and, access to infectious disease physicians, but also access to timely information. Information may be electronic and written, to facilitate research relevant to infection control practice, and should also provide electronic access to patient- and staff-related data to facilitate surveillance and monitoring activities. Physical infrastructure to support the activities of the infection control team or individual should also be provided.

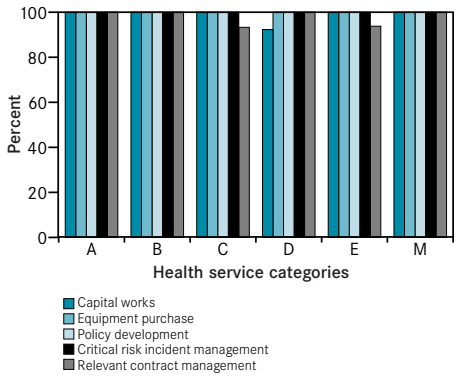
Since the findings of the 1998 report, the Victorian Government has allocated $13.6 million as one-off funding, and $33 million in recurrent funding, to improve infection control in Victorian public health services. Recurrent funding includes funds to improve infection control infrastructure, as well as funds for the appointment and training of 32 additional ICPs for Victorian public health services. Ninety-seven per cent of respondent health services in the 2001–02 Survey demonstrated evidence of organisational support and resources to infection control programs, including:

- Budget allocation.
- IT and computer support.
- Access to the Internet and electronic communication.
- Clerical assistance.
- Access to reference material.
- Support to attend infection control-related conferences and workshops.

1.6 Infection control consultation and risk management

The 1996–97 Survey identified that infection control staff were often excluded from consultation in relation to planning and building and external contracts such as waste and linen. Contracts were often identified as deficit of the requirements for compliance with relevant infection control standards and regulations, and often did not contain penalty clauses for non-compliance. The 2001–02 Survey demonstrated that there had been considerable improvement in consultation with infection control teams, with

Figure 2 Infection control team/practitioner consultation



evidence of high levels of compliance with consultation in relation to new works or refurbishment and relevant contracts. While there has been some improvement in compliance with the inclusion of infection-related clauses and penalties for variance in waste, linen and building contracts, further improvement is required.

Infection control should be an integral component of hospital risk management systems. Internal policies should be developed for critical incident management, such as outbreaks or major breaches in infection control practice. Infection control risk assessments should be undertaken for capital works or refurbishment in the planning, design and construction phases, as well as prior to equipment purchase and policy development.

In 2001–02, it was demonstrated that many health services require improvement in conducting construction-related risk assessments. However, considerable improvement over the results of the previous survey has been demonstrated for infection control consultation, in relation to capital works, equipment purchase, policy development and critical incident risk incident management planning, with 98–100 per cent compliance across all health service categories.

In 2001–02, 91 per cent of health services demonstrated high compliance in integration of infection control with quality and risk management systems, and 100 per cent cited consultation in critical incident risk management planning relevant to infection control.

1.7 Infection control policies

At minimum, infection control policies and procedures should be evidenced based, and incorporate national and State accreditation requirements, National Health and Medical Research Council (NHMRC) and Victorian guidelines, Australian Standards and other relevant legislation or regulations. While the 1996–97 Survey identified that infection control policies, standards and procedure manuals were widely available, improvement in compliance was required. Regular monitoring of adherence and effectiveness of such policies was recommended.

The 2001–02 Survey identified that 96 per cent of responding health services demonstrated high compliance in regularly reviewing infection control policies and procedures, and 89 per cent demonstrated a high compliance in auditing these policies and procedures.

Communication of information on infection control and feedback of results of audits and surveillance activities is essential to the success of any effective infection control program.

It is a requirement that all health services fully comply with this item.

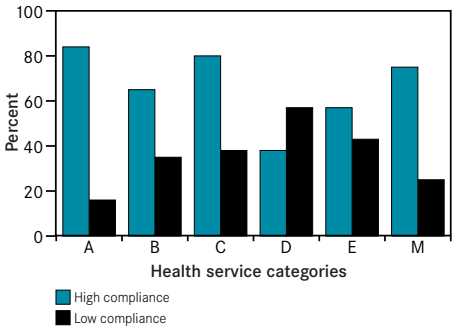
1.8 Links with infectious diseases services

The establishment of formal links with an infectious diseases physician or metropolitan or regional infectious diseases service by all rural regions or consortia is

a key performance area for management commitment, leadership and accountability. The 2001–02 Infection Control Survey identified that 67 per cent of all health services demonstrated high compliance with formal links with an infectious disease service. This was more evident in Category A, B and C health services.

It is a requirement that all health services fully comply with this item.

Figure 3 Information on infection control policies is provided to patients and the community



1.9 Consumer information and communication

Education of patients and the health service community is a strategic priority for all health services. In 2001–02, health services were required to identify mechanisms for developing and communicating infection control information to consumers. Sixty-four per cent of all health services demonstrated high compliance with providing information about infection control policies and procedures to patients and the health service community. Some improvement is required in provision of this information to consumers, particularly in Category D and E health services. Seventy-one per cent of those health services providing infection control information to consumers conducted a needs analysis.

1.10 Achievements since 1996–97

- All health services have an Infection Control Strategic Management Plan in place, and nearly all health services have an executive sponsor. Nearly all health services have allocated organisational support and resources for their infection control program.
- The majority of health services have a multidisciplinary infection control team, and regularly review and audit infection control policies and procedures, including feedback of audit results to relevant departments.
- The majority of health services consult with infection control in relation to capital works planning, equipment purchase, policy development and critical incident risk management.

1.11 Further improvement opportunities

- Category D and E health services need to improve their provision of infection control information, including policies and procedures to patients and other consumers of the health service. Such information may include educational material on infectious diseases, immunisation, handwashing, multi-resistant organisms and other measures to prevent the transmission of health care associated infection.
- Category D, E and M health services need to ensure that they have formal links with an infectious diseases service.

2 Cleaning disinfection and sterilisation of medical and surgical equipment

2.1 Overview

Cleaning, disinfection and sterilisation of surgical instruments and medical equipment in health care facilities is governed by Australian Standard AS 4187[2] and AS/NZ 4815 for office-based health care facilities. All health services should aim to provide a safe environment for staff patients and visitors, by ensuring that all sterilisation services comply with these Australian Standards and other relevant guidelines. A central sterilising and services department (CSSD) manager, who has appropriate qualifications and experience in sterilising services in association with the infection control committee, should oversee compliance with these processes.

The CSSD manager should be consulted on any reusable surgical and medical equipment, purchase for ease of cleaning, and the capability of undergoing reprocessing with agents available within the health service or by external service providers. The CSSD manager should ensure that policies and procedures that govern reprocessing throughout the organisation are based on AS 4187, and include manufacturers' requirements.

Emergency or 'flash' sterilisation should only occur within the parameters prescribed in AS 4187. These requirements should be documented and distributed to all areas within each facility where flash sterilisation might occur. Flash sterilisation should only be used in operating suites or CSSD, but should not be used routinely to compensate for inadequate instrument inventory. Episodes of flash sterilisation should be monitored and reported to key stakeholders as a measure of performance. Reasons for use, including compliance with requirements of AS 4187, should be included in reporting criteria.

Regardless of whether or not re-use of medical or surgical equipment labelled 'single use' or 'single patient use' occurs within the facility, health services should have a policy that clearly states the organisation's position on this issue. If re-use does occur then policies and protocols to govern re-use should be developed for each item of equipment to be reprocessed. It is also recommended that a multidisciplinary committee should be established to authorise, oversee and monitor re-use and quality control processes throughout the organisation. This is consistent with the recommendations of the NHMRC report on re-use of single-use devices.[3]

In February 2002, the Australian Health Ministers Advisory Committee (AHMAC) agreed that any reprocessing of single-use devices for the purpose of re-use is a manufacturing activity that requires regulation by the Therapeutic Goods Administration (TGA), and that the TGA should regulate to the same level as the original manufacturer. This recommendation is consistent with recent US Federal

2 *AS 4187, Australian Standards 1998,* ***Cleaning, Disinfecting and Sterilising Re-Usable Medical and Surgical Equipment and Maintenance of Associated Environments in Health Care Facilities****.*

3 ***Report of the NHMRC Expert Panel on Reuse of Medical Devices Labelled Single Use****, 1997, http://www.health.gov.au/nhmrc/publications*

Drug Administration (FDA) requirements[4] for reprocessing of single-use devices. In May 2002, the TGA developed a regulatory framework options paper that included a requirement to comply with the Code of Good Manufacturing Practice (GMP). This includes auditing and licensing of specified devices, patient consent, tracking, labelling and packaging, and incident report and recalls. TGA will publish a discussion paper in the near future.[5] Health services should continue to monitor progress on this issue.

Tracking systems should be established for surgical equipment that is either chemically or steam processed to enable follow-up of patients if sterilisation or disinfection parameter failures are identified. All health services are required to comply with Recommendation 7 of the *Victorian Advisory Committee on Infection Control Sub-Committee Report* on the review of the Recommendation 11 of the *1998 Infection Control Taskforce Report*,[6] which required tracking systems for chemically processed equipment to be implemented by July 2002.

To ensure compliance with AS 4187, audits should be conducted throughout each health service. Compliance with reprocessing of medical and surgical equipment, and adherence to the required standards for the integrity of commercially processed or hospital-processed sterile stock should be included. All equipment used for reprocessing surgical and medical equipment should be maintained in good condition and be calibrated for performance as prescribed by the manufacturer and AS 4187.

Glutaraldehyde is a chemical disinfectant commonly used to process heat-sensitive equipment. Its use should comply with WorkCover Victoria, Occupational Health and Safety,[7] and Hazardous Substance Regulations[8] Victorian Department of Human Service[9] Gastroenterological Nurses College of Australia (GENCA) guidelines,[10] as well as AS 4187. In 2001, health services were advised to phase out the use of glutaraldehyde and to seek safer alternatives where practicable by February 2002.

4 *United States Department of Health and Human Services, August 2000,* ***Enforcement Priorities for Single-Use Devices Reprocessed by Third Parties and Hospitals****, http://www.fda.gov/cdrh/comp*

5 *Therapeutic Goods Administration,* ***TGA News, July 2002****, Issue 38, http://www.health.gov.au/tga/docs/html/tganews/news38/dev.htm#reuse*

6 *Victorian Department of Human Services, August 2001, VACIC* ***Review Subcommittee Report on Recommendation 11 of 1998 Infection Control Task Force****, http://infectioncontrol.health.vic.gov.au*

7 *Victorian Government,* ***Occupation Health and Safety Act 1985****, Act No 10190–1985, www.austlii.edu.au/au/legis/vic/consol_act/ohasa1985273/*

8 ***Occupation Health and Safety (Hazardous Substances) Regulations 1999****: 143–1999, http://www.dms.dpc.vic.gov.au*

9 *Victorian Department of Human Services, Human Services Promotion Unit, 1996,* ***Guidelines for the Use of Glutaraldehyde in the Health Industry****.*

10 *Gastroenterological Society of Australia and Gastroenterological Nurses Society of Australia, 2000,* ***Infection Control in Endoscopy Guidelines 2000****, Sydney, NSW.*

2.2 Qualifications of CSSD managers or equivalent

In 1996–97 it was identified that the experience and qualifications of CSSD managers was not always commensurate with the level of responsibility and work requirements. The 1996–97 Survey Report recommended that CSSD managers or their equivalent should have appropriate qualifications and experience in sterilising processes. These persons should then oversee all cleaning, disinfection and sterilisation processes within the facility, as defined in AS 4187.

In 2001–02, 85 per cent of all respondent health services with central sterilising services identified managers or equivalent with highest qualifications, including:

- Certificate in Sterilisation and Infection Control
- Infection Control Graduate Diploma
- Perioperative Nursing Certificate
- Graduate Diploma (or Masters)
- Certificate III in Health Sterilising Practice for Technicians.

Larger, complex health services should ensure that managers who are specifically responsible for sterilisation services within or across the health service are appropriately qualified in sterilisation and disinfection, a perioperative qualification on its own is not sufficient. In many smaller health services, the operating suite manager assumed overall responsibility of operating suites, including CSSD, and appropriately qualified technicians oversaw day-to-day functions of the CSSD. All health services should continue to ensure that staff who have responsibility for cleaning, disinfecting or sterilising surgical or medical equipment receive formal orientation and ongoing training in these processes, as per the requirements detailed in Section 8 of the current AS 4187.

It is a requirement that all health services fully comply with this item.

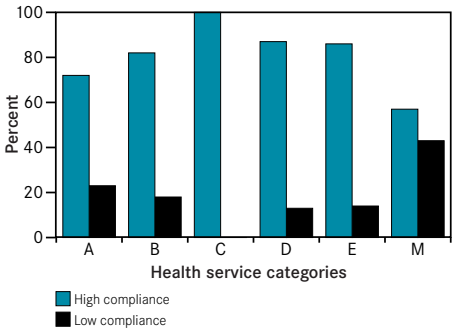
2.3 Health service responsibility for sterilising services

In 1996–97 it was identified that sterilisation of surgical instruments occurred in a range of departments outside CSSD or theatre sterilising and supply units (TSSU), and were not directly under the supervision of the CSSD or TSSU manager. In 2001–02, it was identified that in 94 per cent of respondent health services, the CSSD manager, or the person responsible for this role, had responsibility for cleaning, disinfection and sterilisation of reusable instruments across the organisation.

Recommendations from the 1996–97 Survey also included ensuring that contracts for externally provided services complied with current infection control, disinfection and sterilisation guidelines and standards. In 2001–02, ten health services (made up of five Category A, four Category B and one Category E services) were identified as using external contractors for CSSD services. Seven of these health services demonstrated a high level of compliance for ensuring that external contracts included clauses related to AS 4187.

It is a requirement that all health services fully comply with this item.

Figure 4 The CSSD manager is consulted regarding equipment purchasing



2.4 Equipment purchasing

Health care services need to ensure that instruments and equipment that are considered for purchase are assessed for ease of cleaning, as well as for the ability to withstand disinfection and sterilisation processes. The 1996–97 Survey Report recommended that the CSSD manager, or equivalent, be consulted in respect to instrument/equipment purchase. In 2001–02, 79 per cent of all health services demonstrated high compliance in this area.

Eighty-nine per cent of respondent health services demonstrated high compliance with ensuring that the decision to purchase instrument or equipment included an assessment of ease of cleaning. Ninety-seven per cent also demonstrated high compliance in ensuring that the decision to purchase included an assessment of whether the instrument or equipment's ability to undergo the cleaning, disinfection or sterilisation processes was available within the health service.

2.5 Cleaning, disinfecting and sterilisation policies and practices

The 1996–97 Infection Control Survey report recommended that written policies and procedures for cleaning, disinfecting and sterilising reusable instruments and equipment be available throughout the health service, and that these be consistent with Australian Standards and other guidelines designed to minimise transmission of infection. In the 2001–02 Survey, while 79 per cent of respondent CSSDs in health services demonstrated high compliance with this recommendation, other departments within the health service did not perform as well. Other departments included in the survey, where applicable, were:

- Operating suite
- Day procedure unit
- Endoscopy
- Intensive care unit
- Neonatal intensive care unit
- Medical imaging department
- Outpatient department
- Emergency department and podiatry.

It is a requirement that all relevant departments within health services fully comply with this item.

2.6 Workflows and layout of reprocessing areas

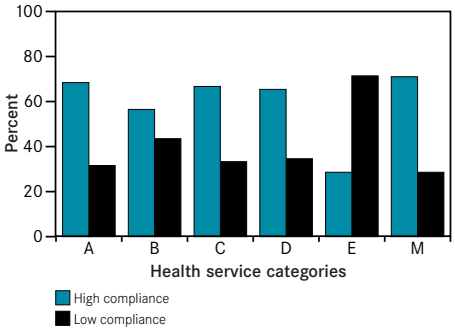
The 1996–97 Infection Control Survey identified that the layout of many reprocessing departments did not facilitate good infection control practice. This was evidenced by the inability to separate clean and dirty areas to avoid crowding,

optimise cleaning and reducing the possibility of contamination of already cleaned items. Departments identified as most affected included:

- CSSD
- Emergency department
- Outpatient department.

These and other high risk areas were reviewed in the 2001–02 Survey for evidence of layout of work areas and workflows to promote effective equipment reprocessing. Sixty per cent of areas surveyed demonstrated high compliance with this requirement. Some improvement is required, however, particularly in Category D and E health services.

Figure 5 Evidence of audits for compliance with AS 4187



2.7 Audits for compliance with AS 4187

The 1996–97 Survey Report recommended that internal audits be conducted to assess adherence to policies and procedures consistent with AS 4187 for reprocessing of surgical and medical equipment. In 2001–02, all health services were requested to demonstrate evidence of audits for compliance with AS 4187 in clinical areas. High compliance for this survey item was identified in 58 per cent of all health services. All categories of health service require some improvement in this area, however, particularly Category E health services.

It is a requirement that all health services fully comply with this item.

Tools to assist with internal audits are available on the Department of Human Services Infection Control website. Some of these tools have been developed by the Rural Infection Control Practice Group (RICPRAC) and by NSW Health. All are a valuable resource for infection control practitioners.

2.8 Tracking

Over the last few years, there have been a number of incidents in Australian hospitals involving breaches in the sterilisation or high level disinfection of medical and surgical equipment. It is recommended that health services have a demonstrated ability to track instruments to individual patients, in order to enable follow-up and assessment for infection risk if such breaches occur.

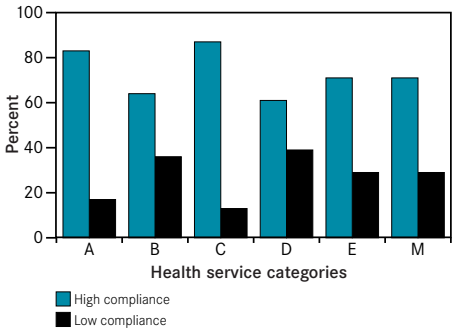
As part of the 2001–02 Infection Control Survey, all health services were requested to demonstrate evidence of policies and procedures for the tracking and recall of steam sterilised or chemically processed items. Seventy-eight per cent of all respondent health services identified high compliance with this survey requirement for steam-sterilised items. Tracking and recall policies for chemically reprocessed items, such as endoscopes, were identified in only 51 per cent of all respondent health services. Improvement is required in developing such policies across all health services, where chemical reprocessing of surgical and medical equipment occurs.

Seventy-three per cent of health services had identified batch-tracking systems for steam-processed items, while 55 per cent had individual patient tracking systems in

place. Forty-six per cent of health services had identified batch-tracking systems for chemically processed items, while 48 per cent had individual patient tracking systems in place.

It is a requirement that all health services fully comply with this item.

Figure 6 Evidence that policies and procedures for sterile stock meet requirements of AS 4187



2.9 Storage, handling and transportation of sterile stock

The 1996–97 Survey identified that many storage areas in sterile supply and stores areas were in poor condition, and that practices were not consistent with AS 4187. All categories of health service required improvement in this area. The proper handling, storage and transport of health services processed and commercially manufactured sterile stock is essential to ensure that sterility is not compromised. In 2001–02, all health services were required to demonstrate evidence of written policies and procedures for the storage, handling and transportation of commercially obtained and hospital manufactured sterile stock, consistent with the requirements of AS 4187. Seventy-two per cent of all respondent health services demonstrated evidence of such policies and procedures that were applicable across the health service. Some improvement is still required across all categories of health service.

It is a requirement that all health services fully comply with this item.

Surveyors in 2001–02 were required to inspect a sample of storage areas in clinical departments for required design features, maintenance and cleaning schedules, visual inspection for cleanliness, physical separation of non-sterile and sterile stock, storage above floor height and evidence of any storage in cardboard cartons. In particular, surveyors were seeking compliance with Section 9 of the current AS 4187. Departments inspected, where applicable, included:

- Operating suite
- Day procedure unit
- Endoscopy unit
- CSSD
- Outpatients department
- Supply department.

Fifty per cent of health services had demonstrated high compliance, with evidence of a storage area for sterile stock that was consistent with AS 4187. Further improvement across all health services is required.

CSSD and supply managers, or their equivalent, were asked to identify if sterile stock was transported in accordance with the requirements of AS 4187. Eighty-six per cent of health services demonstrated high compliance with this survey item. Supply managers were also asked to identify if work practices ensured the integrity of sterile stock to prevent contamination. Only 54 per cent of health services demonstrated high compliance with this item, and improvement is required in all facilities. However, stock rotation was incorporated into storage practices in

accordance with AS 4187 in 99 per cent of health services. The 2001–02 Survey identified that while the majority of health services were able to demonstrate education of CSSD staff in relation to storage, handling, transportation and recognition of sterile stock, some improvement is still required for supply department staff across all facilities. Education of health care personnel on the handling of sterile stock is further described in Section 5 of this report.

It is a requirement that all health services fully comply with this item.

2.10 Flash sterilisation

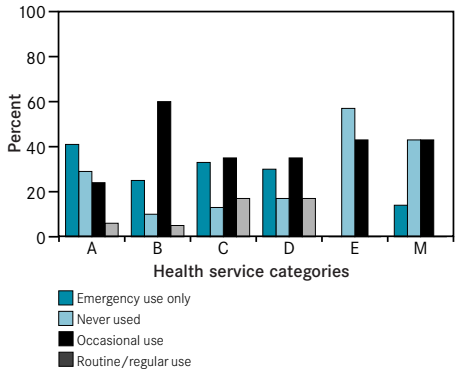
Flash sterilisation should be restricted to emergency situations, as outlined in AS 4187, and facilities should ensure that there are documented policies governing its use. The 1996–97 Infection Control Survey identified that there was significant inappropriate use of flash sterilisation due to insufficient instrument inventory. In 2001–02, it was demonstrated that flash sterilisation was used in CSSD within the parameters of AS 4187 by 51 per cent of respondent health services, with 23 per cent citing 'never used', and 28 per cent citing use only in 'emergency' situations. Forty per cent of health services continue to use flash sterilisation 'occasionally', and nine per cent reported 'routine or regular use'.

Of those respondent health services identified as using flash sterilisation in CSSD, 50 per cent demonstrated high compliance for existence of policies and procedures defining its use. Of those, 79 per cent were able to provide evidence of logbooks for monitoring the use of flash sterilisation within the health service.

Further improvement is still required to ensure that use of flash sterilisation across all health services complies with the requirements of AS 4187. All health services should have a documented policy governing flash sterilisation within the organisation, and frequency of use should be monitored and documented. Results of monitoring should be reported to key stakeholders within the organisation.

It is a requirement that all health services fully comply with AS 4187 in this area.

Figure 7 Flash sterilisation reasons for use in CSSD



2.11 Re-use of single-use items

The risks associated with re-use of single use or single-patient use items remains contentious, with no firm evidence from the scientific literature yet providing an answer. However, recent US FDA regulations and Australian TGA proposals governing the re-use of single-use devices have been established. The 1996–97 Infection Control Survey acknowledged the lack of consensus and continued worldwide practice of re-use, but identified that where re-use occurred in Victorian health services, there were few systems to oversee the practice within each facility. The 1996–97 Survey recommendations included ensuring that health services that re-used single-use devices had documented plans for the practice, and recommended that committees be established within organisations to review re-use of individual items.

In 2001–02, all health services were asked to identify if re-use of single use medical devices occurred in the organisation. Eighty-seven per cent indicated that they did not re-use single-use devices. Category A health services predominately cited re-use. Eighty-five per cent of health services that identified re-use achieved high compliance in demonstrating a policy governing its practice. The majority of health services that stated re-use of single-use devices occurred also identified committees to oversee the practice.

It is a requirement that all health services fully comply with this item.

In 2001–02 it is evident that most health services have elected not to re-use single-use items. In larger health services, where re-use does occur, policies have been developed in support, and committees established to monitor the practice in most instances. The few other health services who re-use single-use items need to ensure that they have clearly defined polices governing such practices within their organisations, and that a multidisciplinary committee is established to monitor and approve re-use and quality control of each item until clear national guidelines are finalised.

Health services should be aware of the draft recommendations of the 1997 NHMRC report, the *Australian Health Ministers Advisory Council Working Party Report*,[11] and the recent TGA and US FDA recommendations and regulations when developing such policies. These regard reprocessing of single-use medical devices for the purposes of re-use to be a manufacturing activity, and consequently will require the same rigorous standards of safety and efficacy.

2.12 Calibration, performance testing and equipment maintenance

The 1996–97 Infection Control Survey identified that there was often a lack of documentation supporting the maintenance of sterilisation equipment and validation of sterilisation cycles. In 2001–02, documented policies and procedures for calibration, performance testing and maintenance of equipment used for cleaning, disinfection and sterilisation consistent with AS 4187 were sought from a sample of clinical departments. These included CSSD and emergency departments, where they existed within health services. Sixty-nine per cent of CSSDs had written policies and procedures for calibration, performance testing and maintenance of equipment, while only 19 per cent of emergency departments had this documentation.

Detailed inspections by surveyors of cleaning, thermal cleaning and disinfection, chemical disinfection and sterilisation equipment also occurred in the following clinical areas within health services:

11 *Australian Health Minister's Advisory Council Working Party on Re-Use of Medical Devices Labelled as Single Use, April 2000,* ***Research Project Addressing Potential Infectious Diseases Related to Re-Use of Cardiac Electrophysiology Catheters:*** *Part B*

- CSSD
- Operating suite
- Day procedure unit
- Endoscopy unit
- Emergency department
- Dental unit
- Intensive care unit or neonatal intensive care unit
- Outpatients department
- Podiatry department.

Equipment in these areas was inspected for evidence of routine monitoring, including physical, chemical and biological indicators, and maintenance and calibration. Logbooks, service and maintenance records were required to be sighted for each piece of equipment examined by surveyors. Compliance with AS 4187, detailed in Sections 2, 7 and 8 of the current standard, was expected.

While most operating suites, CSSDs, day procedure units, endoscopy units, dental and podiatry departments performed well for this survey item, other departments required improvement in monitoring of sterilisation or disinfection processes and maintenance and calibration of equipment.

It is a requirement that all health services fully comply with this item.

2.13 Glutaraldehyde

Glutaraldehyde is high level chemical disinfectant used for disinfecting heat-sensitive medical equipment. Recently, there have been concerns raised over its continued use, on occupational health and patient safety grounds. The Victorian Department of Human Services established clear guidelines for the use of glutaraldehyde in the health industry. The use of alternative technologies and chemical disinfection agents, however, should be investigated, with the aim to phase out the use of glutaraldehyde where practicable.

The 1996–97 Infection Control Survey identified that instrument disinfection and sterilisation practices did not always adhere to the Gastroenterological Nurses College of Australia (GENCA) guidelines, or AS 4187, and that there was poor adherence to safety procedures. The 1996–97 Survey Report recommended the phasing out of glutaraldehyde, other than in self-contained closed systems.

In 2001, a subcommittee of the VACIC reviewed Recommendation 11 of the 1998 Infection Control Task Force Report and made seven further recommendations. This included that all open systems of glutaraldehyde, except those required for non-immersible endoscopes, that is, trans-oesophageal endoscopes, ultrasound and foetal monitoring probes, and other endoscopes that cannot withstand submersion or pressure gradients, be phased out by December 2001.

The 2001–02 Infection Control Survey sought to identify the number of health services using glutaraldehyde and, for those so identified, how many demonstrated documented policies and procedures, consistent with the requirements of the current GENCA and Department of Human Services guidelines and AS 4187, which govern the use, storage and handling of this chemical agent. Information was also sought in order to identify the types of systems in use at each health service. Departments included in the survey were:

- Operating suite
- CSSD
- Day procedure unit
- Endoscopy unit.

Infection control practitioners were also asked to identify if glutaraldehyde was used in the facility. Sixty-four per cent of all health services surveyed responded that they did not use glutaraldehyde in any department. Thirty-eight health services still used glutaraldehyde. Of these, 22 reported closed systems within the departments surveyed, while 16 reported open systems. There was an indication that health services were moving towards alternative agents, such as ortho-phthaldehyde (OPA), closed systems, including Soluscopes and Medivator, or alternative technology, such as Sterrad or Steris. These changes have required many health services to undertake negotiation with manufacturers about product warranties to ensure that the transition from glutaraldehyde to other technologies does not affect the integrity of instruments.

The areas where glutaraldehyde was more likely to be used were CSSD, endoscopy and operating suites. Only two health services used glutaraldehyde in day procedure units, of which one used it in an open system.

Table 1 Major users of glutaraldehyde

Department or unit	Proportion of health services that used glutaraldehyde	Proportion of these that had closed systems in place
CSSD	19%	55%
Endoscopy	14%	87%
Operating Suites	12%	44%

Documented policies and procedures for the use, storage and handling of glutaraldehyde were evident in the majority of health services. However, some improvement was required in a small number of health services (other than Category A), to ensure that policies and procedures were consistent with AS 4187 and GENCA and Department of Human Services guidelines.

It is a requirement that all health services fully comply with AS 4187, GENCA, Department of Human Services, VACIC and Occupational Health and Safety guidelines in this area.

2.14 Achievements since 1996–97

- In the majority of health services, CSSD managers, or persons responsible for this role, have responsibility for cleaning, disinfection and sterilisation of reusable instruments. The CSSD manager, or person responsible for this role, is also consulted regarding respect of instrument purchase in the majority of health services.
- Instrument purchase was based on the ease of cleaning and the ability to undergo disinfection and sterilisation.
- The majority of health services demonstrated compliance in ensuring that external contracts for infection control services included clauses related to AS 4187.
- The majority of health services demonstrated high compliance with policies and procedures for the storage, handling and transportation of sterile stock. Nearly all health services incorporate stock rotation into storage practices, consistent with AS 4187.
- The majority of health services do not re-use single-use devices.

2.15 Further improvement opportunities

- All health services should ensure that any staff responsible for sterile medical and surgical equipment have sufficient training and competencies. This includes those who process or store such equipment, including supply department staff, as well as end users.
- All health services are required to conduct internal audits on AS 4187 compliance. In particular, improvement is required in Category E health services.
- All health services should ensure that workflows and the layout of areas for cleaning, sterilisation and disinfection are consistent with AS 4187, particularly Category D and E health services.
- All health services are required to have policies for tracking systems for steam and chemically processed items.

- All health services are required to have storage areas for sterile stock that are consistent with AS 4187.
- All supply departments are required to have work practices that ensure the integrity of sterile stock is maintained.
- All health services need to ensure that policies are in place to govern the use of flash sterilisation, and that its use is monitored and documented. Flash sterilisation should only be used in emergency cases.
- All health services need to ensure that all thermal and chemical disinfection and sterilisation equipment used throughout each facility is monitored for effectiveness, and that they have clearly defined maintenance and calibration schedules.
- Health services continuing to use glutaraldehyde should pursue alternative high level disinfecting or sterilising agents, where practicable, as new solutions for particular instruments become available.

3 Surveillance activities

3.1 Overview

The US Study on the Efficacy of Nosocomial Infection Control (SENIC) project[12] demonstrated that intensive hospital-acquired infection surveillance was one of four major elements of a highly effective infection control program, which would reduce hospital-acquired infections. Since then, surveillance has become an integral component of infection control programs worldwide.

All health services should have clear objectives for undertaking hospital-acquired infection surveillance, with defined links to internal quality and risk management systems. These objectives should be reviewed and updated regularly to meet new infection risks and changing patient populations within each health service. Surveillance plans should be developed, being mindful of casemix, available resources and accreditation or other regulatory requirements. It is recommended that surveillance plans are formalised and reviewed annually, and that they clearly describe the patient population and procedures to be surveyed, and prescribe the definitions and methodology selected. These plans should be endorsed by the infection control committee, and incorporated into infection control strategic and operational plans. Plans should be widely disseminated to all stakeholders within each organization, and regular reporting of surveillance outcomes should occur.

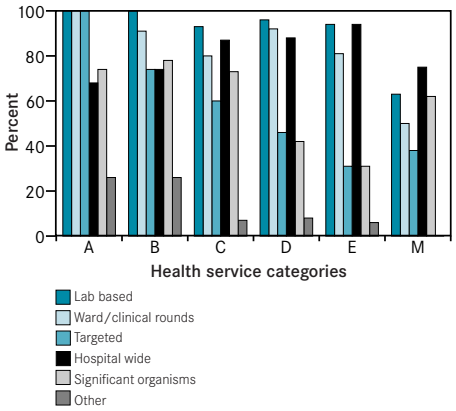
Since the release of the 1996–97 Victorian Infection Control Survey, the results of the Expert Working Group on Hospital Acquired Infection Surveillance have been published. The working group recommended the establishment of a central coordinating body for surveillance for Victorian public health services. The VICNISS Hospital Acquired Infection Surveillance Coordinating Centre was established in February 2002, and will use the Center of Disease Control (CDC) US, National Nosocomial Infection Surveillance (NNIS)[13] methodology and definitions for monitoring and reporting surgical site infection, bloodstream infections and intensive care-related infections.

The VICNISS Coordinating Centre Hospital will train infection control personnel in NNIS definitions and methodology. Risk-adjusted surveillance data will be aggregated, enabling benchmarking of performance by participating health services. The phased implementation of VICNISS will commence in October 2002, with other health services that have over 100 beds following in 2003. VICNISS surveillance systems for smaller health services and long-term care facilities will be developed within two years of commencement, in consultation with key stakeholders.

12 *Haley R, Culver D, White J et al, 1985, **'The Efficacy of Infection Surveillance and Control Programs in Preventing Infections in US Hospitals'**, American Journal of Epidemiology, 121 (2): 182–205.*

13 *Gaynes RP, Horan TC, 1996, **'Surveillance of Nosocomial Infections'** in Mayhall CG (Ed.), Hospital Epidemiology and Infection Control, third edition, Williams and Wilkins, Baltimore.*

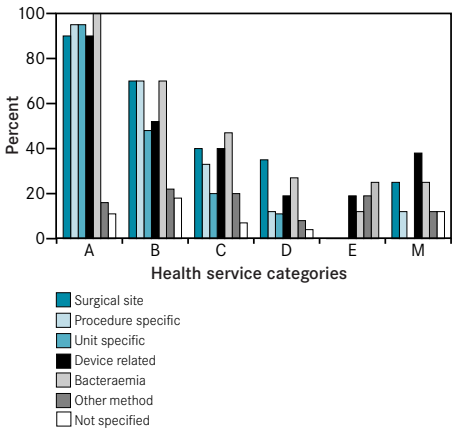
Figure 8 Surveillance methods



3.2 Surveillance activities in Victorian health services 2001–02

The 1996–97 Survey found that while hospital-wide surveillance programs were common across all hospital categories, there was inconsistency in data definitions. Surveillance data was not forwarded to key stakeholders. The 2001–02 Infection Control Survey sought to identify current surveillance activities in Victorian health services. Ninety-six per cent of all health services identified a plan for surveillance within their organisation. Of those health services with an identified surveillance plan, 94 per cent conducted laboratory-based surveillance, with 87 per cent incorporating clinical ward rounds to identify infections. Sixty per cent included monitoring of significant organisms, such as multi-antibiotic resistant bacteria. Hospital-wide infection surveillance was conducted by 81 per cent of respondent health services, with a greater proportion of this type of surveillance conducted in Category C, D, E and M health services. Targeted surveillance was conducted more commonly in Category A and B health services.

Figure 9 Targeted surveillance



3.3 Targeted surveillance

Health services often choose to allocate limited infection control resources to monitoring those procedures, devices or patient care units considered at greater risk of infection and are associated with poorer patient outcomes and increased health care expenditure. Such surveillance may provide opportunities to reduce rates of infection by feedback to clinicians, enabling critical review of procedures and the subsequent development of intervention strategies that will improve patient outcomes. Targeted surveillance may include intravascular device-related, intensive care unit and specific surgical site procedures. Of the 65 health services that conducted targeted surveillance, 50 per cent included surveillance of health care-associated bacteraemia, and 47 per cent surveillance of surgical site infections. Invasive devices were monitored by 43 per cent of respondent health services.

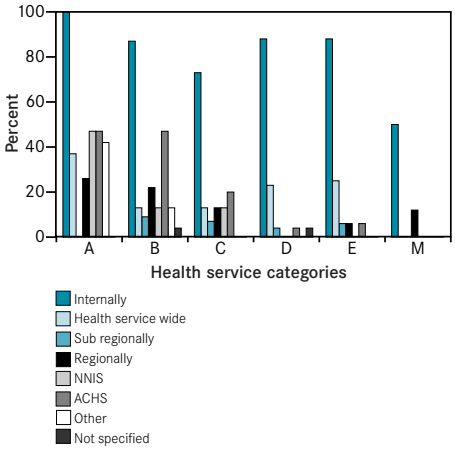
3.4 Definitions used for surveillance

Across the State, no single methodology or definitions for surveillance was described as being used in the health services reporting a surveillance plan. Most health services used a combination of methods, including NNIS, Australian Council of Health Care Standards (ACHS), or modified NNIS and ACHS.

In Category A health services, the most common definitions and methodology described for surveillance was NNIS, with 84 per cent of health services using this method. Thirty-four per cent of health services also described using Australian Council of Health Care Standards (ACHS) definitions and methods, with these being less commonly used in smaller health services. Category D health services more commonly used modified NNIS and 'other' definitions, while Category E and M more commonly used 'other' methods and definitions. It is important that surveillance programs are developed with an awareness of local patient demographics and

priorities. Smaller health services with a greater proportion of long-term care residents and less invasive procedures may use other definitions and methodology, such as those described by McGeer et al[14] and Smith and Rusnak,[15] which may be more appropriate in these settings. VICNISS Hospital Acquired Infection Surveillance will develop and implement methodologies for smaller agencies by 2004.

Figure 10 How benchmarking of surveillance data is conducted



3.5 Analysis and reporting of surveillance data

Analysis and feedback of surveillance data to stakeholders within health care organisations has been identified as having a positive effect on the reduction of health care associated infections.[16] Eighty-five per cent of the health services surveyed reported analysis of surveillance data, with 83 per cent of these demonstrating evidence of feedback of data to key stakeholders within organisations. Eighty-five per cent of those health services demonstrating analysis of data used it to benchmark performance internally. Other methods for measuring performance included across health services, regions or subregions, or against NNIS or ACHS data.

All health services demonstrating analysis of surveillance data reported that it was used to improve clinical outcomes, including changes to policies and education programs, or to identify a substantiated improvement in infection rates.

3.6 Achievements since 1996–97

- The majority of health services have a surveillance plan in place.
- Nearly all health services identified a plan for surveillance within their organisation.
- The majority of health services demonstrated evidence of analysis of surveillance data and feedback of data to key stakeholders within organisations.

3.7 Further improvement opportunities

- All health services need to develop surveillance programs appropriate to their local patient demographics and priorities.
- VICNISS Hospital Acquired Infection Surveillance will develop surveillance systems for smaller health services and long-term care facilities, in consultation with key stakeholders.

14 *McGeer A et al, 1991, **'Definitions of Infection for Surveillance in Long-Term Care** Facilities', American Journal of Infection Control, 19 (1): 1–7.*

15 *Smith P, Rusnak P, 1997, **'Infection Prevention and Control in the Long-Term Care Facility'**, American Journal of Infection Control, 25: 488–512.*

16 *Gaynes, R, 1997, **'Surveillance of Nosocomial Infections: A Fundamental Ingredient for Quality'**, in Infection Control and Hospital Epidemiology, 18 (7): 475–478, www.slackinc.com/general/iche/stor0797/edit.htm*

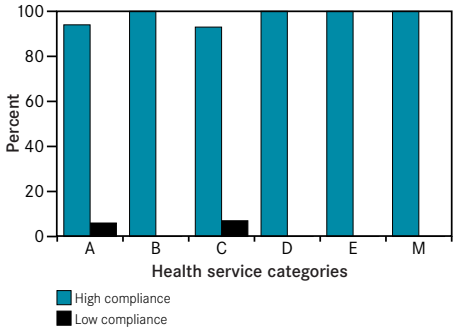
4 Occupational health and safety; Staff infection prevention and control

4.1 Overview

Health care workers (HCWs) working in health care settings are at increased risk of exposure to, and subsequent transmission of, vaccine-preventable diseases. Each health service is responsible for providing appropriate employer-sponsored screening, testing and vaccination programs. These programs should be available to all employees, including volunteers. Health services should ensure that locum medical, nursing, allied health staff, students, and other personnel who have direct patient contact are vaccinated in accordance with recognised guidelines. The Victorian Government has allocated $600,000 to health services to improve staff vaccination and protection.

Documented staff immunisation policies and procedures based on State, national and international guidelines for immunisation and infection control for health care personnel[17, 18, 19, 20] should be available within the health service and accessible to all staff. These policies should be developed in consultation with the infection control team or committee. Provisions should be made within these policies for ensuring evidence is provided that non-hospital employees, such as agency staff, contractors and students, are immunised in accordance with published guidelines.

Figure 11 Evidence of policies for immunisation



4.2 Immunisation policies

The 1996–97 Survey identified that while most Category A and B health services had immunisation policies in place, Category C, D and E health services needed to develop and implement such policies. The 2001–02 Survey ascertained that 98 per cent of all Victorian health services demonstrated a high compliance in this area.

The most common methods identified of informing staff of these immunisation policies were through induction programs, infection control manuals, posters and newsletters.

4.3 Immunisation programs

Recommendations from the 1996–97 Survey Report included ensuring the availability of immunisation programs to all paid employees. These policies should be consistent with the requirements of currently published guidelines for immunisation of HCWs. It further recommended that the employer fund such immunisation programs.

17 *Victorian Department of Human Services, 2000,* ***Immunisation Guidelines for Health Care Workers****, second edition.*

18 *National Health and Medical Research Council, 2000,* ***Immunisation Guidelines****, seventh edition.*

19 *NHMRC, 1996,* ***Infection Control in the Health Care Setting****, www.nhmrc.gov.au/publications*

20 *Bolyard E, Tablan O, Williams W, Pearson M, Shapiro C, Deitchman S, 1998, The Hospital Infection Control Practices Advisory Committee,* ***'Guideline for Infection Control in Health Care Personnel'*** *in American Journal of Infection Control, 26: 289–354, www.cdc.gov/ncidod/hip*

In 2001–02, 94 per cent of health services demonstrated high compliance in making immunisation available to paid employees, with most health services funding these programs.

Fifty-two per cent of health services indicated that they did not have a volunteer program, but of those who did, 75 per cent demonstrated high compliance in including volunteers in their immunisation program.

4.4 Systems for documenting staff infection control and immunisation

Recommendations from the 1996–97 Survey Report included maintaining a staff database to document all immunisations and the results of any screening tests. Integrity and confidentiality of such databases should be ensured. In May 2000, all health services were provided with one-off funding to assist with the purchase or development of software for the purpose of maintaining staff records, as well as computers in the rural sector. The 1996–97 Infection Control Survey Report further recommended that staff should be provided with records of immunisation and results of screening tests. In the 2001–02 Survey, 98 per cent of health services demonstrated high compliance in providing evidence of a database for documenting immunisation and screening programs, with 97 per cent being able to provide health care workers access to their immunisation records and screening test results on request.

It is a requirement that all health services fully comply with this item.

4.5 Management of health care workers exposed to communicable diseases and blood borne pathogens

The 1996–97 Survey identified that guidelines for the management of HCWs exposed to infectious diseases required improvement across all categories of health services. It was recommended that policies be developed and implemented in consultation with the infection control team. The 2001–02 Survey found that in 99 per cent of instances, this requirement was achieved by all health services, with 95 per cent of respondents also citing the development of these policies in consultation with the infection control team.

It is a requirement that all health services fully comply with this item.

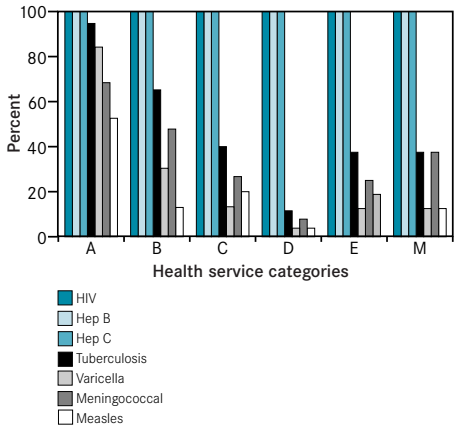
4.6 Evidence of policies for management of exposure to blood borne viruses

All HCWs, particularly those with potential exposure to blood and body substances, should have access to appropriate testing and counselling in the event of occupational exposure. A twenty-four hour service should be available in the event of such an exposure, and should include rapid serological testing and access to post-exposure prophylaxis (PEP). In 2001–02, all health services had policies in

place for management of exposures to blood borne viruses. While the majority of health services demonstrated access to specialist counselling for exposures to HIV and hepatitis C, some improvement is still required in smaller health services for access to hepatitis C counselling, particularly in Category D and M services. Ninety-eight per cent of health services included procedures for management of out-of-hours exposure to HIV, hepatitis B and hepatitis C.

It is a requirement that all health services fully comply with this item.

Figure 12 Diseases for which there is a post-exposure policy



4.7 Post-exposure polices to infectious diseases

In 2001–02, key respondents in health services were required to identify the existence of policies for the post-exposure management of common infectious diseases.

While all health services demonstrated post-exposure policies for blood borne viruses, policies for post-exposure management to other infectious disease such as TB, measles, varicella zoster virus (chickenpox) and meningococcal disease, required improvement. Most Category A health services cited policies for tuberculosis and varicella, but policies for other infectious diseases, such as measles and meningococcal disease, were reported less frequently. Some Category B health services identified policies for post-exposure management to TB, with limited reference to policies for other infectious diseases, including measles, varicella and meningococcal disease. All other categories of health services demonstrated little compliance with policies for pulmonary mycobacterium tuberculosis (TB), measles, varicella zoster virus (chicken pox) and meningococcal disease.

It is a requirement that all health services fully comply with this item.

4.8 Achievements since 1996–97

- Nearly all health services had immunisation policies for health care workers in place.
- The majority of health services made immunisation available to paid employees.
- Nearly all health services had a system in place for documenting immunisation and screening, and provided health care workers with access to their immunisation records.
- All health services had post-exposure policies for blood borne viruses.
- The majority of health services had access to specialist counselling for exposures to HIV and hepatitis C.
- Nearly all health services had policies for the management of health care workers exposed to infectious diseases.
- All health services had procedures for management of out-of-hours exposure of HIV, hepatitis B and hepatitis C.

4.9 Further improvement opportunities

- Health services need to ensure that immunisation policies are inclusive of groups who may be exposed to infectious diseases – other than paid health care workers. These include volunteers and non-hospital employees, such as agency staff, contractors and students. Health services are responsible for ensuring that non-hospital employees can substantiate appropriate immunisation status.
- Category D, E and M health services need to develop policies that reflect access to specialist counselling for exposures to hepatitis C.
- Documentation in relation to access to PEP within recommended timeframes for exposures to HIV requires improvement in all health services.
- Category A health services require improvement in developing policies for exposures to other infectious diseases, such as measles and meningococcal disease.
- Category B health services require improvement in policies for other infectious diseases, including measles, varicella and meningococcal disease. All other categories of health services need to demonstrate improvement for this survey item. While in some health care facilities, the likelihood of such exposures may seem remote, the development and staff awareness of such policies is consistent with an organisation approach to risk management.

5 Education and training

5.1 Overview

It is vital that all those who work in health services have a clear understanding of the principles of infection control, in order to maximise protection from infection to all consumers of the health service, including patients, colleagues and visitors. Training in infection control should include all health care personnel, from the health services board members to support services staff, and should be a mandatory component of employment and ongoing performance appraisal for clinical personnel.

In May 2000, Department of Human Services requested that all Victorian health services be directed to review orientation procedures for new staff members. The Australian and New Zealand College of Anaesthetists, and all other relevant specialty colleges, were contacted to request information about the measures they take to ensure specialists and those in training use appropriate infection control measures. All education delivery should be mindful of adult learning techniques, and be targeted to meet the needs of the various disciplines within each health care setting.

The Victorian Advisory Committee on Infection Control (VACIC) Education Subcommittee is reviewing infection control education for health care personnel. This review will include approaching tertiary education providers to identify a base level of knowledge prior to placement in health care organisations.

Other organisations, such as the Australian Infection Control Association, are currently developing core competencies in infection control for undergraduate nurses. The Australian National Training Authority is developing core competencies for CSSD technicians in the reprocessing of medical and surgical equipment.

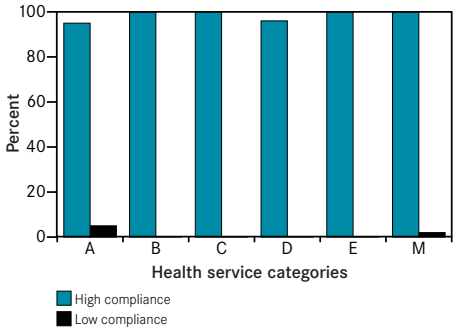
5.2 Infection control education and induction

The 1996–97 Infection Control Survey identified that the availability of infection control education at induction, for all heath care personnel, and across all health services, required improvement. Recommendations from the report included ensuring induction programs addressed relevant topics across a range of health care personnel, and should include students, subcontracted personnel and volunteers.

The 2001–02 Survey identified that the majority of health services had induction education programs that included an infection control component.

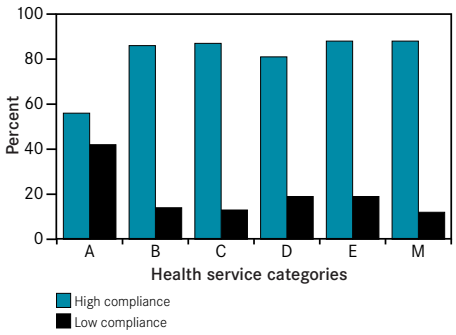
While 83 per cent of health services cited that attendance at induction was a mandatory component of employment or placement within health services, it was evident that not all categories of health care personnel attended. Improvement is still required to ensure that all staff attend or have access to such programs. This is particularly challenging for health services that employ medical staff, particularly senior medical staff, students, subcontractors and agency staff. Creative methods of education delivery, such as self-directed learning packages or interactive electronic models, may need to be developed to facilitate this process.

Figure 13 Evidence of an infection control induction program



VACIC has established a subcommittee to review infection control education across the State. The subcommittee will undertake an assessment of infection control components of current undergraduate and postgraduate curriculums, and make recommendations regarding future minimum requirements, where appropriate. They will also review the infection control content of health service induction programs, aiming to set minimum standards for content, and will oversee the development of a standard infection control education package for use in Victorian health services.

Figure 14 Evidence of ongoing infection control education program



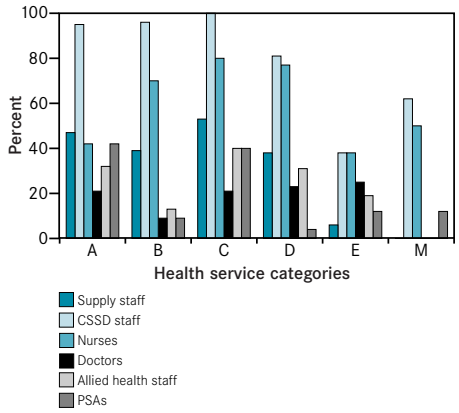
5.3 Ongoing infection control education

The 1996–97 Survey identified that some health services provided ongoing education to update staff on new issues as they arose. However, there was evidence that such infection control education required formalising. It was recommended that mechanisms for continued education of health care personnel be developed. In 2001–02, most health services demonstrated evidence of an ongoing education program that included an infection control component.

Predominantly nursing, allied health, CSSD and support staff attended these programs. Creative educational opportunities need to be developed for other categories of health care personnel, in order to ensure that staff are regularly provided with up-to-date knowledge in infection control practice.

Teaching and learning programs should be evaluated for effectiveness, and components regularly reviewed, to ensure currency of information. In 2001–02, it was evident that the majority of health services did not evaluate learning outcomes from induction or ongoing education programs or undertake the review and modification of infection control components of education programs for induction and ongoing education. Health services should ensure that health care personnel have 'take-home messages' from induction programs – especially those that ensure their own and others' safe practice.

Figure 15 Staff receiving education in handling of sterile stock



5.4 Education of health care personnel responsible for reprocessing medical and surgical equipment and handling sterile stock

The 1996–97 Survey identified that staff responsible for cleaning, disinfecting and sterilising medical and surgical equipment required improvement. In 2001–02, CSSD managers were asked to identify if staff were trained when new systems or equipment for cleaning, disinfection and sterilisation was introduced. All respondents confirmed that such training occurred.

The 1996–97 Survey also identified that improvement was required to ensure that staff who handled sterile stock received appropriate training. This need was particularly evident in supply departments. Such training should include the requirements of AS 4187. [21] In 2001–02, it was evident that while CSSD staff (and in

21 *AS 4187, Australian Standards 1998:* ***Cleaning, Disinfecting and Sterilising Reusable Medical and Surgical Equipment and Maintenance of Associated Environments in Health Care Facilities.***

some health services, nurses) were provided with education about the handling of sterile stock, improvement was required for all other categories of staff, including supply personnel who are responsible for storing, transporting or ensuring recognition and integrity of sterile stock at the point of use.

5.5 Organisational infection control knowledge

All health care personnel are encouraged to take ownership of infection prevention and control within each organisation, in line with the fundamental principles of clinical governance. Knowledge of infection control should be included in all position descriptions, employment contracts and performance appraisals.

In 2001–02, health services were asked to identify evidence of organisational infection control knowledge. While the majority of health services were able to demonstrate infection control statements in position descriptions, evidence of infection control education and knowledge of infection control practices, as a component of employment contracts and performance appraisals, requires considerable improvement.

5.6 Regional collaborations

The 1996–97 Survey recognised that rural health services could benefit from regional collaborations, in order to enable sharing of resources for infection control education. This has largely been achieved by the appointment of senior infection control practitioners across the five Victorian rural regions, as part of the Victorian government five-point infection control strategy, and the allocation of 32 infection control practitioners across Victoria. This initiative has enabled the coordinated development and sharing of educational and other resources within and across the regions. Further information about the achievements of the Rural Infection Control Practitioners Group (RICPRAC) can be accessed through the Infection Control website.

Department of Human Services Infection Control website:
infectioncontrol.health.vic.gov.au

5.7 Achievements since 1996–97

- The majority of health services have induction and ongoing infection control education programs.
- All health services provide training when new systems or equipment for cleaning, disinfection and sterilisation are introduced.
- The majority of health services provided education to CSSD staff on the handling of sterile stock.
- The majority of health services included knowledge of infection control practices in position descriptions.

5.8 Further improvement opportunities

- All health services need to ensure that learning outcomes from education programs are evaluated, and to regularly review and modify the infection control components of ongoing and induction education programs. Education of health care personnel in the principles of infection prevention is a critical component in the challenge to reduce health care-associated infection. Opportunities to provide education to heath care personnel, particularly senior medical staff, require creativity and flexibility in delivery models.
- Knowledge of current infection control practice should be a key component of employment contracts and performance appraisals of all health care personnel in order to promote a holistic approach to the responsibility of infection prevention and control throughout organisations.

6 Infection control factors in the physical environment

6.1 Overview

Management of the physical environment in health services is an integral component of any effective infection control program. Effective management includes strategies that begin with risk minimisation in the design and construction of health care facilities, and include:

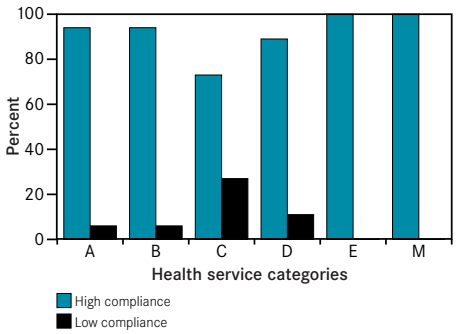
- Sufficient clinical sinks to promote handwashing by health care personnel.
- Sufficient rooms for isolation of patients with infectious diseases.
- Optimising air quality and workflows in clinical areas.
- Ensuring that surfaces throughout the facility facilitate cleaning.

Programs should include:

- Monitoring and preventative maintenance of hospital equipment.
- Adherence to regulations for control of *Legionella*.
- Waste handling protocols.
- Procedures for handling food and linen supplies.

Infection control-related clauses should be demonstrated in all contracts with external providers for building, waste, sharps and linen.

Figure 16 Infection control input into plans for building and refurbishment



6.2 Plans for new works and refurbishment

The 1996–97 Survey demonstrated that the infection control team was often excluded from input into planning for new or refurbished buildings. All facilities submitting proposals for redesign, redevelopment or structural maintenance should demonstrate evidence of an infection control risk assessment plan. The plan should take into account relevant patient catchment populations, including the type of, and expected prevalence of, clinically important microorganisms and infectious diseases.

In 2001–02, it was identified that 75 per cent of all health services had plans for new facilities or redevelopment in the two years prior to the survey. Ninety-one per cent of infection control practitioners or teams were consulted at the planning and design stage for all these proposed new works or refurbishment.

Only 18 per cent of health services identified a documented system for undertaking an infection control risk assessment before redevelopment or structural maintenance. While higher levels of compliance was demonstrated in Category A health services, where patient populations can be considered at greater risk of infection, improvement is still required in all health services to reduce the potential for transmission of construction-related infectious diseases.

Contracts related to new works were required to demonstrate infection related clauses, and only 58 per cent of all respondent health services complied with this requirement. All health services were also asked to identify if containment planning

was conducted for dust, heat and moisture at the design phase of building projects. Fifty-five per cent of all health services demonstrated compliance with this survey item.

It is a requirement that all health services fully comply with this item.

The US Association for Professional in Infection Control and Epidemiology (APIC)[22] and Health Canada[23] have developed guidelines for infection control during building and construction. A new set of Department of Human Services guidelines, *Design Guidelines for Hospital and Day Procedure Centres*, will also be applicable to the private and public sector, and for public comment, in mid-2003. There will also be a new Australian Standard, titled *Engineering Down the Risk*.

6.3 Isolation rooms

Protocols governing the type, number and placement of isolation rooms are recognised as part of an important infection control strategy to assist with the containment, prevention and transmission of infectious diseases. Assessments by each health care facility to ascertain isolation room requirements should be undertaken, which identify casemix, clinical risk and other demographics peculiar to the location of each health service. Organisations should familiarise themselves with the requirements of the Victorian Department of Human Services *Guidelines for Design and Classification of Isolation Rooms in Health Care Facilities*.[24]

The 2001–02 Survey identified that 52 per cent of health services had conducted an assessment of isolation requirements and capacity in accordance with the Victorian Isolation Room Guidelines. Category A and B health services were identified as more likely to have conducted such assessments. All health services should consider conducting and documenting an assessment of isolation room requirements to assist with future planning. After conducting risk assessments, smaller health services, for example, might only identify that one or two Class S (standard) rooms are required. This enables effective contact precautions for the prevention of transmission of antibiotic multi-resistant microorganisms or other diseases spread by contact, such as gastroenteritis.

Fifty-one per cent of health services identified that they had one or more isolation rooms within their facility and, of these, 27 per cent met the current guidelines for

22 *Bartley, J M, 2000, 'The 1997, 1998, and 1999 APIC Guidelines Committee's APIC State-of-the-Art Report: **The Role of Infection Control During Construction in Health Care Facilities**', in American Journal of Infection Control, 28: 156–69, www.apic.org*

23 *Canadian Center for Infectious Disease Prevention and Control, Population and Public Health Branch, Division of Nosocomial and Occupational Infections, 2001, **Construction-Related Nosocomial Infections in Patients in Health Care Facilities, Decreasing the Risk of Aspergillus, Legionella and Other Infections**, http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/ccdr-rmtc*

24 *Victorian Department of Human Services, Public Health Division, Standing Committee on Infection Control, 2000, **Guidelines for the Classification and Design of Isolation Rooms in Health Care Facilities.***

Class S, N or P isolation rooms. Only 30 per cent of health services identified having emergency departments that had isolation facilities within those departments and, of these, 26 per cent met the current guidelines for Class S, N (negative pressure) or P (positive pressure) isolation rooms. Sixty-nine per cent of all health services that identified isolation facilities within their organisation demonstrated compliance with documented procedures for the use of these facilities.

There is a need to ensure that Class N and Class P isolation rooms are functioning correctly, in order to prevent transmission of infection via the airborne route (Class N) or maintain protective isolation (Class P). It is vital that air pressures are monitored in line with the requirements of the Department of Human Services Isolation Room Guidelines.

Staff required to monitor isolation room function should receive training. When in use, room and airlock pressures should be monitored and recorded at least daily in, for example, a logbook designated for that purpose. Any variances must be reported immediately to the engineering department and infection control. The 2001–02 Survey identified that in facilities where Class N or P facilities exist, 63 per cent of health services monitor air pressures. Of those who monitor air pressure, 38 per cent have evidence that air pressures are recorded.

6.4 Handwashing facilities

Handwashing remains one of the most important factors in preventing health care associated infections,[25] with a major obstacle to its practice the placement of clinical handbasins. The 1996 NHMRC guidelines, Infection Control in the Health Care Setting,[26] requires there to be one clinical sink for every single patient room, or one for every four bedrooms, and that these should be located as close to the entrance of the room as possible. The 1996–97 Survey identified that the number and location of clinical handbasins in patient care and support areas required priority review.

In 2001–02, surveyors directly observed access to clinical handbasins in existing facilities. Areas surveyed included, where such units existed in those health services:

- Emergency department
- Dental unit
- Outpatient department
- Endoscopy unit
- Day procedure unit
- Podiatry department.

25 *Larson, E, 1995, **'APIC Guidelines for Handwashing and Hand Antisepsis in Health Care Settings'**, American Journal of Infection Control, 23: 251–69, www.apic.org*

26 *NHMRC, 1996, **Infection Control in the Health Care Setting**, www.health.gov.au/nhmrc/publications*

All health services demonstrated high compliance with this survey item in the departments surveyed, with only a few health services across all categories requiring improvement in providing access either within or immediately adjacent to patient care areas. However, the 2001–02 Survey also sought to identify, of each health service with plans for new works or refurbishment in the preceding two years, whether there was evidence that planning included the provision of handwashing facilities consistent with AS/NZ 1730[27] for washbasins and NHMRC guidelines. Seventy-eight per cent of health services demonstrated high compliance with such evidence.

6.5 Waste management

All health services were asked to demonstrate the existence of policies for management of waste, based on the current Victorian Environmental Protection Authority (EPA)[28] guidelines. Ninety per cent of all health services demonstrated the existence of such policies, however, only 44 per cent were based on the current EPA guidelines. Contracts for waste management were examined for infection-related clauses and penalties for variance. Sixty-four per cent of health services with waste management contracts identified infection-related clauses, with the majority including penalties for variance.

It is a requirement that all health services fully comply with this item.

6.6 Sharps handling and disposal

The 1996–97 Infection Control Survey identified that while health care workers had increased awareness of correct sharps disposal, documented policies and education programs were not always available across all categories of health services. The 2001–02 Survey requested evidence from each health service of policies for the safe handling, transportation and disposal of sharps. Ninety-six per cent of all health services demonstrated compliance for this survey item. Contracts for sharps management were also required to demonstrate infection control related clauses and penalties for variance. Sixty-one per cent of contracts complied with this requirement and, of these, 87 per cent included penalties for variance.

It is a requirement that all health services fully comply with this item.

6.7 Linen

The 1996–97 Infection Control Survey examined the infection control practices of linen services within health services. It found that compliance with existing standards required improvement – particularly in Category C, D and E health services.

27 AS/NZ 1730: 1996, Washbasins.

28 Victorian Government Environmental Protection Authority, 1993, ***Manual for the Management and Disposal of Biomedical Wastes in Victoria****, second edition.*

All health services should have documented policies and procedures for the correct storage, handling and transportation of clean and dirty linen. These policies should be developed in accordance with the AS/NZ 4146 (Laundry Practice).[29] The 2001–02 Survey demonstrated that 76 per cent of all health services had documented policies, however, only 48 per cent were based on the current laundry standard. Fifty-nine per cent of health services with external laundry providers had contracts with infection-related clauses.

It is a requirement that all health services fully comply with this item.

6.8 Food safety

Food safety in Victoria is governed by the Victorian *Food Safety Act 1984*.[30] All health services are required to have a food safety plan outlining policies and procedures to prevent food borne illness, and to undergo regular auditing.

For the purpose of the 2001–02 Infection Control Survey, health services were only requested to demonstrate evidence of the existence of a food safety plan for each organisation, and identify mechanisms for feedback of results of food safety audits to the infection control committee. Infection control practitioners identified that 95 per cent of health services demonstrated existence of food safety plans, but only 62 per cent of compliant health services demonstrated mechanisms for feedback of results to infection control committees.

It is a requirement that all health services fully comply with this item.

6.9 Maintenance and monitoring programs

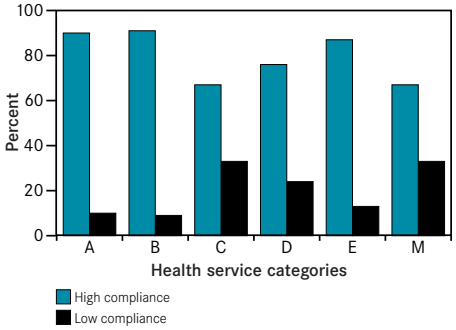
The engineering manager, or their equivalent, is responsible for the maintenance of equipment and monitoring of the physical environment within the facility. All health services should have documented planned maintenance schedules for equipment, such as sterilisers, bedpan sanitisers, HEPA filters and air handling units, water filtration systems and other such equipment.

Monitoring systems should be documented, and include inspection frequency, written protocols and log books to record outcomes or work undertaken. The 1996–97 Survey identified deficits in all organisations regarding the existence of supporting documentation for preventative maintenance schedules for equipment, systems, including HEPA, and other air filters and monitoring of air changes in operating theatres and other specified areas. The 2000–02 survey required evidence on the planned maintenance schedules for equipment, air handling and water systems within each organisation. Eighty-two per cent of all health services demonstrated high compliance with this requirement, although categories A, B and E performed better than other categories.

29 AS/NZ 4146: 2000, Laundry Practice.

*30 Victorian Government, **Food Safety Act 1984**.*

Figure 17 Evidence of planned maintenance program



Ninety per cent of health services were able to demonstrate written histories of work undertaken.

Access to ceilings spaces and dust generating procedures can increase the risk of infection transmission in health care facilities. All health care services should demonstrate the existence of policies and procedures to minimise the spread of such contaminants by engineering personnel or contractors during maintenance, particularly in high risk areas such as critical care units, CSSD, theatres, oncology units, transplantation units and laboratories. In 2001–02, 56 per cent of health services demonstrated compliance with this requirement.

Reports on physical environmental monitoring outcomes and variances, such as cooling tower microbiological data and air-conditioning failures, should be provided to the infection control team and committee. In 2001–02, 82 per cent of health services demonstrated high compliance with this requirement. Health services were also requested to identify if the engineering department, or its equivalent, was represented on the infection control committee. Sixty-two per cent of health services identified that an engineering department representative was either a member of the infection control committee, or was co-opted as necessary. Such full-time or co-opted membership is seen as an effective method of promoting communication between departments.

Information on monitoring of air changes in the operating theatre and CSSD, as per the Department of Human Services guidelines on air-conditioning in health care buildings 1996,[31] was also required. All health services demonstrated poor compliance for this requirement, and improvement is required.

It is a requirement that all health services fully comply with this item.

6.10 Legionella

The 1996–97 Survey identified that there was general adherence to the 1989 Department of Human Services guidelines for the control of legionnaire's disease. In 2001, all health services were required to conduct risk assessments for cooling towers and warm water systems in accordance with the new Health (Legionella) regulations 2001.[32, 33] All health services participating in the 2001–02 Infection Control Survey were required to identify if their organisation had evidence of a *Legionella* risk management plan, and that cooling towers and warm water systems, if present, were maintained in accordance with these guidelines. Seventy-seven per cent of Health services demonstrated evidence of *Legionella* risk management plans. Seventy-three per cent of these health services have developed their plans in consultation with infection control protocols. All health services with cooling towers,

31 *Victorian Department of Human Services, 1996,* ***Capital Works Guidelines, 6.3: Air-Conditioning in Health Care Buildings****.*

32 ***Building (Legionella Risk Management) Regulations, SR NO 14/2001****, www.dms.dpc.vic.gov.au/sb/2001_SR/S01429.html*

33 ***Health (Legionella) Regulations 2001****, www.dms.dpc.vic.gov.au/sb/2001_SR/S01428.html*

and 84 per cent of health services with warm water systems, could provide reports showing that these were maintained in accordance with Victorian health regulations.

It is a requirement that all health services with cooling towers or warm water systems fully comply with this item.

6.11 Achievements since 1996–97

- The majority of health services consulted infection control practitioners or teams at the planning or design stage for all proposed new works.
- The majority of health services had policies for waste and linen management.
- Nearly all health services had policies for the safe handling and disposal of sharps.
- The majority of health services met the AS/NZ 1730 for washbasins and NHMRC guidelines for planning for provision of handbasins.
- The majority of health services were able to demonstrate planned maintenance schedules for equipment, air handling and water systems, with nearly all demonstrating documentation for work undertaken.
- All health services with cooling towers, and the majority of health services with warm water systems, are maintained in accordance with Victorian health regulations.

6.12 Further improvement opportunities

- All health services need to ensure that there is a documented system for undertaking an infection control risk assessment before redevelopment or structural maintenance.
- Contracts related to new works and refurbishment need to demonstrate infection related clauses.
- All health services should develop, implement and monitor compliance with internal policies for containment of contaminants, such as dust, as part of a risk management approach within their facility.
- All health services should regularly assess isolation room requirements to assist with future planning. In particular, Category A, B and C health services should use the opportunity of planned refurbishment or new works to review negative pressure ventilation in emergency departments and intensive care units.
- It is recommended that all health services regularly review their isolation rooms to determine compliance with the current guidelines. In particular, where Class N or P facilities exist, health services need to ensure that staff are trained in monitoring of air pressures, and that when in use room and airlock pressures are recorded, at minimum, on a daily basis.
- Some improvement is required in all health services to ensure that waste management policies include reference to EPA guidelines. All contracts with external providers pertaining to waste and sharps management should include infection-related clauses.

- All health services need to ensure that documented policies regarding linen management base these policies on the current laundry standard, AS/NZ 4146 (Laundry Practice). Health services with external laundry providers need to ensure that contracts include infection-related clauses.
- Category C, D and M services need to ensure that there is documented evidence of planned maintenance schedules for equipment, air handling and water systems within each organisation.
- All health services need to ensure that information on monitoring of air changes in the Operating theatre and CSSD is undertaken in accordance with the Department of Human Services Guidelines on Air-Conditioning in Health Care Buildings 1996.[34]

34 *Victorian Department of Human Services Capital Management Branch, 1996,* ***Capital Works Guidelines, 6.3: Air-Conditioning in Health Care Buildings****.*

7 Prevention of the emergence and spread of antibiotic-resistant microorganisms

7.1 Overview

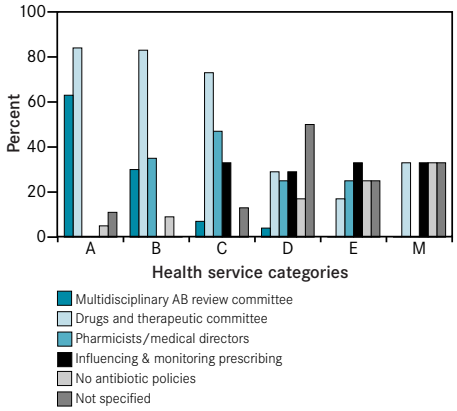
The development of anti-microbial agents revolutionised medical care in the twentieth century, contributing to a dramatic reduction in morbidity and mortality from infectious diseases, and the ability to undertake complex medical and surgical interventions.[35] The emergence of antibiotic resistance is inevitable, to some extent, and inappropriate and excessive use of antibiotics in human medicine and animal husbandry is now recognised as a major contributing factor. Health services need to introduce strategies to facilitate good antibiotic prescribing practice, develop systems for early recognition of resistance, and to control further spread of multi-antibiotic-resistant microorganisms. These systems should be monitored for effectiveness.

While the efficacy of hospital management practices to prevent the emergence and spread of antibiotic-resistant microorganisms was not included in the 1996–97 Survey, recommendations for improvement were made based on the concurrently conducted 1998 literature review, including:

- Optimising anti-microbial prophylaxis for operative procedures.
- Improving anti-microbial prescribing through educational and administrative means.
- Monitoring and providing feedback on anti-microbial resistance.
- Developing systems to rapidly detect and report resistant microorganisms in individual patients, and ensuring timely responses by caregivers.
- Developing plans for identifying, transferring, discharging and re-admitting patients colonised with specific anti-microbial-resistant pathogens.

To assess compliance with these recommended strategies, the 2001–02 Survey included a review of procedures in health services for promoting effective antibiotic prescribing practice, and systems for detecting, reporting and preventing transmission of antibiotic-resistant microorganisms.

Figure 18 The way that antibiotic policies and procedures are developed



7.2 Development, monitoring and review of antibiotic policies and procedures

All health services should develop and document antibiotic policies, and monitor compliance, based on current best practice guidelines, and circulate the results to key stakeholders within the organisation.

In 2001–02, health services were asked to identify processes that best described how they developed, monitored and reviewed their antibiotic policies and procedures. Antibiotic policies were developed via drugs and therapeutics committees – most commonly in Category A, B and C health services. Some

35 *British Government, December 1998,* ***Government Response to House of Lords Select Committee on Science and Technology Report: Resistance to Antibiotics and Other Anti-Microbial Agents****, http://www.archive.official-documents.co.uk*

Category A and B health services also used multidisciplinary antibiotic review committees to develop these policies. While other health services identified mechanisms such as influencing and monitoring medical practitioners prescribing practices, a number of health services either identified that antibiotic policies did not exist, or were unable to specify methods for policy development.

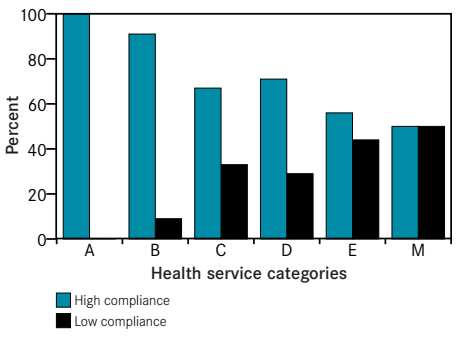
Table 2 Processes for monitoring antibiotic policies and procedures

Monitoring method	Proportion of health dervices that used this monitoring method
Multidisciplinary antibiotics review committee	12%
A drugs and therapeutic committee	37 %
The pharmacist/medical director	34%
Influencing/monitoring GP/specialist prescribing practice	30%
No process in place	19%

Table 3 Processes for reviewing antibiotic policies and procedures

Reviewing method	Proportion of health services that used this review method
Multidisciplinary antibiotics review committee	17%
A drugs and therapeutic committee	46%
The pharmacist/medical director	24%
Influencing/monitoring GP/specialist prescribing practice	17%
No process in place	12%

Figure 19 Evidence of documented policies for antibiotic use



7.3 Antibiotic policies

Each health service was required to provide written evidence of policies and procedures related to antibiotic use. The evidence was required to include reference to access to electronic or hard copies of:

- The Therapeutic Guidelines: Antibiotic.
- Antibiotic restriction policies.
- Executive management-endorsed hospital antibiotic policy.
- Infectious disease service for provision of antibiotic advice.
- Results of auditing of restricted antibiotics.

Respondents included infectious disease physicians, if they existed within the health service, the medical director, or equivalent, and the chief pharmacist, or equivalent. All Category A, and most Category B health services demonstrated high compliance for evidence of written policies governing antibiotic use. Category C and D health services demonstrated high compliance in 69 per cent of instances. While there

were less identified respondents in Category E and M health services, those who did respond did not perform as well for this survey item.

It is a requirement that all health services fully comply with this item.

7.4 Auditing of surgical antibiotic prophylaxis

The timely administration of antibiotics for prescribed surgical procedures has been demonstrated to be effective in reducing surgical site infection. To be effective, where indicated, anti-microbial prophylaxis should be administered just before an operation begins, in order to reduce the intraoperative microbial contamination to a level that will not result in infection.[36]

Evidence of compliance with antibiotic prophylaxis guidelines for operative procedures was sought from participating health services. Respondents were requested to identify evidence of auditing of anaesthetic charts for administration of antibiotics:

- Prior to commencing prescribed surgical procedures.
- In accordance with the *Therapeutic Guidelines: Antibiotic*[37].
- Not prolonged beyond that recommended in the *Therapeutic Guidelines: Antibiotic*.

Surgical procedures most commonly requiring antibiotic prophylaxis are more often conducted in Category A and B health services. Of these health services, only 37 per cent demonstrated high compliance for this survey item.

Forty per cent of Category A health services, and 13 per cent of Category B health services identified audits of surgical antibiotic prophylaxis practice that included examining charts for prescribing and administration of antibiotics in accordance with the *Therapeutic Guidelines: Antibiotic*. Twenty-one per cent of Category A health services, and 30 per cent of Category B services monitored 'timing' of antibiotic administration. Twenty-one per cent of Category A health services monitored the postoperative duration of antibiotic therapy, while no Category B health services reported including this component in auditing surgical antibiotic prophylaxis.

Feedback of audit results on surgical antibiotic prophylaxis to key stakeholders was poorly reported across both Category A and B health services.

7.5 Strategies for optimal prescribing practice

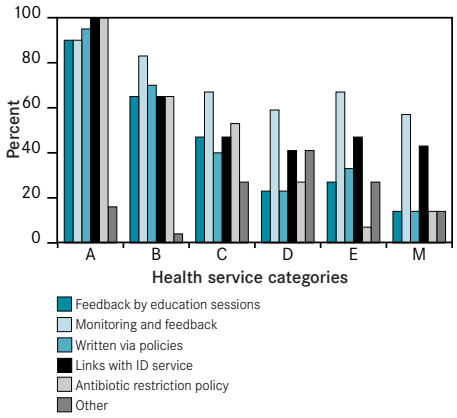
A number of strategies were identified in health services as being in place to encourage optimum antibiotic prescribing, including:

- Feedback via education sessions.
- Monitoring and feedback re antibiotic use.

*36 Mangram, AJ, Horan, TC, Pearson, ML, Silver, LC, Jarvis, WR, 1999, Hospital Infection Control Practices Advisory Committee, **'Guideline for Prevention of Surgical Site Infection'**, Infection Control Hospital Epidemiology, 20: 250–278.*

37 Therapeutic Guidelines: Antibiotic 2003 Version 13.

Figure 20 Strategies for promoting optimum antibiotic prescribing



- Documented policies.
- Links with infectious disease services.
- Antibiotic restriction policies.
- Restricted access to certain antibiotics.

These strategies were more evident in Category A and B health services. However, all categories of health services demonstrated some strategies for promoting optimal antibiotic prescribing practice.

7.6 Detection, prevention and control of antibiotic-resistant microorganisms

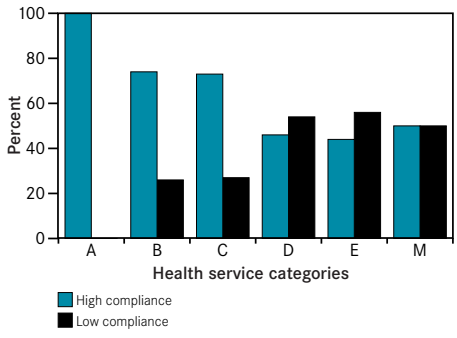
Evidence was required from all health services as to the existence of policies and procedures for the detection, prevention and control of antibiotic-resistant microorganisms, such as methicillin resistant Staphylococcus aureus (MRSA), vancomycin resistant enterococci (VRE) and other highly resistant gram-negative bacteria. Sixty-one per cent demonstrated high compliance in this area.

Antibiotic-resistant microorganisms were identified in all health services as being initially reported to clinical staff and the infection control team or practitioner. The most common mechanism for informing the infection control practitioner or infection control team of new antibiotic-resistant microorganisms was via verbal advice from the treating medical officer (80 per cent). Other methods included automatic reporting from pathology (93 per cent) or 'some other method' (78 per cent).

All health services were asked to provide evidence of written policies, which included the identification of patients colonised or infected with antibiotic-resistant microorganisms, procedures for intra-hospital or inter-hospital transfer, and discharge and readmission strategies. All Category A, and most Category B and C health services demonstrated high compliance for this survey item. Some smaller health services demonstrated a need for improvement in developing such policies.

It is a requirement that all health services fully comply with this item.

Figure 21 Written policies and procedures exist for identifying, transferring, discharging and readmitting patients with MRO



7.7 Management of patients with tuberculosis

Early recognition of patients suspected to have *Mycobacterium tuberculosis* (TB) and subsequent implementation of control measures are paramount to prevent further transmission of TB in health care facilities. These include:

- Isolation in a negative pressure room, if available.
- The wearing of filtration masks, as defined in Department of Human Services guidelines[38] by caregivers and/or the patient.
- Early diagnosis and treatment.

38 Victorian Department of Human Services, Public Health Division, 2002, ***Guidelines for Health Care Providers, Management, Control and Prevention of Tuberculosis****.*

Consequently, all health services should have a policy for management of such patients, even if the likelihood for ongoing management within the facility is remote.

All health services were asked to provide evidence of policies and procedures for the 'safe' isolation of patients with suspected pulmonary tuberculosis. In smaller health services, such policies may simply include not knowingly admitting such patients to the facility. Alternatively, if a patient is identified during an admission, they might be removed to a single room and requested to wear a particulate filtration mask. Staff might also be required to do so, until the patient can be transferred to a health service with appropriate negative pressure isolation facilities.

The 2001–02 Survey identified that while all Category A health services were able to demonstrate policies for the 'safe' isolation of patients with suspected TB, only 32 per cent of all other health services demonstrated compliance with this item.

It is a requirement that all health services fully comply with this item.

7.8 Achievements since 1996–97

- The majority of health services identified several strategies for encouraging optimum antibiotic use.

7.9 Further improvement opportunities

- It is recommended that, at a minimum, all health services demonstrate evidence of policies for antibiotic prescribing, and the development of antibiotic restriction policies.
- It is recommended that all health services performing surgical procedures requiring the administration of antibiotic prophylaxis as per the Therapeutic Guidelines: Antibiotic, or locally developed guidelines audit for compliance. Audits should include the type of antibiotic, the timing of administration and the duration of antibiotic prophylaxis.
- It is recommended that Category D, E and M health services develop written policies for the management of patients colonised or infected with antibiotic-resistant microorganisms, procedures for intra-hospital or inter-hospital transfer, and discharge and readmission strategies.
- Category B, C, D, E and M health services are required to have policies and procedures for the safe isolation of suspected pulmonary tuberculosis.

Lessons learned

Individual Health Service Reports were issued to health services and individual hospitals in July 2002. At the same time, invitations were extended to executive management and infection control personnel to participate in feedback forums held for the metropolitan area and in each rural region. Senior project officers from the Quality and Care Continuity Branch of the Department of Human Services, and the project officer for Taylor Sofres Nelson, facilitated these forums.

Participants were given an overview of the objectives of the survey process, information on the design of the survey questions, and clarification on the individual reports rating criteria. Participants were then invited to provide feedback on the survey process and the reports, either directly at the forum or through electronically raised queries and feedback forms.

Regional areas were invited to participate in workshops to look at improvement opportunities for any future surveys, and to identify priorities for the 2002 Victorian Statewide Report.

A number of issues were raised from the forums and feedback processes, from which we can learn, and use to improve future surveys.

Issue 1: Prior information

One of the key concerns was the feeling that insufficient information was given prior to the survey on the actual process. Consequently, some health services felt disadvantaged at not being better prepared, for example, with documentation to support of some of the questions asked.

Rationale

The expert reference group felt that it was important that evidence was sighted in support of key or critical issues to validate interviewee responses. There was concern that if advance notice on specific requirements were given, this could bias results. However, health services were given an overview of the survey process, including examples of the type of documentation that could be required in support. This was included in correspondence to CEOs prior to commencement of the survey and in a follow-up email to the infection control contact person prior to the commencement of the survey.

Issue 2: Post-survey debriefing

Another concern was the lack of a post-survey debriefing.

Rationale

Feedback from the 1996–97 Infection Control Survey identified the potential for individual surveyor bias that arose during post survey debriefing. In an attempt to overcome this issue in the 2001–02 Survey, the surveyor role was more clearly defined. This was aimed at avoiding the introduction of subjective judgment by interviewers, either during or after the survey process.

Issue 3: Interaction

Some interviewees felt that the laptops used by the interviewers reduced opportunity for interaction, and acted as a barrier to the interview process.

Rationale

The 1996–97 Infection Control Survey required over 10,000 manual keystroke entries per hospital site survey. Electronic data entry was selected as the method of choice in the 2001–02 Infection Control Survey in order to reduce data entry requirements (that is, paper-to-database and to reduce transcription errors). This added benefit would also allow for more timely analysis of data.

Issue 4: Relevance to small facilities

Some of the rural hospitals felt that the survey tool was more relevant to large or metropolitan hospitals.

Rationale

The expert reference group felt that all infection control guidelines, standards and policies were equally relevant to all health services, regardless of service mix, size or geography.

While the expert reference group included a rural representative, future survey development should include a wider rural representation. In the review of the instrument for self-auditing purposes, further consultation with the rural sector will be undertaken to ensure that the tool better reflects the needs of smaller organisations.

Issue 5: Self-auditing

While there was some support for the development of a self-auditing tool, consideration should be given to the selection of staff required to be included in the auditing process, and the proposed frequency of self-auditing.

Rationale

One suggestion was that the self-auditing tool, or components of it, could be used annually – prior to review of infection control strategic management and operations plans – in order to identify gaps in infection control service across each facility. Another suggestion was to adopt the self-auditing tool as the basis for Victorian public health service ACHS EQuIP infection control accreditation requirement.

Issue 6: Pathology

Pathology services should be considered for inclusion in any future surveys.

Rationale

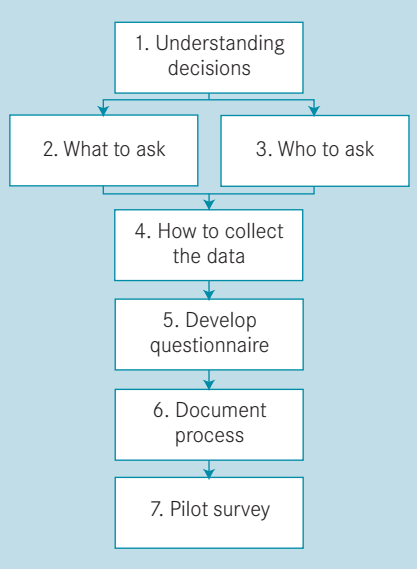
The expert reference group felt that infection control requirements for laboratory services were captured under the NATA accreditation process. The feedback process has identified that this accreditation process does not capture compliance with relevant infection control related policies, guidelines or standards.

Acronyms

ACHS	Australian Council of Healthcare Standards
AHMAC	Australian Health Ministers Advisory Committee
AS	Australian Standard
AS/NZ	Australian and New Zealand Standard
CAPI	Computer-assisted personal interview
CSSD	Central sterile supply department
EFT	Equivalent full-time
EPA	Environmental Protection Agency
EQuIP	Evaluation and Quality Improvement Program
EWG	Expert working group
FAQ	Frequently asked question
FDA	Food and Drug Administration (US)
GENCA	Gastroenterological Nurses College of Australia
GMP	Code of Good Manufacturing Practice
HCW	Health care worker
HIV	Human immunodeficiency virus
HR	Human resources
ICP	Infection control practitioner
ICT	Infection Control Team
IT	Information technology
MEC	Mayfield Education Centre
MRO	Multi-antibiotic-resistant organism
MRSA	Methicillin resistant Staphylococcus aureus
NATA	National Association of Testing Authorities
NHMRC	National Health and Medical Research Council
NNIS	National Nosocomial Infection Surveillance
OPA	Ortho-phthaldehyde
PEP	Post-exposure prophylaxis
QA	Quality Assurance
RICPRAC	Rural Infection Control Practitioners Group
SENIC	Study on the Efficacy of Nosocomial Infection Control (US)
TB	*Mycobacterium tuberculosis*
TGA	Therapeutic Goods Administration
TNS	Taylor Nelson Sofres
TSSU	Theatre sterilising and supply units
VACIC	Victorian Advisory Committee on Infection Control
VRE	Vancomycin resistant enterococci

Appendix 1: Methodology

Figure 22 Steps in the approach to developing the 2001–02 Infection Control Survey instrument



Survey development

The following diagram represents the steps in the approach to developing the 2001–02 Infection Control Survey Instrument.

Understanding decisions

An early aim of the reference group consultations was for all stakeholders to reach agreement as to:

- What they hoped to achieve from the research.
- The actions that might ensue from the outcomes of the survey.
- Who was best equipped to provide the information.

Ultimately, seven information areas were determined by the reference group to be included in the 2001–02 Infection Control Survey. These are defined in the following table.

Table 4 Definitions of information areas

Information area for 2001–02 survey	Purpose
1. Role of hospital management in infection control	Establish the extent to which the agency's management is committed, accountable and supports infection control in the agency.
2. Cleaning, disinfection and sterilisation of medical/surgical instruments and equipment	Establish the compliance with Australian standards, regulations and guidelines, in relation to cleaning, disinfecting and sterilisation of medical and surgical instruments and equipment.
3. Surveillance activities	Establish the extent to which there is an effective program for surveillance for nosocomial infections, involving collection, analysis and feedback of data to departments within agencies and to clinicians.
4. Occupational health and safety; staff infection prevention and control	Establish the extent to which there is an effective staff infection control program that complies with immunisation guidelines, and provides for the prevention and management of staff exposures.
5. Education and training	Establish the extent to which there are policies and effective procedures for induction and ongoing education of relevant staff in appropriate infection control practices.
6. Infection control factors in the physical environment	Establish the extent to which there are effective facility-wide maintenance, monitoring and documentation programs for hospital equipment and facilities, including integrated risk management programs as they relate to infection control risk.
7. Prevention of the emergence and spread of antibiotic-resistant microorganisms	Establish the extent to which there are facility-wide programs in place for the prevention, monitoring and control of antibiotic-resistant microorganisms, such as appropriate antibiotic use.

Questions asked

There were a number of key challenges for the reference group to consider in the design of the questionnaire, including:

- Basing the results on tangible evidence of health service policies, practices and procedures, with a view that the methodology could be replicated in future years, if required.
- A need for a holistic approach to infection control. The reference group held the view that infection control is not just the responsibility of infection control practitioners, but of all health care workers. Responsibility is located in all parts of the organisation, including executive management.
- Recognising that policies, practices, standards and guidelines are equally relevant to all health services.
- A need to validate the results within health services.
- A need for the survey to be equally relevant to small acute health services (Category D, E and M health services) located in regional Victoria, and major teaching hospitals (Category A health services).

Possible sources of evidence identified by the reference group included:

- The existence of policies associated with various elements of infection control.
- The development and documentation of workplace procedures in line with health service policies and other accepted standards.
- The adherence to standards and policies in the implementation of work practices (such as immunisation of staff, the design and standard of the physical environment).

In relation to the strength of evidence, the reference group established that it was important for the survey to be based on an assessment of the evidence – not only through interviews with relevant staff, but also through:

- Inspection of policies and other documentation to assess compliance with accepted best practice guidelines, standards and management endorsement, and to ensure that documentation was current and updated as required.
- Observation of work environments, such as the location of handbasins.

In developing the questionnaire it was recognised that, where possible, the policies, procedures and practices to be reviewed within each agency should be validated by interviewing more than one person or observing practices in more than one location.

Respondents

Twenty-two different roles were identified as key respondents to provide information for the main Infection Control Survey. Those roles identified as key respondents fell into two broad groups:

1. Roles with agency-wide responsibilities, including:

- Chief pharmacist
- Contracts manager
- CSSD manager
- Executive sponsor
- Engineering department manager
- Human resources manager
- Infection control practitioner
- Environmental services manager
- Infectious diseases physician
- Director of medicine
- Supply department manager
- Staff health manager.

2. Roles with specific departmental responsibilities, including:

- Dental unit manager
- Day procedure unit manager
- Emergency department manager
- Endoscopy department manager
- Intensive care unit manager/neonatal intensive care unit manager
- Medical imaging department manager
- Operating suite manager
- Outpatients department manager
- Podiatry department manager.

It was recognised that in smaller organisations, not all of the identified key respondents would exist, or a person might fulfil more than one role within a health service. Therefore, fewer people would need to be surveyed. The questionnaire and analysis component were designed to accommodate this feature. This meant that smaller health services were not disadvantaged, and the ratings could be equally applied across all health services.

Although the questionnaire was designed around the seven required information areas, data collection modules were based on key respondents to ensure that they would only need to be interviewed once during the survey for each site.

The link between the key respondents and the information areas themselves is detailed in the table below. Note that within any given section of the questionnaire (1 to 6), only some of the questions were applicable to the nominated respondents.

Table 5 Key Respondent for information areas

Possible respondent	1. Role of hospital management in infection control	2. Cleaning disinfection and sterilisation of medical/ surgical equipment	3. Surveillance activities	4. Occupational health and safety, staff infection prevention and control	5. Education and training	6. Infection control factors in the physical environment	7. Prevention of the emergence and spread of antibiotic resistant micro-organisms
Chief Pharmacist							Yes
Contracts Manager						Yes	
CSSD Manager		Yes				Yes	
Dental Unit Manager		Yes				Yes	
Day Procedure Unit Manager		Yes				Yes	
Emergency Department Manager		Yes				Yes	Yes
Endoscopy Department Manager		Yes				Yes	
Engineering Department Manager	Yes					Yes	
Executive Sponsor	Yes	Yes	Yes	Yes		Yes	Yes
Environmental Services Manager						Yes	
Human Resources Manager	Yes			Yes	Yes		
Infection Control Practitioner	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intensive Care Unit Manager		Yes					Yes
Neonatal Intensive Care Unit Manager		Yes					Yes

Possible respondent	1. Role of hospital management in infection control	2. Cleaning disinfection and sterilisation of medical/ surgical equipment	3. Surveillance activities	4. Occupational health and safety, staff infection prevention and control	5. Education and training	6. Infection control factors in the physical environment	7. Prevention of the emergence and spread of antibiotic resistant micro-organisms
Infectious Diseases Physician	Yes		Yes	Yes			Yes
Director of Medicine							Yes
Medical Imaging Department Manager		Yes					
Operating Suite Manager		Yes				Yes	Yes
Outpatients Department Manager		Yes				Yes	
Podiatry Department Manager		Yes				Yes	
Supply Department Manager		Yes					
Staff Health Manager				Yes			

Collection of data

Several factors were considered in establishing the most appropriate method of data collection:

- The type and complexity of information to be collected (and outputs required).
- The required accuracy of the information.
- The accessibility and location of the people involved who would provide the information.
- The need for observation of processes and documentation.

The information requirements were extensive and complex, and the information was to be drawn from interviews, document inspections and observations. After consideration, it was concluded that the data would be most appropriately collected via a face-to-face survey interview or, in limited circumstances, by telephone interviews. Because of the technical nature of the information required, it was intended that the data be collected by surveyors with expertise in infection control.

The decision to develop a computer-assisted personal interview (CAPI) questionnaire, whereby the surveyor would enter all survey data directly into a database had these advantages:

- Data entry error is reduced, as the person who collects the data enters it straight into the database.
- Significant time is saved in data entry, as the data is entered directly into the database by the surveyor. This enabled a significant reduction of the turnaround time from data collection to reporting.
- CAPI software (for example, Surveycraft ™), which drives the questionnaire, is directly compatible with most databases and statistical analysis software, enabling easy analysis of the data.

The Profiling Survey

A profiling survey was developed to identify contact details of key respondents and their roles within the organisation, as well as other demographics within each health service.

The information obtained from this questionnaire was required to:

- Allow for effective planning for the conduct of the main survey.
- Provide background information to surveyors about the services provided and key personnel within individual sites to be surveyed.
- Assist in training and briefing of surveyors.

The five broad information areas of the profiling questionnaire are detailed in the table below.

Table 6 Information areas of profiling questionnaire

Section	Purpose
A	Confirm a central contact in each agency. Check that the health service's name and address are correct.
B	Identify the existence of facilities and services in each health service location to determine areas to be surveyed in Stage 2.
C	Establish types of equipment and systems that the health service uses (at each site to be surveyed), and where they are located.
D	Establish the number and type of isolation facilities in each health service.
E	Identify the key contacts (and details) in each of the facilities and services identified in Section B, in order to form the respondent base for the main survey.

An online method for data entry for the profiling survey was identified as appropriate in most circumstances. For individuals without access to the Internet, or where problems with access were identified, the questionnaires could be completed on paper, and TNS was responsible for entering the profiling information into the data files.

To commence the profiling process, the Department of Human Services wrote to the chief executive officer at each health service, informing them of the survey process, with a brief overview of how the survey would be conducted, and identifying key personnel who would be required for interview. A key contact person was also requested for each site.

TNS used the information from the profiling questionnaires to develop detailed profiles of health services for the surveyors, to assist in planning schedules to conduct the main survey with each site. A full set of profiling forms was then provided to Mayfield Education Centre for the implementation of the main survey.

The survey

The survey team

Mayfield Education Centre (MEC), an industry recognised provider of education and consultancy in sterilisation and infection control, was appointed as project manager for the Infection Control Survey in August 2001. MEC subsequently recruited seven experienced infection control practitioners, based on their knowledge and experience in infection control, sterilisation and disinfection, computer literacy, communication skills and previous auditing experience as surveyors.

The role of the surveyors was to gather information as per the detailed protocols outlined in the surveyor's manual. It was not the role of surveyors to interpret the data, provide feedback to the surveyed sites on the effectiveness or ineffectiveness of their infection control processes, or engage in education or training of staff.

Electronic data entry

The questionnaire was set up using a modular approach, so that there were separate sub-questionnaires, according to the role of the person who was being surveyed.

Surveyors were required to enter the survey information directly into a SurveyCraft ™ data file. This eliminated the need for double handling and processing of information, and streamlined the questions for surveyors. Each surveyor was provided with a laptop computer for the duration of the project, and surveyors were provided with two days' training, including time dedicated to training the surveyors in SurveyCraft™ use.

Training

The Department of Human Services provided surveyor training in conjunction with TNS and MEC. The following areas were covered in the two-day training:

- Overview of the project
- The health service profiling form
- Introduction to the main questionnaire
- The survey manual

- Laptop computers – protocols, surveyors' obligations, getting started
- Using SurveyCraft ™
- File management, lodging the data, troubleshooting
- The role of the surveyor
- Confidentiality
- Managing challenging behaviour
- Evaluation tools.

Interviewing techniques

For collecting much of the information, surveyors were required to conduct face-to-face interviews with various personnel in the health services. Telephone interviews were allowed, in limited circumstances, for example, where respondents were unable to attend due to conflicting commitments. This occurred most commonly in rural areas. Protocols for provision of evidence, where required, were still observed.

In order to ensure that information was collected consistently from different respondents, it was important that survey questions were asked word for word. Therefore, unless otherwise advised in the questionnaire, it was stressed that surveyors should be mindful not to place their own interpretation on the requirements of a question, and to remain neutral and unbiased at all times. Surveyors were provided with training to enhance communication skills and to deal with difficult respondents.

Document perusal and observational data collection

The document perusal and observational data collection involved surveyors visiting various nominated locations within each health service. Specifically, surveyors were required to familiarise themselves with health service policies, manuals and other written material as well as by direct observation of work practices or the physical environment.

Surveyors were familiarised with relevant sections of the *Surveyor's Manual* that included detailed tables to provide surveyors with guidance as to the type of evidence they were required to gather for specific questions in the survey. This information was designed to guide surveyors in making judgments as to the most appropriate question response.

In some instances, surveyors were simply required to sight a written policy, without examining it in great detail. In other instances, surveyors needed to critically appraise the contents of a policy, for compliance with the relevant Australian Standards and Guidelines. Surveyors were provided with copies of all relevant Victorian and Australian Standards and guidelines in the *Surveyor's Manual* as reference.

Survey implementation protocols

Mayfield Education Centre prepared a detailed survey schedule, and notified all participating sites by mail at least three weeks before the survey commenced. Letters were addressed to the CEO at each site, with a copy for the hospital-designated contact.

Sites were advised of the seven key information areas that the survey would focus on. They were also asked to appoint a person to coordinate the survey process across or within each organisation. This included scheduling of interviews, and provision of a suitable interview room, as well as meeting and escorting the surveyor around the site.

The correspondence also notified each site that surveyors would require access to written documentation or 'evidence' relating to infection control programs, policies and practices. Specific examples cited in correspondence included:

- Infection Control Strategic Management Plans.
- Policy and procedure manuals.
- Committee minutes.
- Staff health and vaccination records.
- Staff induction.
- Ongoing education records.

No further detail on evidence content was provided, for example, specific documents required for compliance with standards and guidelines, to reduce the potential for alterations to documents prior to the survey that would bias the results.

MEC then made further contact with the hospital-designated contact person one week before the survey date to confirm the organisation readiness for the commencement of the survey. The name of the surveyor was notified to the designated contact person 24 hours prior to commencement of the survey, in order to minimise the possibility of the surveyor being personally contacted.

Upon completion of the survey, designated contact personnel were advised that the findings of the survey would be provided to health services in July and August 2002. Surveyors transmitted data electronically from each site to Taylor Nelson Sofres within 24 hours of completing the data collection, and completed the MEC evaluation tool on each site.

Pilot survey

The purpose of the pilot survey was to test the effectiveness of the infection control survey instrument, as well as the computer-based personal interview approach and scheduling. Pilot surveys were conducted over a one-week period in October 2001.

It was intended that health services included in the pilot would not be re-surveyed as part of the main survey, although it was recognised that some clarification would

be sought if the pilot resulted in significant changes to the survey instrument. The intent was that any clarification would occur by the simplest, most efficient means possible to minimise further burden to health services (for example, via telephone). Significant changes were not required, and no further follow-up with pilot sites occurred.

Selected pilot sites

The pilot program incorporated eight health services, which were selected by the Department of Human Services on the basis of providing a varied sample across the Victorian acute health sector, across categories of hospitals, a range of facilities and services and rural regions. Ultimately, two Category A1, two Category A2, three Category B, one Category C and one Category D sites were selected to pilot the survey.

Each of the seven experienced infection control practitioners appointed as surveyors by Mayfield Education Centre participated in the pilot.

Evaluation of the pilot process

The designated contact person for all pilot sites was required to complete a survey evaluation questionnaire within 24 hours of the survey being completed. The evaluation questionnaire provided the opportunity for each site to comment on specific issues related to the survey, such as notification, punctuality, conduct of survey and other related issues. These evaluation questionnaires were submitted directly to MEC. Surveyors also completed evaluations after each survey, and submitted these to MEC for collation.

Following the pilot surveys, a debriefing session was held at MEC offices to review the outcomes of the pilot with the survey team. At the debriefing session the following areas were covered:

- General computer-based issues, including issues related to logging on, batteries and access to power.
- Despatching data files; backing up files.
- Survey protocols, including making appointments, keeping appointments, time allocated for appointments, locating respondents.
- Feedback from agencies from the evaluation forms, including appointment times, methodology, accessing evidence and general survey requirements.
- Questionnaire issues, including a review of the questions (who, what and why), linkage, length, complexity, and TNS/Department of Human Services response.

The main changes to the questionnaire as a result of the pilot survey included:

- Deleting items related to the food services manager, because the additional information gained was minimal for the time required by surveyors with the food services manager. A question remained as to the existence of a food safety plan and

audit feedback to the infection control committee, and was asked of the infection control practitioner at each site.

- Combining items directed at the quality assurance (QA) manager, with items directed at the human resources (HR) manager, as the surveyors reported that they felt that it was irrelevant to question the QA manager on the majority of issues, and these questions were better asked of the HR manager.
- Correcting some programming errors, such as incorrect logic sequences and incomplete code frames not previously detected.

Validation surveys and inter-auditor reliability

To assess the validity of survey processes and, in particular, inter-auditor reliability, validation surveys were undertaken at six health services across Victoria. The Department of Human Services chose the specific sites, and included:

- Barwon Health – The Geelong Hospital
- Central Gippsland Health Service – Sale Campus
- South West Health Care Group – Warrnambool Hospital
- Wangaratta District Base Hospital
- Latrobe Regional Hospital
- Wodonga Regional Health Service.

The Department of Human Services determined the approach taken for the validation surveys. This involved two surveyors visiting the selected sites. One surveyor took the lead in asking questions, while both surveyors were required to independently record their responses. Where observations or inspection of documents were required, each surveyor was expected to independently undertake the observations, or document inspection and record the response.

Given that the infection control data is primarily categorical, rather than the measures being normally distributed, the most appropriate method for assessing the inter-auditor reliability of the data was to record the percentage of responses where the two surveyors gave the same answer as the measure of reliability. A score of 100 per cent would mean that the two surveyors were 100 per cent consistent in their responses, with a lower score indicating some variation.

There was a 93.4 per cent percentage correspondence between surveyors across all numerical measures for the six validation sites. There is no apparent pattern in the differences of results in any particular area of questioning – or in the proportions of invalid responses (such as ‘don’t know’ answers) between the data recorded by the validation surveyor and the data recorded by the for the main surveyor.

For the purpose of the reports, the lead surveyors’ results have been used for hospitals included in the validation survey.

Issues management

Surveyors were required to report to MEC infection control-related issues that represent an immediate danger to staff or patients. These issues considered high risk or serious and required immediate attention. MEC then notified the CEO of the health service by phone and followed this up with a letter. A copy of this letter was sent to the Department of Human Services.

Analysis and processing

TNS was responsible for the receipt of survey data, processing, analysis and preparation of individual health service reports.

Individual health services' reports

Reports were provided to individual health services for each of the detailed items that were surveyed. Each result was based on one of three models, which were developed to reflect the different types of evidence gathered and the number of individuals who were asked about a given issue.

The models and ratings applied were developed to apply equally to all health services, regardless of the category type of health service. Aggregated data is presented by hospital categories in Appendix 1. A list of hospitals and their assigned categories, for the purpose of this survey, can be found in Appendix 2.

Supplementary notes were prepared by the Department of Human Services to assist and support health services in the interpretation of the survey results. They covered the seven key areas captured in the survey, and provided an overview of the aim, rationale and preferred practices and standards for health services. However, the level that individual health services should aim will vary according to each facility's size, location and patient and service demographics. It was not the intention of the survey to provide an overall individual health service result, and results should be interpreted being mindful of local issues and priorities in infection control. While this provides the opportunity for health services to benchmark themselves for each survey item against like health services, results need to be considered in association with individual health service priorities.

Analysis/reporting models

A description of the analysis/reporting models used in this report and the individual health service reports follows.

Model 1

The rating reported represents the consistency of responses between respondents, and the strength of evidence provided by respondents (no policy/process exists; verbal advice only; the surveyor was shown written evidence as proof).

Table 7 Ratings used in model 1

Department of Human Services rating	Description
LA (Little Achievement)	All people who responded to this line of questioning consistently advised that the health service/department did not have the policy/process in place; or none of them knew whether the health service/department had the policy/process in place.
SA (Some Achievement)	The minority of people who responded to this line of questioning provided written evidence; or all people who responded to this line of questioning consistently provided verbal advice, but they were unable to produce written evidence.
MA (Moderate Achievement)	At least half the people (but not all) who responded to this line of questioning advised that the health service/department did have the policy/process in place, and the surveyor was shown written evidence as proof by at least half of the respondents. The minority who responded either advised that the health service/department did not have the policy/process in place; or they could only provide verbal advice that the policy/process was in place.
EA (Excellent Achievement)	All people who responded to this line of questioning consistently advised that the health service/department did have the policy/process in place, and the surveyor was shown written evidence as proof by all respondents.
N/A (Not Applicable)	Not applicable, because the question was not asked, for example, because the department/role/committee/policies/procedures did not exist in the health service when the survey took place.

Model 2

The rating reported represents the proportion of respondents who have indicated 'Yes' to the particular issue. Written documented evidence was not sought for these issues.

Table 8 Ratings used in model 2

Department of Human Services rating	Description
LA (Little Achievement)	No one who responded to this line of questioning said 'Yes'; that is, all people who responded indicated 'No'; or they did not know the answer to the question.
SA (Some Achievement)	The minority of people who responded to this line of questioning said 'Yes'; that is, most people who responded indicated 'No'; or they did not know the answer to the question.
MA (Moderate Achievement)	At least half (but not all) of those people who responded to this line of questioning said 'Yes'; that is, less than half of the people who responded indicated 'No'; or they did not know the answer to the question.
EA (Excellent Achievement)	All people who responded to this line of questioning said 'Yes'.
N/A (Not Applicable)	Not applicable, because the question was not asked, for example, because the department/role/committee/policies/procedures did not exist in the health service when the survey took place.

Model 3

This model is applicable to questions where respondents had the opportunity to provide one or more responses (that is, multiple response questions). The aim of this model is to report the presence of a particular phenomenon in a health service, as indicated by one or more respondents. The surveyors are not looking for consistency of response or validation.

Table 9 Ratings used in model 3

Result	Interpretation
Yes	At least one of the people who were asked this question gave the particular response. For example, if three people were required to answer the question, then a 'Yes' response would be recorded if a positive response was given to a particular item by at least one of those people.
NM (Not Mentioned)	When questioned by the surveyor, none of the people who were asked this question mentioned the particular response option; or the response was not applicable to the health service

The document Individual Health Service Report Supplementary Notes contains further information and explanation about appropriate responses.

Statewide report

While direct comparison to the 1996–97 Survey is not possible, due to differences in the new survey instrument developed for the 2001–02 Survey, broad comparisons are made on key findings and recommendations from the previous survey. To ensure the evaluations are as comparable as possible, where relevant, the results for the statewide report are focused on the responses of the key respondent for questions that had multiple respondents.

In keeping with the philosophy of the reference group, the results for the statewide report are based on the different types of evidence gathered (such as verbal or written). Written evidence was only accepted if it complied with all elements of current guidelines and standards. For the purposes of this Report, high compliance reflects verbal or written existence of relevant policies, practices and programs; while low compliance reflects no evidence of relevant policies, practices and programs.

Appendix 2: Hospital categories

For the purposes of the Survey, health services are categorised as detailed below.

Health service	Category
Austin and Repatriation Medical Centre – Austin	A
Austin and Repatriation Medical Centre – Repatriation	A
Barwon Health	A
Box Hill Hospital	A
Dandenong Hospital	A
Frankston Hospital	A
Mercy Public Hospital – East Melbourne Campus	A
Monash Medical Centre – Clayton Campus	A
Monash Medical Centre – Moorabbin Campus	A
Peter MacCallum Cancer Institute	A
Royal Children's Hospital	A
Royal Melbourne Hospital	A
Royal Victorian Eye and Ear Hospital	A
Royal Women's Hospital	A
St Vincent's Hospital (Melbourne) Ltd	A
Sunshine Hospital	A
Alfred	A
Northern Hospital	A
Western Hospital	A
Angliss Health Service	B
Bairnsdale Regional Health Service	B
Ballarat Health Services	B
Bendigo Health Care Group	B
Central Gippsland Health Service – Sale	B
Cranbourne Integrated Care Centre	B
Echuca Regional Health	B
Goulburn Valley Health – Shepparton	B
Latrobe Regional Hospital	B
Maroondah Hospital	B
Mercy Public Hospitals Inc – Werribee Campus	B
New Mildura Base Hospital	B
Rosebud Hospital	B
Sandringham and District Memorial Hospital	B
South West Health Care – Warrnambool Campus	B
Swan Hill District Hospital	B
Wangaratta District Base Hospital	B
West Gippsland Health Care Group – Warragul	B
Western District Health Service – Hamilton	B
Williamstown Hospital	B
Wimmera Health Care Group – Dimboola	B
Wimmera Health Care Group – Horsham	B
Wodonga Regional Health Service	B
Benalla and District Memorial Hospital	C
Colac Community Health Services	C
Djerriwarrh Health Services	C
East Grampians Health Service – Ararat	C
Gippsland Southern Health Service – Korrumburra	C
Gippsland Southern Health Service – Leongatha	C
Kyabram and District Memorial Community Hospital	C
Maryborough District Health Service	C
Mt Alexander Hospital	C
Portland and District Hospital	C
South West Health Care – Camperdown Campus	C

Health service	Category
Stawell Regional Health	C
West Wimmera Health Service – Nhill	C
Wonthaggi and District Hospital	C
Yarra Ranges Health Service	C
Alexandra District Hospital	D
Beechworth Hospital	D
Casterton Memorial Hospital	D
Cobram District Hospital	D
Cohuna District Hospital	D
East Wimmera Health Service – Birchip	D
East Wimmera Health Service – Charleton	D
East Wimmera Health Service – Donald	D
East Wimmera Health Service – St Arnaud	D
East Wimmera Health Service – Wycheproof	D
Edenhope and District Hospital	D
Hepburn Health Service – Daylesford	D
Kerang and District Hospital	D
Kilmore and District Hospital	D
Kooweerup Regional Health Service	D
Kyneton District Health Service.	D
Mansfield District Hospital	D
Moyne Health Services	D
Numurkah and District Health Service	D
Rochester and Elmore District Health Service	D
Rural Northwest Health – Hopetoun	D
Rural Northwest Health – Warracknabeal	D
Seymour District Memorial Hospital	D

Health service	Category
Terang and Mortlake Health Service	D
Yarram and District Health	D
Yarrawonga District Health Service	D
Beaufort and Skipton Health Service	E
Boort District Hospital	E
Coleraine District Health Services	E
Hesse Rural Health Service	E
Heywood Rural Health	E
Inglewood and District Health Service	E
Lorne Community Hospital	E
Maldon Hospital	E
Manangatang and District Hospital	E
McIvor Health and Community Services	E
Nathalia District Hospital	E
Omeo District Hospital	E
Robinvale District Health Service	E
South Gippsland Hospital	E
Tallangatta Health Service	E
Yea and District Memorial Hospital	E
Alpine Health – Bright	M
Alpine Health – Mt Beauty	M
Alpine Health – Myrtleford	M
Far East Gippsland Health and Support Service	M
Mallee Track Health and Community Service	M
Otway Health and Community Services	M
Timboon and District Health Care Service	M
Upper Murray Health and Community Services	M

Appendix 3: Aggregate data by hospital category

SECTION A The role of hospital management in infection control

Item	Rating	A	B	C	D	E	M	State average
1.1 Documented Strategic Management Plan	EA	89.5%	87.0%	93.3%	88.5%	87.5%	100.0%	89.7%
	MA	10.5%	13.0%	6.7%	7.6%	6.3%	0.0%	8.4%
	SA	0.0%	0.0%	0.0%	0.0%	6.3%	0.0%	1.9%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1.2 Board signs off SMP	EA	68.4%	43.5%	60.0%	46.2%	25.0%	50.0%	48.6%
	MA	10.5%	26.1%	20.0%	34.6%	18.8%	37.5%	24.3%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	21.1%	30.4%	20.0%	19.2%	56.3%	12.5%	27.1%
1.3 Progress reporting on SMP priorities	EA	36.8%	21.7%	6.7%	15.4%	6.3%	0.0%	16.8%
	MA	36.8%	26.1%	46.7%	0.0%	12.5%	12.5%	21.5%
	SA	21.1%	4.3%	26.7%	26.9%	12.5%	0.0%	16.8%
	LA	5.3%	47.8%	20.0%	57.7%	68.8%	87.5%	44.9%
2.1 Executive Sponsor responsibilities defined	EA	94.4%	95.5%	100.0%	100.0%	100.0%	100.0%	98.1%
	MA	5.6%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%
	SA	0.0%	4.5%	0.0%	0.0%	0.0%	0.0%	1.0%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3.1 Multidisciplinary IC team/ committee exists	EA	89.5%	91.3%	100.0%	57.7%	87.5%	87.5%	83.2%
	MA	10.5%	8.7%	0.0%	0.0%	6.3%	12.5%	5.6%
	SA	0.0%	0.0%	0.0%	3.8%	0.0%	0.0%	0.9%
	LA	0.0%	0.0%	0.0%	38.5%	6.3%	0.0%	10.3%
3.4.1 Organisational support and resources	EA	84.2%	100.0%	66.7%	91.3%	93.8%	100.0%	89.4%
	MA	15.8%	0.0%	20.0%	8.7%	0.0%	0.0%	7.7%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	0.0%	0.0%	13.3%	0.0%	6.3%	0.0%	2.9%
3.4.2 Computer/IT support	Yes	100.0%	100.0%	93.0%	88.0%	88.0%	100.0%	94.4%
Email/Internet access	Yes	100.0%	100.0%	93.0%	88.0%	88.0%	100.0%	94.4%
4.1 IC team/committee is consulted in regard to capital works planning input	Yes	100.0%	100.0%	100.0%	92.3%	100.0%	100.0%	98.1%
5.1 Formal links with Infectious Diseases service	EA	94.7%	60.9%	53.3%	7.7%	6.3%	0.0%	40.2%
	MA	0.0%	21.7%	26.7%	46.1%	25.0%	50.0%	27.1%
	SA	5.3%	13.0%	20.0%	46.1%	68.8%	50.0%	31.8%
	LA	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	0.9%
6.1 IC policies and procedures reviewed	EA	89.5%	82.6%	93.3%	80.8%	81.3%	75.0%	84.1%
	MA	0.0%	8.7%	6.7%	3.9%	6.3%	12.5%	5.6%
	SA	10.5%	4.4%	0.0%	15.4%	12.5%	12.5%	9.4%
	LA	0.0%	4.4%	0.0%	0.0%	0.0%	0.0%	0.9%

Item	Rating	A	B	C	D	E	M	State Average
7.1 IC risk management strategies in place	EA	73.7%	47.8%	66.7%	80.8%	62.5%	71.4%	67.0%
	MA	15.8%	30.4%	20.0%	7.7%	18.8%	14.3%	17.9%
	SA	0.0%	13.0%	6.7%	11.5%	6.3%	14.3%	8.5%
	LA	10.5%	8.7%	6.7%	0.0%	12.5%	0.0%	6.6%
8.1 Communication and feedback in relation to quality and risk management	EA	63.2%	78.3%	73.3%	80.8%	93.8%	87.5%	78.5%
	MA	31.6%	21.7%	26.7%	19.2%	6.3%	12.5%	20.6%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
9.1 Internal audit to assess compliance with policies and procedures	EA	21.1%	30.4%	33.3%	69.2%	81.3%	50.0%	47.7%
	MA	36.8%	47.8%	46.7%	23.1%	18.8%	37.5%	34.6%
	SA	31.6%	8.7%	13.3%	0.0%	0.0%	12.5%	10.3%
	LA	10.5%	13.0%	6.7%	7.7%	0.0%	0.0%	7.5%
11.1 IC Information given to patients and community	EA	52.6%	26.1%	53.3%	26.9%	50.0%	50.0%	40.2%
	MA	31.6%	39.1%	26.7%	3.8%	6.3%	25.0%	21.5%
	SA	0.0%	0.0%	0.0%	7.7%	0.0%	0.0%	1.9%
	LA	15.8%	34.8%	20.0%	61.5%	43.8%	25.0%	36.4%

SECTION B Cleaning disinfection and sterilisation of medical and surgical equipment

Item	Rating	A	B	C	D	E	M	State average
1.1 CSSD external service provider contracts meets AS4187	EA	40.0%	33.3%	NA	NA	100.0%	NA	44.4%
	MA	20.0%	66.7%	NA	NA	0.0%	NA	33.3%
	SA	0.0%	0.0%	NA	NA	0.0%	NA	0.0%
	LA	40.0%	0.0%	NA	NA	0.0%	NA	22.2%
1.3 CSSD manager has responsibility for sterilisation, disinfection and cleaning	EA	68.4%	91.3%	80.0%	73.1%	56.3%	87.5%	75.7%
	MA	26.3%	8.7%	20.0%	26.9%	18.8%	12.5%	19.6%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	5.3%	0.0%	0.0%	0.0%	25.0%	0.0%	4.7%
2.1 CSSD manager consulted in relation to equipment purchasing	EA	15.8%	17.4%	6.7%	7.7%	0.0%	0.0%	9.6%
	MA	47.4%	60.9%	73.3%	76.9%	76.9%	100.0%	69.2%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	36.8%	21.7%	20.0%	15.4%	23.1%	0.0%	21.2%
2.2 Decision to purchase instruments based on ease of cleaning	EA	22.2%	27.3%	33.3%	13.0%	28.6%	0.0%	21.7%
	MA	44.4%	68.2%	66.7%	73.9%	71.4%	100.0%	67.4%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	33.3%	4.5%	0.0%	13.0%	0.0%	0.0%	10.9%
2.3 Decision to purchase instruments based on capacity to undergo sterilisation or disinfection within health service	EA	11.1%	13.6%	20.0%	4.0%	12.5%	0.0%	10.4%
	MA	77.8%	86.4%	80.0%	92.0%	87.5%	100.0%	86.5%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	11.1%	0.0%	0.0%	4.0%	0.0%	0.0%	3.1%
2.4 Staff are educated when new equipment/systems introduced	EA	21.1%	13.0%	53.3%	34.6%	18.8%	37.5%	28.0%
	MA	57.9%	52.2%	26.7%	23.1%	0.0%	25.0%	32.7%
	SA	21.1%	34.8%	20.0%	38.5%	68.8%	37.5%	36.4%
	LA	0.0%	0.0%	0.0%	3.8%	12.5%	0.0%	2.8%
3.1 Written policies for cleaning, disinfection and sterilising across health service	EA	22.2%	4.4%	20.0%	19.2%	43.8%	0.0%	18.8%
	MA	36.9%	43.5%	20.0%	26.9%	6.3%	0.0%	26.2%
	SA	16.7%	34.8%	46.7%	34.6%	25.0%	87.5%	35.5%
	LA	22.2%	17.4%	13.3%	19.2%	25.0%	12.5%	19.6%
3.1.1 Written policies for cleaning, disinfection and sterilising in CSSD	EA	72.2%	36.4%	40.0%	30.4%	57.1%	0.0%	41.3%
	MA	27.8%	40.9%	46.7%	52.2%	14.3%	71.4%	42.4%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	0.0%	22.7%	13.3%	17.4%	28.6%	40.0%	16.7%
4.1 Audits for compliance with AS 4187 across health service	EA	26.3%	26.1%	33.3%	23.1%	12.5%	25.0%	24.3%
	MA	31.6%	30.4%	26.7%	34.6%	37.5%	50.0%	33.6%
	SA	21.0%	21.7%	26.7%	19.2%	0.0%	12.5%	17.8%
	LA	21.0%	21.7%	13.3%	23.1%	50.0%	12.5%	24.3%
4.1.1 Audits for compliance with AS 4187 within supply department	EA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	53.9%	50.0%	46.2%	63.6%	66.7%	12.5%	52.3%
	LA	46.1%	50.0%	53.9%	36.4%	33.3%	87.5%	47.7%

Item	Rating	A	B	C	D	E	M	State average
5.1.1 Individual patient tracking of steam processed sterilised items	Yes	36.8%	52.2%	100.0%	69.2%	31.3%	25.0%	55.1%
6.1.1 Individual patient tracking of chemically processed sterilised items	Yes	78.9%	73.9%	60.0%	38.5%	0.0%	0.0%	47.7%
7.1.1 Policies and procedures for storage, handling and transportation of sterile stock in CSSD	EA	44.4%	27.3%	73.3%	30.4%	33.3%	71.4%	42.9%
	MA	38.9%	36.4%	13.3%	30.4%	50.0%	0.0%	29.7%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	16.7%	36.4%	13.3%	39.1%	16.7%	28.6%	27.5%
7.1.2 Policies and procedures for storage, handling and transportation of sterile stock in Supply	EA	42.9%	25.0%	33.3%	18.2%	10.0%	50.0%	27.1%
	MA	14.3%	30.0%	20.0%	36.4%	20.0%	0.0%	24.7%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	42.9%	45.0%	46.7%	45.5%	70.0%	66.7%	48.2%
7.2 Transportation of sterile stock across the health service is in accordance with AS 4187	EA	66.7%	42.9%	26.7%	53.8%	57.1%	37.5%	49.0%
	MA	22.2%	42.9%	53.3%	38.5%	21.4%	50.0%	37.3%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	11.1%	14.3%	20.0%	7.7%	21.4%	12.5%	13.7%
7.2.1 Transportation of sterile stock within the Supply Department is in accordance with AS 4187	EA	71.4%	50.0%	33.3%	58.3%	50.0%	62.5%	53.8%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	28.6%	50.0%	66.7%	41.7%	50.0%	37.5%	46.2%
7.3 Across the health service, storage areas for sterile stock are consistent with AS 4187	EA	15.8%	17.4%	26.7%	7.7%	25.0%	37.5%	18.7%
	MA	57.9%	34.8%	13.3%	38.5%	12.5%	0.0%	30.8%
	SA	21.1%	17.4%	13.3%	15.4%	0.0%	0.0%	13.1%
	LA	5.3%	30.4%	46.7%	38.5%	62.5%	62.5%	37.4%
7.3.1 Within CSSD, storage areas for sterile stock are consistent with AS 4187	EA	88.9%	54.5%	46.7%	47.6%	14.3%	28.6%	53.3%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	11.1%	45.5%	53.3%	52.4%	85.7%	71.4%	46.7%
7.3.2 Within Supply, storage areas for sterile stock are consistent with AS 4187	EA	50.0%	35.0%	26.7%	13.0%	36.4%	60.0%	32.0%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	50.0%	65.0%	73.3%	87.0%	63.6%	40.0%	68.2%
7.4 Supply department ensure that the integrity of sterile stock is maintained	EA	100.0%	60.0%	40.0%	41.7%	50.0%	37.5%	54.8%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	0.0%	40.0%	60.0%	58.3%	50.0%	62.5%	45.2%

Item	Rating	A	B	C	D	E	M	State average
7.5 Stock rotation is incorporated into sterile stock storage practices	EA	83.3%	77.3%	93.3%	92.3%	100.0%	100.0%	89.2%
	MA	16.7%	18.2%	6.7%	7.7%	0.0%	0.0%	9.8%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	0.0%	4.6%	0.0%	0.0%	0.0%	0.0%	1.0%
8.1.1 Policies specifying when 'flash' sterilisation is used in CSSD	EA	41.7%	33.3%	38.5%	21.1%	66.7%	75.0%	36.2%
	MA	16.7%	22.2%	15.4%	10.5%	0.0%	0.0%	14.5%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	41.7%	44.4%	46.2%	68.4%	33.3%	25.0%	49.3%
8.1.2 Written documentation to monitor 'flash' usage in CSSD	EA	0.0%	5.6%	0.0%	10.5%	33.3%	0.0%	5.8%
	MA	66.7%	77.8%	84.6%	63.2%	66.7%	100.0%	73.1%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	33.3%	16.7%	15.4%	26.3%	0.0%	0.0%	20.3%
9.1 Policy for reprocessing single use medical devices	EA	52.6%	65.2%	80.0%	73.1%	75.0%	37.5%	66.4%
	MA	42.1%	13.0%	6.7%	11.5%	12.5%	37.5%	18.7%
	SA	0.0%	0.0%	6.7%	0.0%	0.0%	0.0%	0.9%
	LA	5.3%	21.7%	6.7%	15.4%	12.5%	25.0%	14.0%
12.1.1 Monitoring processes for cleaning, sterilisation and disinfection equipment in CSSD	EA	38.9%	63.6%	57.1%	73.9%	57.1%	100.0%	62.6%
	MA	44.4%	22.7%	42.9%	13.0%	14.3%	0.0%	25.3%
	SA	16.7%	13.6%	0.0%	13.0%	28.6%	0.0%	12.1%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
12.1.2 Maintenance and calibration for cleaning, sterilisation and disinfection equipment in CSSD	EA	44.4%	45.5%	57.1%	69.6%	57.1%	71.4%	56.0%
	MA	38.9%	31.8%	35.7%	17.4%	14.3%	14.3%	27.4%
	SA	16.7%	22.7%	7.1%	13.0%	28.6%	20.0%	16.8%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
12.2.1 Monitoring processes for cleaning, sterilisation and disinfection equipment in DPU	EA	70.0%	33.3%	NA	NA	NA	NA	61.5%
	MA	20.0%	0.0%	NA	NA	NA	NA	15.4%
	SA	0.0%	33.3%	NA	NA	NA	NA	7.7%
	LA	10.0%	33.3%	NA	NA	NA	NA	15.4%
12.2.2 Maintenance and calibration for cleaning, sterilisation and disinfection equipment in DPU	EA	55.6%	66.7%	NA	NA	NA	NA	58.3%
	MA	11.1%	0.0%	NA	NA	NA	NA	8.3%
	SA	33.3%	0.0%	NA	NA	NA	NA	25.0%
	LA	0.0%	33.3%	NA	NA	NA	NA	8.3%
12.4.1 Monitoring processes for cleaning, sterilisation and disinfection equipment in Emergency	EA	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	83.3%	100.0%	50.0%	100.0%	50.0%	50.0%	79.1%
	LA	14.3%	0.0%	50.0%	0.0%	50.0%	50.0%	16.7%
12.5.1 Monitoring processes for cleaning, sterilisation and disinfection equipment in Endoscopy	EA	90.0%	100.0%	100.0%	100.0%	NA	100.0%	94.1%
	MA	0.0%	0.0%	0.0%	0.0%	NA	0.0%	0.0%
	SA	10.0%	0.0%	0.0%	0.0%	NA	0.0%	5.9%
	LA	0.0%	0.0%	0.0%	0.0%	NA	0.0%	0.0%

Item	Rating	A	B	C	D	E	M	State average
12.5.2 Maintenance and calibration for cleaning, sterilisation and disinfection equipment in Endoscopy	EA	0.0%	0.0%	0.0%	0.0%	NA	0.0%	0.0%
	MA	10.0%	50.0%	0.0%	100.0%	NA	0.0%	23.5%
	SA	10.0%	0.0%	0.0%	0.0%	NA	0.0%	5.9%
	LA	80.0%	50.0%	100.0%	0.0%	NA	100.0%	70.6%
12.8.1 Monitoring processes for cleaning, sterilisation and disinfection equipment in Operating suite	EA	72.2%	90.5%	100.0%	60.0%	0.0%	66.7%	79.7%
	MA	22.2%	0.0%	0.0%	20.0%	0.0%	0.0%	9.4%
	SA	5.6%	4.8%	0.0%	20.0%	100.0%	33.3%	9.4%
	LA	0.0%	4.8%	0.0%	0.0%	0.0%	0.0%	1.6%
12.8.2 Maintenance and calibration for cleaning, sterilisation and disinfection equipment in Operating suite	EA	38.9%	47.6%	81.8%	60.0%	0.0%	100.0%	54.7%
	MA	16.7%	9.5%	9.1%	0.0%	0.0%	0.0%	9.4%
	SA	44.4%	38.1%	9.1%	40.0%	100.0%	0.0%	34.4%
	LA	0.0%	4.8%	0.0%	0.0%	0.0%	0.0%	1.7%
12.10.1 Monitoring processes for cleaning, sterilisation and disinfection equipment in Outpatients	EA	50.0%	33.3%	NA	NA	0.0%	NA	36.4%
	MA	0.0%	0.0%	NA	NA	0.0%	NA	0.0%
	SA	33.3%	66.7%	NA	NA	50.0%	NA	45.5%
	LA	16.7%	0.0%	NA	NA	50.0%	NA	18.2%
12.10.2 Maintenance and calibration for cleaning, sterilisation and disinfection equipment in Outpatients	EA	33.3%	0.0%	NA	NA	50.0%	NA	27.3%
	MA	0.0%	0.0%	NA	NA	0.0%	NA	0.0%
	SA	66.7%	100.0%	NA	NA	0.0%	NA	63.6%
	LA	0.0%	0.0%	NA	NA	50.0%	NA	9.1%
12.11.1 Monitoring processes for cleaning, sterilisation and disinfection equipment in Podiatry	EA	NA	100.0%	0.0%	33.3%	NA	NA	40.0%
	MA	NA	0.0%	0.0%	0.0%	NA	NA	0.0%
	SA	NA	0.0%	100.0%	33.3%	NA	NA	40.0%
	LA	NA	0.0%	0.0%	33.3%	NA	NA	20.0%
12.11.2 Maintenance and calibration for cleaning, sterilisation and disinfection equipment in Podiatry	EA	NA	100.0%	0.0%	66.7%	NA	NA	60.0%
	MA	NA	0.0%	0.0%	0.0%	NA	NA	0.0%
	SA	NA	0.0%	100.0%	0.0%	NA	NA	20.0%
	LA	NA	0.0%	0.0%	33.3%	NA	NA	20.0%

SECTION C Surveillance activities

Item	Rating	A	B	C	D	E	M	State average
1.1 Evidence of a plan for nosocomial surveillance	EA	94.7%	95.7%	80.0%	92.3%	81.3%	87.5%	89.7%
	MA	0.0%	4.3%	20.0%	3.8%	12.5%	0.0%	6.5%
	SA	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
	LA	0.0%	0.0%	0.0%	3.8%	6.3%	12.5%	2.8%
2.1 Analysis of surveillance data	EA	94.7%	82.6%	60.0%	96.0%	87.5%	50.0%	83.2%
	MA	5.3%	13.0%	13.3%	0.0%	0.0%	0.0%	5.6%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	0.0%	4.4%	26.7%	3.9%	12.5%	50.0%	11.2%
2.2 Evidence of data fed back to stakeholders	EA	57.9%	72.7%	90.9%	72.0%	57.1%	75.0%	69.5%
	MA	42.1%	18.2%	9.1%	0.0%	0.0%	0.0%	13.7%
	SA	0.0%	9.1%	0.0%	24.0%	42.9%	25.0%	15.8%
	LA	0.0%	0.0%	0.0%	4.0%	0.0%	0.0%	1.1%
2.3 Evidence that data used to improve outcomes	EA	47.4%	27.3%	54.5%	28.0%	30.8%	25.0%	35.0%
	MA	47.4%	22.7%	9.0%	0.0%	0.0%	0.0%	15.8%
	SA	5.3%	50.0%	36.4%	72.0%	71.4%	75.0%	49.5%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

SECTION D Occupational health and safety; Staff infection prevention and control

Item	Rating	A	B	C	D	E	M	State average
1.1 Evidence of policies and procedures for infection control amd staff immunisation	EA	47.4%	60.9%	73.3%	80.8%	75.0%	75.0%	68.2%
	MA	47.4%	34.8%	26.7%	7.7%	18.8%	25.0%	26.2%
	SA	5.3%	4.3%	0.0%	11.5%	6.3%	0.0%	5.6%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1.2 Policies and procedures based on DHS guidelines	Yes	100.0%	95.7%	93.3%	96.2%	81.3%	75.0%	92.5%
2.1 Immunisation available to paid employees	EA	47.4%	78.3%	86.7%	88.5%	93.8%	100.0%	80.4%
	MA	42.1%	8.7%	13.3%	11.5%	6.3%	0.0%	15.0%
	SA	10.5%	13.0%	0.0%	0.0%	0.0%	0.0%	4.7%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2.2 Cost of immunisation is funded by health service	EA	100.0%	90.9%	92.9%	100.0%	93.8%	100.0%	96.1%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	9.1%	7.1%	0.0%	6.3%	0.0%	3.9%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3.1 Evidence of systems for documenting staff infection control and immunication	EA	68.4%	87.0%	100.0%	96.2%	87.5%	87.5%	87.9%
	MA	21.1%	8.7%	0.0%	3.8%	6.3%	0.0%	7.5%
	SA	5.3%	4.3%	0.0%	0.0%	6.3%	12.5%	3.7%
	LA	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
6.1 Hep B post exposure policy	Yes	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Hep C post exposure policy	Yes	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
TB post exposure policy	Yes	94.7%	65.2%	40.0%	11.5%	37.5%	37.5%	47.7%
HIV post exposure policy	Yes	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Varicella post exposure policy	Yes	84.2%	30.4%	13.3%	3.8%	12.5%	12.5%	27.1%
Meningococcal disease post exposure policy	Yes	68.4%	47.8%	26.7%	7.7%	25.0%	37.5%	34.6
Measles post exposure policy	Yes	52.6%	13.0%	20.0%	3.8%	18.8%	12.5%	19.6%
6.2 Post exposure policy for HIV includes access to counselling	EA	68.4%	73.9%	66.7%	69.2%	62.5%	87.5%	70.1%
	MA	26.3%	17.4%	20.0%	0.0%	6.3%	0.0%	12.1%
	SA	5.3%	8.7%	6.7%	3.8%	0.0%	0.0%	4.7%
	LA	0.0%	0.0%	6.7%	26.9%	31.3%	12.5%	13.1%
6.3 Post exposure policy for Hep C includes access to counselling	EA	73.7%	65.2%	53.3%	65.4%	62.5%	50.0%	63.6%
	MA	21.1%	21.7%	20.0%	0.0%	6.3%	0.0%	12.1%
	SA	5.3%	0.0%	6.7%	3.8%	0.0%	0.0%	2.8%
	LA	0.0%	13.0%	20.0%	30.8%	31.3%	50.0%	21.5%
6.4 Policies and procedures for management of out of hours exposure to blood borne viruses	EA	94.7%	95.7%	93.3%	100.0%	100.0%	100.0%	97.2%
	MA	5.3%	4.3%	6.7%	0.0%	0.0%	0.0%	2.8%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Item	Rating	A	B	C	D	E	M	State average
6.6 Policies and procedures for staff who have been exposed to or have contracted infectious diseases	EA	57.9%	34.8%	46.7%	50.0%	62.5%	12.5%	46.7%
	MA	10.5%	21.7%	6.7%	0.0%	6.3%	0.0%	8.4%
	SA	15.8%	4.3%	0.0%	3.8%	0.0%	0.0%	4.7%
	LA	15.8%	39.1%	46.7%	46.2%	31.3%	87.5%	40.2%

SECTION E Education and training

Item	Rating	A	B	C	D	E	M	State average
1.1 Evidence of an infection control induction program	EA	95.0%	100.0%	100.0%	84.6%	87.5%	90.6%	93.2%
	MA	0.0%	0.0%	0.0%	11.5%	6.7%	16.7%	4.8%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	5.3%	0.0%	0.0%	3.8%	0.0%	0.0%	1.9%
1.2 Consultants/VMO's attend induction	Yes	5.3%	26.1%	26.7%	11.5%	25.0%	0.0%	16.8%
Fellows attend induction	Yes	0.0%	4.4%	6.7%	0.0%	0.0%	0.0%	1.9%
Hospital medical officers attend induction	Yes	15.8%	52.2%	6.7%	3.8%	0.0%	12.5%	15.9%
Interns attend induction	Yes	68.5%	60.9%	6.7%	0.0%	0.0%	0.0%	26.2%
Registrars attend induction	Yes	5.3%	47.8%	20.0%	3.8%	0.0%	0.0%	15.0%
1.4 Attendance at induction is compulsory	EA	72.2%	81.8%	80.0%	84.0%	100.0%	83.1%	83.3%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	27.8%	18.2%	20.0%	16.0%	0.0%	16.8%	16.7%
1.5 Evidence that learning outcomes at induction are evaluated	EA	22.2%	9.1%	26.7%	8.0%	6.7%	0.0%	12.8%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	11.1%	13.6%	6.7%	8.0%	33.3%	0.0%	12.9%
	LA	66.7%	77.3%	66.7%	84.0%	60.0%	100.0%	74.3%
1.6 Evidence that induction program is reviewed and modified	EA	72.2%	59.1%	73.3%	36.0%	53.3%	66.7%	58.4%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	27.8%	41.0%	26.7%	64.0%	40.0%	33.3%	41.6%
	LA	0.0%	0.0%	0.0%	0.0%	6.7%	0.0%	1.0%
2.1 Evidence of an ongoing infection control education program	EA	57.9%	86.4%	86.7%	80.8%	81.3%	87.5%	79.3%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	10.6%	4.6%	13.3%	7.7%	6.3%	12.5%	8.5%
	LA	31.6%	9.1%	0.0%	11.5%	12.5%	0.0%	12.3%
2.2 Consultants/VMO's attend ongoing education	Yes	31.6%	34.8%	33.3%	11.5%	25.0%	25.0%	25.2%
Fellows attend ongoing education	Yes	26.3%	4.4%	0.0%	0.0%	0.0%	0.0%	5.6%
Hospital medical officers attend ongoing education	Yes	31.6%	34.8%	0.0%	0.0%	0.0%	0.0%	13.1%
Interns attend ongoing education	Yes	31.6%	34.8%	0.0%	0.0%	0.0%	0.0%	13.1%
Registrars attend ongoing education	Yes	31.6%	21.7%	0.0%	3.8%	0.0%	0.0%	11.2%
2.5 Evidence that learning outcomes at ongoing education are evaluated	EA	44.4%	35.0%	77.0%	73.1%	73.3%	37.5%	58.0%
	MA	16.7%	20.0%	7.7%	0.0%	0.0%	62.5%	13.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	38.9%	45.0%	15.4%	26.9%	26.7%	0.0%	29.0%

Item	Rating	A	B	C	D	E	M	State average
2.6 Evidence that ongoing education program is reviewed and modified	EA	30.8%	35.0%	33.3%	21.7%	14.3%	12.5%	25.8%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	7.7%	10.0%	0.0%	39.1%	21.4%	25.0%	18.3%
	LA	61.5%	55.0%	66.7%	39.1%	64.3%	62.5%	55.9%

SECTION F Infection control factors in the physical environment

Item	Rating	A	B	C	D	E	M	State average
1.1 Evidence that there is a planned maintenance program/schedule	EA	89.5%	90.9%	66.7%	76.0%	87.5%	75.0%	81.9%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	10.5%	9.1%	33.3%	24.0%	12.5%	25.0%	18.1%
1.5 Evidence of a policy to minimise spread of contaminants by engineering when conducting maintenance	EA	57.9%	8.7%	13.3%	15.4%	0.0%	0.0%	17.8%
	MA	10.5%	52.2%	60.0%	38.5%	31.3%	25.0%	37.4%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	31.6%	39.1%	26.7%	46.2%	68.8%	75.0%	44.9%
2.1 Feedback on physical environment monitoring is provided to IC team/ committee	EA	84.2%	56.5%	60.0%	69.2%	25.0%	25.0%	57.9%
	MA	10.5%	26.1%	26.7%	11.5%	56.3%	62.5%	27.1%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%
	LA	5.26%	17.39%	13.33%	19.23%	18.75%	12.50%	15.0%
3.1 Evidence that there is engineering representation as a full time IC committee member or co-opted when necessary	EA	57.9%	69.6%	78.6%	50.0%	62.5%	75.0%	63.2%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	42.1%	30.4%	21.4%	50.0%	37.5%	25.0%	36.8%
4.1 Evidence of a risk management plan for legionnaire's disease	EA	100.0%	82.6%	86.7%	61.5%	56.3%	62.5%	75.7%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	0.0%	17.4%	13.3%	38.5%	43.8%	37.5%	24.3%
4.2 Cooling towers maintained in accordance with guidelines	EA	100.0%	100.0%	100.0%	100.0%	NA	NA	100%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
4.3 Warm water systems maintained in accordance with guidelines	EA	75.0%	95.5%	72.7%	73.7%	100.0%	100.0%	84.5%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	25.0%	4.5%	27.3%	26.3%	0.0%	0.0%	15.5%
5.1 Assessment of isolation requirements and capacity undertaken in accordance with guidelines	EA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	MA	36.8%	30.4%	20.0%	11.5%	12.5%	37.5%	23.4%
	SA	42.1%	30.4%	40.0%	30.8%	12.5%	0.0%	29.0%
	LA	21.1%	39.1%	40.0%	57.7%	75.0%	62.5%	47.7%
5.4 Isolation facilities meet requirements of guidelines	EA	21.1%	27.8%	28.6%	16.7%	50.0%	100.0%	27.3%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	78.9%	72.2%	71.4%	83.3%	50.0%	0.0%	72.7%

Item	Rating	A	B	C	D	E	M	State average
8.1 Documented system to undertake IC risk assessment before commencing redesign/ redevelopment or structural maintenance	EA	15.8%	8.7%	6.7%	0.0%	0.0%	0.0%	5.6%
	MA	57.9%	17.4%	13.3%	0.0%	0.0%	0.0%	15.9%
	SA	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	0.9%
	LA	26.3%	69.6%	80.0%	100.0%	100.0%	100.0%	77.6%
8.2 Containment planning for contaminants during design phase of a project	EA	26.3%	13.0%	6.7%	7.7%	0.0%	0.0%	10.3%
	MA	52.6%	30.4%	26.7%	0.0%	6.3%	37.5%	23.4%
	SA	5.3%	34.8%	26.7%	15.4%	12.5%	12.5%	18.7%
	LA	15.8%	21.7%	40.0%	76.9%	81.3%	50.0%	47.7%
9.1 Policies and procedures for safe handling, transportation and disposal of sharps	EA	78.9%	56.5%	53.3%	50.0%	75.0%	87.5%	63.6%
	MA	21.1%	26.1%	20.0%	30.8%	12.5%	12.5%	22.4%
	SA	0.0%	13.0%	13.3%	11.5%	6.3%	0.0%	8.4%
	LA	0.0%	4.3%	13.3%	7.7%	6.3%	0.0%	5.6%
9.2 Sharps contracts contain IC related clauses	EA	15.8%	30.4%	13.3%	11.5%	31.3%	25.0%	20.6%
	MA	36.8%	34.8%	33.3%	19.2%	12.5%	37.5%	28.0%
	SA	10.5%	4.3%	0.0%	0.0%	0.0%	0.0%	2.8%
	LA	36.8%	30.4%	53.3%	69.2%	56.3%	37.5%	48.6%
11.1 Policies and procedures in place for waste management	EA	47.4%	60.9%	46.7%	50.0%	62.5%	75.0%	55.1%
	MA	42.1%	26.1%	46.7%	34.6%	37.5%	12.5%	34.6%
	SA	5.3%	8.7%	0.0%	3.8%	0.0%	12.5%	4.7%
	LA	5.3%	4.3%	6.7%	11.5%	0.0%	0.0%	5.6%
11.2 Waste management contracts contain IC related clauses	EA	21.1%	30.4%	14.3%	15.4%	31.3%	25.0%	22.6%
	MA	31.6%	26.1%	35.7%	15.4%	12.5%	37.5%	24.5%
	SA	5.3%	13.0%	0.0%	7.7%	0.0%	0.0%	5.7%
	LA	42.1%	30.4%	50.0%	61.5%	56.3%	37.5%	47.2%
12.1 Linen management policy in place	EA	26.3%	34.8%	53.3%	46.2%	62.5%	50.0%	43.9%
	MA	26.3%	34.8%	33.3%	30.8%	12.5%	25.0%	28.0%
	SA	5.3%	4.3%	6.7%	11.5%	6.3%	0.0%	6.5%
	LA	42.1%	26.1%	6.7%	11.5%	18.8%	25.0%	21.5%
12.2 Linen service contracts contain IC related clauses	EA	21.1%	18.2%	8.3%	14.3%	7.1%	0.0%	13.5%
	MA	42.1%	40.9%	66.7%	28.6%	57.1%	62.5%	45.8%
	SA	5.3%	4.5%	0.0%	0.0%	7.1%	0.0%	3.1%
	LA	31.6%	36.4%	25.0%	57.1%	28.6%	37.5%	37.5%
13.1 Documented procedures for decontaminating/ disinfecting patient care equipment prior to reuse	EA	15.8%	13.0%	26.7%	0.0%	0.0%	12.5%	10.3%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	10.5%	17.4%	13.3%	7.7%	25.0%	12.5%	14.0%
	LA	73.7%	69.6%	60.0%	92.3%	75.0%	75.0%	75.7%

Item	Rating	A	B	C	D	E	M	State average
14.1.1 Handbasins accessible – DPU	EA	83.3%	87.5%	76.9%	100.0%	100.0%	100.0%	87.7%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	16.7%	12.5%	23.1%	0.0%	0.0%	0.0%	12.2%
14.1.2 Handbasins accessible – Dental department	EA	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
14.1.3 Handbasins accessible – Emergency department	EA	87.5%	95.0%	84.6%	95.5%	100.0%	100.0%	93.4%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	12.5%	5.0%	15.4%	4.5%	0.0%	0.0%	6.6%
14.1.4 Handbasins accessible – Endoscopy department	EA	93.3%	90.0%	84.6%	100.0%	100.0%	100.0%	92.3%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	6.7%	10.0%	15.4%	0.0%	0.0%	0.0%	7.9%
14.1.5 Handbasins accessible – Outpatients	EA	94.4%	81.8%	66.7%	100.0%	100.0%	100.0%	92.3%
	MA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	LA	5.6%	18.2%	33.3%	0.0%	0.0%	0.0%	7.7%
14.1.6 Handbasins accessible – Podiatry	EA	100.0%	100.0%	87.5%	87.5%	NA	100.0%	94.4%
	MA	0.0%	0.0%	0.0%	0.0%	NA	0.0%	0.0%
	SA	0.0%	0.0%	0.0%	0.0%	NA	0.0%	0.0%
	LA	0.0%	0.0%	12.5%	12.5%	NA	0.0%	5.6%

SECTION G Prevention of the emergence and spread of antibiotic-resistant microorganisms

Item	Rating	A	B	C	D	E	M	State average
2.1.1 Written policies and procedures regarding use of antibiotics	EA	84.2%	69.6%	60.0%	45.8%	50.0%	57.1%	62.0%
	MA	10.5%	21.7%	13.3%	20.8%	16.7%	28.6%	18.0%
	SA	5.3%	0.0%	13.3%	0.0%	0.0%	0.0%	3.0%
	LA	0.0%	8.7%	13.3%	33.3%	33.3%	14.3%	17.0%
2.1.2 AB policy restricts access to broad spectrum and newly released AB's	Yes	100.0%	65.2%	53.3%	15.4%	6.3%	0.0%	43.9%
2.1.3 Effectiveness of AB restriction policy is audited	Yes	42.1%	8.7%	0.0%	0.0%	0.0%	0.0%	9.4%
3.1 Anaesthetic charts are audited to comply with AB prophylaxis for operative procedures	EA	5.6%	0.0%	0.0%	3.8%	0.0%	0.0%	1.9%
	MA	33.3%	13.0%	0.0%	3.8%	0.0%	0.0%	9.4%
	SA	27.8%	30.4%	20.0%	3.8%	0.0%	0.0%	15.1%
	LA	33.3%	56.5%	80.0%	88.5%	100.0%	100.0%	73.6%
3.5 Audit results are fed back to stakeholders	EA	46.2%	23.1%	0.0%	50.0%	NA	0.0%	32.4%
	MA	23.1%	23.1%	0.0%	0.0%	NA	0.0%	17.6%
	SA	23.1%	38.5%	66.7%	50.0%	NA	100.0%	38.2%
	LA	7.7%	15.4%	33.3%	0.0%	NA	0.0%	11.8%
5.1 Policies and procedures for detection, prevention and control of resistant micro-organisms	EA	36.8%	30.4%	13.3%	7.7%	37.5%	12.5%	23.4%
	MA	52.6%	34.8%	66.7%	26.9%	25.0%	12.5%	37.4%
	SA	10.5%	30.4%	0.0%	15.4%	18.8%	37.5%	17.8%
	LA	0.0%	4.3%	20.0%	50.0%	18.8%	37.5%	21.5%
6.1 Policies and procedures for safe isolation of suspected pulmonary TB	EA	73.7%	34.8%	6.7%	3.8%	31.3%	0.0%	27.1%
	MA	26.3%	17.4%	26.7%	7.7%	0.0%	37.5%	16.8%
	SA	0.0%	13.0%	20.0%	11.5%	18.8%	25.0%	13.1%
	LA	0.0%	34.8%	46.7%	76.9%	50.0%	37.5%	43.0%
8.1 Policies and procedures for identifying, transferring, discharging and readmitting patients colonisedor infected with MRSA or VRE	EA	27.8%	22.7%	20.0%	0.0%	30.8%	12.5%	17.6%
	MA	55.6%	22.7%	33.3%	11.5%	15.4%	12.5%	25.5%
	SA	16.7%	31.8%	6.7%	26.9%	30.8%	37.5%	24.5%
	LA	0.0%	22.7%	40.0%	61.5%	23.1%	37.5%	32.4%

Appendix 4: Supplementary Notes for Individual Health Services

These Supplementary Notes are designed to assist with the interpretation of the 2001–2002 infection control re-survey individual health services results. They outline the seven sections captured in the survey, and provide an overview of the aim, rationale and preferred practices and standards required in the key areas of a section.

The Supplementary Notes can be used to:

1. Identify the reference questions from the survey that relate to the key areas.
2. Clarify the required standards, practices and policies in key areas.
3. Identify performance indicators to evaluate key areas.
4. Clarify lines of responsibility in key areas.
5. Identify resources and references applicable to key areas.

In this way, the Supplementary Notes can be used alongside the results of the survey to identify specific areas of improvement and references that can be used to assist in addressing these areas.

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Section A: The role of health service management in infection control

Aim: To ensure that the health service Board and management develop, implement, monitor and resource policies, programs and procedures for effective prevention, monitoring and control of infection within the facility.

Executive sponsor

Reference questions: 2, 3, 4 and 5

Rationale	In order to promote infection control at a management level, it is important that the infection control service has an advocate at the executive level.
Role definition	In order to ensure that infection control is integrated in corporate governance, the role of the executive sponsor should be clearly defined in their job description.
Responsibility	The responsibility for infection control sponsorship may be a dual role for a particular senior executive person (such as director of nursing). Within this framework, the person will also have the ability to act as the executive sponsor. The executive sponsor ensures that the infection control team plays an integral part in the decision-making and communication processes in the health service. Examples of areas where infection control input is required might include: • Capital works planning. • Equipment purchasing. • Policy development. • Critical incident risk management planning relevant to infection control. • Relevant contract development and management. • Staff orientation. • Staff immunisation.

Strategic management plan (SMP)

Reference questions: 1, 2 and 13

Rationale	Each health service should have a documented Infection Control SMP that identifies key priorities for effective infection control and prevention (based on the five key areas outlined in the Department of Human Services *Infection Control Strategic Planning Guide*).
Operational plan	The health service Board has endorsed the SMP. • There is an operational plan, based on the SMP, which is reviewed annually and endorsed by the health service Board. • Key performance indicators are developed to reflect the impact of infection control on the health care organisation. These might include: – Cost-benefit analyses/studies. – Antibiotic utilisation studies. – Targeted surveillance (for example, multi-antibiotic-resistant organisms, device-related infections, targeted surgical procedures, timing of antibiotic prophylaxis).

Organisational business plan

Reference questions: 2 and 4

Rationale

The infection control service should be included in the organisational business planning process, and should be allocated wages, staff and an operational budget accordingly.

Staffing

An American study conducted in 1974 and 1983 identified that the minimum requirement for an effective infection control program was a ratio of one infection control practitioner per 250 occupied beds. In 2000, an additional 32 trained infection control personnel were provided to the Victorian health care sector to improve infection control services in acute health service settings.

Operational budget

The infection control team should be allocated sufficient resources and support to implement an effective infection control program. The infection control practitioner should have access to:

- Computer and IT support.
- Email and Internet access.
- Relevant professional journal and texts.
- Workshops and conferences.
- Clerical support.
- Educational materials and resources.

Communication

Reference questions: 4, 8 and 9

Rationale

One of the underlying functions of infection control is to establish communication mechanisms to allow dissemination and sharing of information in a timely manner. Examples of essential communication links include Department of Human Services correspondence and guidelines, legislation and regulation changes, and laboratory results.

Management level

It is the responsibility of the hospital management to ensure the integration of infection control with organisational quality, risk management and planning frameworks, including appropriate communication and feedback mechanisms with stakeholders.

The infection control team should have access to timely information that is relevant to, and adequate for, its activities. This should be facilitated through the infection control executive sponsor.

Infection control performance is reported to the Board on at least an annual basis. Variances and critical incidences should be reported more frequently.

A process for timely infection control variance and critical incidence reporting to the health service board needs to be in place.

Multidisciplinary infection control team

Infection control activities are included within Quality of Care Reports.

There should be a multidisciplinary infection control team, which has defined formal links with infectious diseases services.

Policy and procedures

Reference questions: 7 and 10

Evidence-based practice	Policy and procedures should be evidence based, and incorporate basic accreditation standards, NHMRC and State guidelines, Australian Standards, legislation and regulations. Policies and procedures relating to infection control are reviewed at least every two years to ensure their accuracy and validity. Internal audits are performed that monitor adherence to, and review the effectiveness of, infection control policies and procedures.
Performance indicator	Feedback of audit results are reported to key stakeholders and variances identified and addressed.

Consumer information

Reference questions: 11 and 12

Rationale	Public reporting is a key government strategy to ensure the accountability of health services, provide information to consumers and promote the community's confidence in public hospitals. There is a mechanism to ensure that patients and caregivers receive appropriate information regarding infection prevention and control to enable them to be equal participants in their care.
Consumer consultation	There is evidence of patients having received appropriate information (for example, patient/caregiver information booklets, patient education programs, posters, website, included as a question in patient satisfaction surveys). Patient information is developed based on a needs analysis, and in consultation with consumer groups, such as via the health service's Community Advisory Committee. Infection control activities are reported to the community/consumers via Community Advisory Committees and Quality of Care Reports.

Resource guide

Clinicians Health Channel, available at: www.clinicians.vic.gov.au/guide.htm

Victorian Department of Human Services **Guidelines for Infection Control Strategic Management Planning**, June 2000, available at: www.dhs.vic.gov.au/ahs/ic/index.htm

Victorian Department of Human Services **Infection Control in Victorian Public Hospitals 1998**, available at: infectioncontrol.health.vic.gov.au/infcon2/index.htm

Victorian Department of Human Services Consumer Participation Program website http://www.dhs.vic.gov.au/ahs/quality/conpart.htm

Scheckler W, Brimhall D, Buck A et al, 1998, **'Requirements For Infrastructure and Essential Activities of Infection Control and Epidemiology in Hospitals: A Consensus Panel Report'**, in *American Journal of Infection Control*, 26 (1): 47-60.

Horan-Murphy E, Barnard B, Chenoweth C et al, 1999, **'APIC/CHICAæCanadian Infection Control and Epidemiology: Professional and Practice Standards'**, in *American Journal of Infection Control*, 27 (1): 47–51.

Section B: Cleaning, disinfection and sterilisation of medical/surgical equipment

Aim: To comply with Australian Standards, regulations and guidelines in relation to cleaning, disinfection and sterilisation of medical and surgical instruments and equipment.

CSSD Management

Reference questions: 1 and 2

Rationale	To provide a safe environment for staff and patients by ensuring that all sterilisation services in the health service comply with relevant Australian Standards, guidelines and regulations.
Qualifications	The CSSD manager, or their equivalent, has appropriate qualifications and experience in sterilising processes.
Responsibilities	The CSSD manager, or their equivalent, has responsibility for sterilisation, disinfection and cleaning reusable instruments and equipment across the health service.
Consultation	The CSSD manager, or their equivalent, should be involved with, and consulted on, the instrument and equipment purchasing plan. There should be a documented process, by which instruments considered for purchase are assessed for their suitability for ease of cleaning, and their ability to withstand disinfection and sterilisation procedures. Within larger health services, there may also be a product evaluation group or equivalent (that is, clinical equipment purchasing reviewer/advisor), which monitors and standardises the purchasing of equipment throughout the health service. All health services would benefit from a close formal liaison between the supply department, CSSD manager and infection control.
Contracted service	When a health service's equipment sterilisation services, or part of it, are externally contracted, the contract agreement should contain infection control-related clauses, and should ensure that the external service complies with all relevant standards, including AS4187 standards for infection control, cleaning, disinfection and sterilisation. It is the health service's responsibility to ensure that evidence of compliance with quality control of practice standards are provided at defined intervals by the external organisation.

Policy and procedures

Reference questions: 3, 4, 6 and 9

Rationale

To ensure that cleaning, disinfection and sterilisation is performed throughout the health service, policies and procedures, based on current guidelines, need to be available in all departments that reprocess instruments and equipment (for example, TSSU, emergency department, and so on).

Evidence based

Policies and procedures should comply with the current AS4187–1998 Australian Standard (Code of practice for cleaning, disinfecting and sterilising reusable medical and surgical instruments and equipment, and maintenance of associated environments in health care facilities). Polices should cover:

- Cleaning used items.
- Inspection and packaging of items for sterilisation.
- Loading sterilisers.
- Routine monitoring of the sterilisation process.
- Documentation of steriliser cycles, including batch labelling.
- Tracking and recall procedure.
- Storage and handling of sterile stock.
- Transporting sterile stock.
- Treatment of used items at ward or department area, including decontamination and cleaning.
- Transportation of used equipment items.
- Quality control checks of sterile items at point of use (that is, package integrity, sterility indicators).

Performance indicators

Audits are conducted at least annually, in all departments that reprocess instruments and equipment, to ensure that work practices are in accordance with the health services policies and procedures for cleaning, disinfection and sterilising reusable instruments and equipment.

Feedback of audit results is reported to key stakeholders, and any variances addressed.

Education

Reference questions: 2 and 9

Rationale

All staff working in departments that reprocess instruments and equipment are provided with teaching and learning opportunities, in order to ensure compliance with Australian Standards, guidelines and regulations.

Competency-based training

A competency-based training program should be developed for all personnel who work in the CSSD department. Such a program should be upgraded on an annual basis.

Ongoing education should be provided in the following areas:

- Transportation and storage of sterile supplies.
- Flash sterilisation.
- Decontamination.
- PPE.
- Monitoring equipment (including operational parameters, chemical and biological indicators).

Staff must be educated and trained when any new equipment or systems for cleaning, sterilisation and disinfection are purchased or introduced. Annual updates should be undertaken to maintain competencies.

Education should be documented in staff training records.

Flash sterilisation

Reference question: 10

Rationale

Flash sterilisation should only be used as an emergency procedure, due to the possibility of recontamination of sterilised instruments during transport to the sterile field if they are not used immediately after flash sterilisation. Use of flash sterilisation should comply with AS4187.

Policy and procedures

There are documented polices and protocols defining the specific conditions under which flash sterilisation is used in the health service. Documentation of flash sterilisation use should comply with AS4187.

A logbook that documents the reason and the type of equipment being processed using flash sterilisation should be used to monitor the frequency of use.

Performance indicator

The frequency of flash sterilisation is audited, and results reported to key stakeholders, and any variances are addressed.

Re-use

Reference question: 11

Rationale

Regardless of whether or not re-use occurs, health services should have a policy that clearly states the organisational position on re-use of items marked 'for single patient use' or 'single use'.

The re-use of single use medical devices is much more complex and subtle than the simple sterilisation of a previously used medical device. The actual and potential re-use of disposables has generated significant debate and little documented evidence on either side. Victoria is awaiting the final consensus recommendation on the re-use of medical devices labelled 'single patient use' from the Australian Health Ministers Advisory Committee.

Committee

Health services interested in examining re-use should establish a multidisciplinary committee to review and approve re-use protocols, and consider each device separately. The committee should have representatives from the following departments:

- Infection control.
- Administration.
- Risk management or health service legal counsel.
- Biomedical engineering.
- Materials management.
- Central sterile supply.
- Surgery.

The committee's responsibility should include:

- Examining hazards and other reusing effects of re-use (for instance, toxic residues, pyrogens, functional reliability, structural integrity, manufacturers instructions, and so on).
- Evaluating the feasibility of reusing a single-use device.
- Developing a reprocessing protocol.
- Examining cost justification.
- Testing and validating the protocol and processes (that is, cleaning and sterilisation).
- Implementing the process.

Policy and procedures

If re-use occurs in the health service, documented policies and procedures developed by the re-use committee must be in place for each of the specific items involved. Quality control procedures and checks must be in place for each specific item. An informed patient consent process should also be in place.

Performance indicator

Audits of policy compliance are conducted, and results fed back to key stakeholders, and variances are addressed.

Tracking system

Reference question: 7

Rationale

There have been a number of breaches involving instrument sterilisation and tracking in Australian health services. It is recommended that health services give consideration to establshing traceable and accurate in-hospital sterilisation records for individual items (used in the operating theatre) and packs to patients.

Policy and procedures

There should be a documented procedure for the tracking and recall of products after sterilisation or chemical disinfection process failure, or other infection control breaches.

An instrument tracking system should the following capabilities:

- Batch tracking
- Individual patient tracking
- Tracing.

Sterile stock storage, handling and transportation across the agency

Reference question: 9

Rationale

The proper handling and storage of externally received items in stores or sterile supply areas is essential to maintain the integrity of sterile stock and prevent contamination of clean, but non-sterile stock. This includes providing a storage area for sterile stock, in accordance with AS4187.

Policy and Procedures

There are written policies and procedures for the storage and handling and transportation of commercially obtained and health service manufactured stock that is consistent with AS4187. The policy should include:

- Temperature and humidity control.
- Cleaning schedule (that is, storage area and transportation equipment).
- Shelves 250 mm from floor and 440 mm from ceiling.
- Segregation of clean stock from sterile stock.
- No bulk cardboard boxes.
- Transport of sterile stock.
- Stock rotation.
- Stock packaging integrity checks.
- Hand washing and general hygiene.

Education

All staff working in stores or sterile supply, or involved in the handling, storage and transportation or use of sterile stock should be educated in correct procedures and infection control. This should be documented in staff members training records.

Performance indicator

Auditing of storage areas is completed annually, to ensure the physical condition of these areas. This includes air-conditioning and ventilation requirements, and stipulates work practices to minimise the possibility of contaminating and compromising the integrity of sterile and non-sterile stock as per AS4187.

Feedback of audit results is fed back to key stakeholders, and variances are addressed.

Glutaraldehyde

Reference question: 12

Rationale

Where practicable, the phasing out of glutaraldehyde use for high-level disinfection purposes (other than in a self-contained, closed system) be implemented by December 2001. The exceptions are:

- Trans-oesophageal endoscopes (TOEs).
- Ultrasound and foetal monitoring probes.
- Endoscopes that cannot withstand submersion or pressure gradients.

The use of alternative technologies and chemical disinfection agents, which can replace glutaraldehyde, should be investigated and implemented where practicable, in both open and closed systems.

Patient safety

Glutaraldehyde is a high-level disinfectant and, as such, must not be used for any medical instruments introduced into sterile tissue sites in accordance with AS4187–1998.

Protocols should be developed that:

- Eliminate the use of glutaraldehyde chemical disinfection processes for critical items.
- Minimise the use of glutaraldehyde chemical disinfection for semi-critical items.

Staff safety

All health services and hospitals must provide, and ensure the maintenance and use of, appropriate and adequate personal protective equipment for all staff working with chemical disinfectant agents.

All health services and hospitals must comply with the following:

- Occupational Health and Safety (Hazardous Substances) Regulations 1999.
- Department of Human Services Guidelines for the Use of Glutaraldehyde in the Health Industry.

Department of Human Services guidelines on safe use also recommend a hierarchal approach to controlling risks. The Victorian Occupational Health and Safety (Hazardous Substances) Regulations 1999 requires by law, that the hierarchy of controls be implemented as far as practicable (see Table 1). This essentially means that where there is a substitute lower risk chemical or system, this chemical or system is required, where practicable, to be implemented. WorkSafe has indicated that the availability of substitute chemicals and systems and their current use in hospitals provides indication of practicability.

Table 1 Occupational Health and Safety (Hazardous Substances) Regulations 1999æHierarchy of Controls

- Elimination.
- Substitution with less hazardous substances.
- Isolation or enclosure of the process.
- Application of engineering controls, including local exhaust ventilation, to contain or minimise exposure (see Appendix 2).
- Adoption of safe work practices that minimise exposure, including job rotation.

Glutaraldehyde (continued)

Reference question: 12

Policy and procedure	All health services and hospitals should establish formal policies and procedures for the use of, and access to, glutaraldehyde and all other chemical disinfection agents and alternative technologies by February 2002. Policies and procedures should be based on AS4187/GENSA, and current Department of Human Services guidelines should be in place in all areas that use these products. All health services and hospitals must meet infection control, engineering, occupational health and safety requirements, in order to ensure the safety of patients and staffæregardless of the technology or chemical disinfection agent in use by December 2001.
Risk management	A risk management plan should be developed to monitor the introduction of glutaraldehyde in the health service, and should consider: • Minimising and confining to designated procedure areas with adequate ventilation and exhaust systems or fume hoods. • Access to these areas should be restricted, and fume hoods should be periodically inspected. There is a worldwide and national trend towards phasing out the use of glutaraldehyde as a high level chemical disinfectant in an open-air system. • Identification and minimisation of open systems or glutaraldehyde.
Performance indicator	A risk assessment is performed annually of each area using glutaraldehyde to comply with the Hazardous Substance Regulations and Occupational Health and Safety requirements.

Monitoring, maintaining and calibration of sterilisers, disinfectors and cleaning equipment

Reference questions: 5 and 13

Rationale

There should be documented evidence that equipment used to decontaminate and sterilise is maintained and calibrated in compliance with AS4187.

Monitoring program

Equipment that should be monitored includes:

Sterilisation Equipment

- Low temperature plasma sterilisers.
- Downward displacement (jacketed) steam sterilisers.
- Pre-vacuum sterilisers.
- Dry heat sterilisers.
- Ethylene oxide sterilisers.

Decontamination and Thermal Disinfection Equipment

- Batch type and surgical equipment rack conveyor washers.
- Anaesthetic/respiratory washers disinfectors.
- Surgical equipment washers.
- Drying cabinets.
- Ultrasonic cleaners.
- Other chemical disinfection solutions/equipment.

Performance indicators

Records and logs are kept and maintained for equipment servicing, process monitoring by physical, chemical and biological indicators. Variances are reported to infection control and appropriate action taken (for example, recall).

Resource guide

AS/NZS 4187:2003, Standards Australia, Standards New Zealand: **Cleaning, Disinfecting and Sterilising Reusable Medical and Surgical Instruments and Equipment, and Maintenance of Associated Environments in Health Care**.

Australian and New Zealand Colleges of Anaesthetics, **Policy on Infection Control in Anaesthesia 1995**.

Australian Confederation of Operating Room Nurses Standards and Guidelines, May 1995.

AS/NZS4146:2000: Standards Australia, Standards New Zealand: **Laundry Practice**.

Victorian Department of Human Services, **Guidelines for the Use of Glutaraldehyde in the Health Industry**. Human Services Promotions Unit, Victoria, 1996.

Victorian Government, **Occupational Health and Safety Act 1985**, Act No 10190-1985.

Gastroenterological Society of Australia and Gastroenterological Nurses Society of Australia, 2000, **Infection Control in Endoscopy Guidelines** 2000, Sydney, NSW

AS/NZS4360:2001, Standards Australia, Standards New Zealand: **Risk Management**.

Royal Australasian College of Surgeons, Policy Document: **Infection Control in Surgery**, July 1998.

ECRI, 1997, **Re-use of Single Use Medical Devices: Making Informed Decisions**, published by ECRI, 5200 Butler Pike, Plymouth Meeting, PA, email: ecri@hslc.org.

Australian Health Minister's Advisory Council Working Party on Re-Use of Medical Devices Labelled as Single Use, April 2000, **Research Project Addressing Potential Infectious Diseases Related to Re-Use of Cardiac Electrophysiology Catheters: Part B**.

Section C: Surveillance activities

Aim: To have an effective program for surveillance of nosocomial infections, involving collection, analysis and feedback of data to departments in health services and to clinicians.

Surveillance plan

Reference question: 1

Surveillance Plan

The health service's Board and CEO are ultimately responsible for the delivery of effective infection control surveillance and prevention programs.

The new Victorian Nosocomial Infection Surveillance System (VICNISS) commenced in February 2002. The Centre will receive data and report on public hospital infection rates for hospitals with more than 100 beds. All health services (VICNISS participating and non-participating) are required to develop an institutional nosocomial infection surveillance program and objectives relevant to local circumstances and casemix.

The program is endorsed by the infection control committee and incorporated into the operational plan.

All hospitals should have clear objectives for undertaking nosocomial infection surveillance and defined linkages with internal quality and risk management structures. Objectives should be reviewed and updated frequently to meet new infection risks and changing patient populations.

Infection control practitioners and teams are consulted routinely to develop and provide expert guidance in selection of indicators, in the oversight of data collection, and in the analysis of indicators that are used for inter-hospital comparison in consultation with clinicians and other key stakeholders.

Collection, analysis and reporting back of data is integral to the surveillance program.

Data is fed back to those in the health service who will need to take any necessary action (that is, departments, clinicians, relevant committees' infection control, quality and risk management).

All health services should support strategies for surveillance and data collection (for example, IT supports, software, data transfer).

All hospitals should develop strategies for encouraging and supporting best practice in surveillance at the local level, including data management systems and systems of care.

Surveillance plan (continued)

Reference question: 1

Methods of surveillance

All nosocomial infection surveillance programs should be reviewed annually and clearly describe the methodology chosen, procedures to be surveyed, and agreed definitions. Agencies participating in VICNISS will be utilising NNIS/CDC definitions, targeting specific procedures and/or unit-specific surveillance. Non-participating VICNISS agencies may be guided by the examples provided below, and should be based on local circumstances and casemix.

Methods of surveillance:
- Laboratory-based surveillance.
- Ward-based/clinical rounds.
- Targeted surveillance.
- Health service-wide surveillance.
- Surveillance of significant organisms only.
- Other methods (please state).

Procedures surveyed:
- Surgical site surveillance.
- Procedure-specific surveillance.
- Unit-specific surveillance.
- Device-related surveillance.
- Bacteraemia-related surveillance.
- Some other method (please state).

Definitions:
- NNIS/CDC.
- Modified NISS/CDC.
- ACHS.
- Modified ACHS.
- In-house definitions.

Benchmarking

Reference question: 2

VICNISS, Hospital Acquired Infection Surveillance

With the inception of VICNISS, Hospital Acquired Infection Surveillance benchmarked data (for all hospitals with more than 100 beds) will be available within two years of the Centre's inception. This will provide reliable and meaningful information about Victorian hospital infection rates. It will commence in 10 hospitals in 2002, and data will be publicly available after three years of inception. This system will need time before it will be able to demonstrate whether or not it is effective, but the US system on which it is based has proven to be effective in reducing hospital acquired infections over a 10-year period. A surveillance system for smaller hospitals will be developed and piloted within two years of the Centre commencing.

All non-participating VICNISS Hospital Acquired Infection Surveillance health services are encouraged to explore opportunities for benchmarking and trending of dataæinternally and externally, where possibleæwhile ensuring cautious interpretation of data unless standardised methodology, risk adjustment and definitions are applied.

Resource guide

Garner, JS, 1988, Special Article, **'CDC Definitions for Nosocomial Infections'**, in *American Journal of Infection Control*, 16 (3): 128-140.

Horan, TC, et al 1992, **'CDC Definitions of Nosocomial Surgical Site Infections, 1992: A Modification of CDC Definitions of Surgical Wound Infections'**, in *American Journal of Infection Control*, 20 (5): 271–274.

Crowe, MJ, 1998, **'Review of Case Definitions for Nosocomial InfectionæTowards a Consensus'**, in *Journal of Hospital Infection*, 39: 3–11.

Emori TG, Culver DH, Horan TC et al, 1991 **'National Nosocomial Infections Surveillance System NNIS, Description of Surveillance Methods'**, in *American Journal of Infection Control*, 19 (1): 19–35.

Section D: Occupational health and safety, staff health, prevention and control

Aim: To have an effective staff infection control program that complies with Department of Human Services Immunisation Guidelines for Health Care Workers, and provides for the prevention and management of staff exposures.

Staff immunisation program

Reference questions: 1, 3, 4 and 5

Rationale	Working in a health service environment, health care workers are at specific risk of exposure to, and transmission of, vaccine-preventable infections. It is the responsibility of the health service to provide appropriate employer-sponsored screening, testing and vaccination programs. These programs should be available to all staff and volunteers.
Policy and procedures	Documented staff immunisation policies and procedures, based on the Department of Human Services Immunisation Guidelines for Health Care Workers and NHMRC Immunisation Guidelines. These policies and procedures should be developed in consultation with the infection control team.
Staffing	Provision or access to trained staff to administer vaccines: • Accredited immunisation nurse. • Accredited Mantoux tester. • BCG accredited doctor or nurse.
Program framework	Staff immunisation and screening program should include: • Immunisation (primary and booster), screening and testing that is available to all staff and volunteers. • Immunisation schedules that are tailored to individual staff member's risk of exposure to vaccine preventable diseases. These are based on Risk Categorisation Index outlined in NHMRC guidelines. • The health care worker is provided with a personal vaccination record, which documents vaccinations given, and any test results. • Documentation of informed consent or refusal by staff to take up offered vaccinations is maintained. • Health services should ensure that all academic agencies seeking clinical placement of students provide evidence that all students are immunised and screened in accordance with Department of Human Services guidelines. • Health services engaging agency staff should ensure that contracts with agency services captures the requirement for all agency staff to be immunised and screened in accordance with Department of Human Services guidelines. • Students, agency and external contract staff should provide evidence of vaccination status upon request.
Performance indicator	Cross-sectional surveys targeting all staff are conducted to ensure compliance with Department of Human Services guidelines. Staff immunisation and screening databases are operational and maintained.

Management of staff exposed to communicable diseases and bloodborne pathogens

Reference questions: 2, 6, 7 and 8

Rationale

Health care workers, particularly those with potential exposure to blood and body fluid substances, should have access to appropriate testing, counselling and vaccination programs consistent with the principles of informed consent in the event of an exposure.

Staffing

There should be provision or systems in place for follow-up, prophylaxis and counselling following exposure to HIV:

- Staff nurse or their equivalent with accredited counselling skills in HIV and hepatitis C.
- Provision for 24-hour service following exposure to HIV (that is, rapid serology testing, access to post-exposure prophylaxis, or PEP, access to experienced infectious diseases consultant).

Policy and Procedures

Written policy and procedures on the management of staff following exposure to bloodborne pathogens should be in place. These should be based on the Department of Human Services Guidelines for Procedures Involving Penetration of Skin, Mucous Membrane and/or other Tissue, NHMRC and ANCA guidelines.

Consideration should be given to written policy and procedures for the individual management of a staff member who has a bloodborne infection are in place.

Written policies and procedures for the management of health care workers and other staff members who are exposed to or have contracted a communicable disease are in place (for instance, measles, varicella, tuberculosis, meningococcus and pertussis).

Policy and procedures are implemented in consultation with the infection control team.

Performance indicators

A cross-sectional staff satisfaction survey could be performed for exposure management and immunisation service. Effectiveness of adherence to policies and procedures are evaluated.

Blood and body substance exposure rate can be monitored and analyses for intervention strategies.

Education

Reference question: 1

Rationale

To ensure adherence to policy and procedures, all staff should be educated on induction and on an annual basis on preventative measures and management following a blood or body fluid exposure.

Target education

Education programs should include:

- Sharps awareness.
- Use of safety equipment to prone needlestick injuries (for example, needleless systems, retractable needle systems, transportation and transfer of sharps).
- Post-exposure procedures.
- Standard and additional precautions.
- Isolation precautions.
- Immunisation.

Program resources

Reference questions: 4 and 6

Rationale

In May 2000, the Department provided one-off funding to all acute health services to assist in the development of infrastructure to support staff screening and vaccination.

Budget

It is the health service's responsibility to provide funding to support a staff health program, including staffing, vaccinations, resources (consumables, computer and database).

Computer database

Implementation and maintenance of a database register that is:

- Able to record details of staff vaccine preventable disease history, vaccinations, antibody and test results, record of vaccines consented/refused, batch number and brand name of vaccine.
- Secure and accessible by authorised personnel when needed (24 hours a day, seven days a week).
- Updated when new events (vaccine, test, disease) occur.
- Maintained by a designated staff member.
- Designed with the capacity to issue reports on immune status (that is, for individuals and by department/unit in the event of an exposure).
- Able to link with human resource systems to ensure current demographics (that is, change of name, address, ward/department, employment status, for example, long service leave) of staff is accessible to allow timely contact in the event of an outbreak or exposure.

Performance indicator

Reports and analyses of needlestick injuries and blood and body fluid exposures to key stakeholders (OHS, clinical groups) and to the Epinet system are made on an annual basis. Intervention opportunities are reviewed annually. Ability is benchmarked with other hospitals.

Resource guide

Vaccination record forms can be obtained from Department of Human Services Immunisation Program.

AS/NZS4360:1999, Standards Australia, Standards New Zealand: **Risk Management**.

Victorian Department of Human Services, 2000, **Immunisation Guidelines for Health Care Workers**, second edition available at: www.dhs.vic.gov.au/phd/9907018/index.htm

Victorian Department of Human Services, **Guidelines for the Control of Infectious Diseases: The Blue Book**, 1996, available at: www.dhs.vic.gov.au/phd/hprot/inf_dis/bluebook/index.htm -

Commonwealth Department of Health and Aged Care, 2000 Technical report series: **Guidelines for the control of measles outbreaks in Australia**, Publications Production Unit, Canberra.

Commonwealth Department of Health and Aged Care, 1999 Technical report series: **A Framework for an Australian Influenza Pandemic Plan**, Publications Production Unit, Canberra.

Victorian Department of Human Services, Public Health Division, 2002, **Guidelines for Health Care Providers, Management, Control and Prevention of Tuberculosis**, available at: http://www.dhs.vic.gov.au/phd/hprot/tb/tbm/tbindex.html

Section E: Education and training

Aim: To have policies and effective procedures for induction, and ongoing education of relevant staff, in appropriate infection control practices.

Clinical governance

Reference question: 3

Rationale	To encourage the ownership of infection control and prevention as the responsibility of all who work in the health service or hospital.
Job description	Knowledge of infection control should be included in all position descriptions, employment contracts and staff appraisals.

Education program in health services

Reference questions: 1 and 2

Rationale	To support health care workers in meeting their infection control responsibilities, an education program promoting infection control and prevention should be established. Training techniques need to be applicable to adult learning styles, which will stimulate behaviour change.
Induction program	There should be a general infection control induction program that addresses topics of relevance to different types of health care staff and includes: • Medical staff • Nursing staff • Allied health staff • Volunteers • Subcontracted personnel • Students • Hotel services staff • Engineering. Attendance at the induction program should be compulsory, and there should be a system in place to monitor attendance.
Targeted education	There should be a plan for continued education programs in infection control for all health service personnel, which is tailored to meet the requirements of a wide range of educational backgrounds and work responsibilities. Topics that should be covered include:
Resources	• Personnel protective equipment. • Standard and additional precautions. • Isolation precautions. • Staff health. • Sharps management. • Aseptic practices. • Waste management and segregation. • Health service policy and procedures reinforcement. • Infectious diseases in the health care setting. • Cleaning, disinfection and sterilisation. • Sterile stock management.

Education program in health services (continued)

Reference questions: 1 and 2

Other education programs

Targeted ongoing education programs should be developed and delivered in identified high risk areas such (that is, CSSD, ICU/NICU/PICU, emergency department, paediatric units, operating theatres, endoscopy and isolation wards/areas).

The education program and activities should be adequately resourced (that is, videos, overheads, computer technology, access to technical information).

Infection control staff should be active participants in the planning and implementation of staff education programs organised by other departments.

Evaluation

Reference questions: 1 and 2

Rationale

Educational programs should be evaluated periodically for effectiveness.

Performance indicator

Evaluation of learning outcomes for each program is reviewed after each session.

There is a process in place where the infection control and prevention components of education programs are reviewed and modified, at least annually.

Resource guide

Victorian Department of Human Services, 2000, **Guidelines for Infection Control Strategic Management Plan**, available at: www.dhs.vic.gov.au/ahs/ic/index.htm

Scheckler W, Brimhall D, Buck A et al, 1998, **'Requirements for Infrastructure and Essential Activities of Infection Control and Epidemiology in Hospitals: A Consensus Panel Report'**, in *American Journal of Infection Control*, 26 (1): 47–60.

Horan-Murphy E, Barnard B, Chenoweth C et al, 1999, **'APIC/CHICA Canadian infection Control and Epidemiology: Professional and Practice Standards'**, in *American Journal of Infection Control*, 27 (1): 47–51.

Section F: Infection control factors in the physical environment

Aim: To have effective facility-wide maintenance, monitoring and documentation programs for health service equipment and facilities as they relate to infection control risk.

Engineering department

Reference questions: 1, 2, 3 and 7

Management	The engineering manager (or their equivalent) has appropriate qualifications and experience in health care maintenance.
Responsibilities	The engineering manager (or their equivalent) has responsibility for the maintenance and monitoring program for all of the health care agencies equipment and systems.
Communication	Clear communication paths are defined between engineering, building departments and infection control.
Risk assessments	Feedback to the infection control team is given on physical environment monitoring outcomes and variance reporting, such as: • Legionella results isolated from the cooling and warm water systems. • Plant failures in the operating room and CSSD. • Isolation room air exchanges and pressure gradient monitoring. • High colony counts in water tanks, reverse osmosis water, hydrotherapy pools. A representative from the engineering department is on the infection control committee (or coopted as necessary). Priorities are placed on infection control breakdown maintenance requests and variance reporting.
Contracts	There are appropriate infection control clauses in all external engineering service contracts.

Maintenance and monitoring programs

Reference questions: 1, 4, 6 and 12

Rationale	To prevent environmental reservoirs for infection.
Policy and procedures maintenance	There is a documented planned maintenance schedule in place for all of the agencies equipment and systems, including: • Pans sanitisers. • Utensil washers. • Dishwashers. • Renal unit equipment and environs. • HEPA filters and other air handling systems. • Sterilisers/instrument washers/dryers/ultrasonic washers. • Water filtration systems. • Cooling and warm water systems.
Equipment cleaning	Procedures and responsibility for decontaminating and disinfecting patient care equipment before being worked on or put back into service is clearly defined.
Program monitoring	There are documented procedures for the monitoring of equipment and systems, which includes inspections, written protocols/logs for all work undertaken and ongoing education is provided. Examples of areas where monitoring is important are: • Air change rates in OR, CSSD. • Air pressures monitored in isolation rooms (class N/P).
Contracts	Infection control clauses are written into external contracts, where applicable.
Performance indicator	Monitoring programs, monthly variance and action report is tabled to the Infection Control Committee at least annually.

Construction

Reference questions: 7 and 13

Rationale

Prevent health service-acquired infections that are associated with construction activity.

Risk assessment

Infection control risk assessment is undertaken prior to and during building phase to prevent construction associated contaminates or infections (for example, aspergillosis and environmental spores).

Expert input on infection control should also be actively sought in the planning and design and redevelopment of existing and new health services, to ensure an assessment of the types of isolation requirements, ventilation and availability/accessibility of hand washing facilities are met and provided for the particular patient population.

Policy and procedures

This is reflected in the Department of Human Services Health Service Benchmark Brief, which requires all facilities submitting proposals for redesign, redevelopment or structural maintenance to have undertaken and infection control risk assessment.

- Risk assessment of patient population during building/demolition/refurbishment, and action required to prevent environmental contamination.
- Ensuring appropriate isolation facilities are available.
- Types of surfaces selected.
- Layout of departments to support good infection control practices
- Provision of hand washing facilities (number and location of hand basins in patient care areas such as wards and podiatry departments).
- Heating, ventilation and air-conditioning systems.
- Accommodation for personal protection equipment.
- Sharps disposal unit placement.
- Utility rooms, soiled, clean, instrument processing, holding, workrooms.

Written policies and procedures for the implementation for health service construction should include:

- Authority and communication lines to determine if or how patient unit closure will occur.
- Planning for air handling and water systems/plumbing, as appropriate.
- Expectations for contractor accountability in the event of breaches in infection control practices and related written agreements.
- Traffic patterns for patients, health care workers and visitors.
- Transport and approval for disposal of waste materials.
- Emergency preparedness plans for major utility failures with infection control implications, including location and responsibilities.
- Patient area risk assessment; criteria for emergency work interruptions (stop and start processes).
- Identified educators and learners.
- Cleaning schedules for during and after the construction.
- Appropriate barriers, including air systems, are erected to contain dust.

Construction (continued)

Reference questions: 7 and 13

Contracts

- External contractors have an infection control clause in their contract.
- Environmental screening (if indicated) that is, after work on theatre air handling systems.

Contracts pertaining to new works contain infection control-related clauses.

Isolation rooms

Reference questions: 5 and 6

Rationale

An assessment is undertaken of isolation requirements and capacity, which considers patient demographics, casemix and clinical risk. This will form the basis for future planning for single room requirement.

Policy and procedures

Isolation facilities reflect Department of Human Services guidelines. The type, number and placement of isolation rooms are recognised as important infection control issues, given the emergence of different antibiotic resistant organisms.

Policy and procedures in relation to use of isolation rooms includes procedure for variance to air pressure (that is, the response plan).

Food safety plan

Reference questions: 9

Rationale

To have policies, procedures and a food safety plan in place to prevent food-borne illness.

Policy and procedures Food safety plan

Catering performed on site should have a food and safety program in place, based on the legislative requirements of the *Victorian Food Act 1984*. The Food Act states that a Food Safety Program must be a written document that:

- Systematically identifies the potential hazards.
- Identifies how each hazard is controlled.
- Provides for the supervision and monitoring of controls.
- Specifies how hazards found not to be under control are to be brought under control.
- Provides for the keeping of records to facilitate the audit of the Food Safety Program.
- Specifies how all staff are to be trained in food hygiene matters.
- Provides appropriate arrangements for the recall of food that may be unfit for human consumption.

Contracts

Contracts should contain appropriate infection control clauses, and include processes for monitoring and reporting of variances.

Performance indicator

Established Food Safety Programs need to be reviewed/audited at least once per year.

The infection control team and committee receive copies of these activities. Infection control should be notified in 24 hours of any food recall procedure in the event of isolating a significant pathogen.

Waste management

Reference question: 10

Rationale

To ensure the correct handling and transportation of waste to minimise the risk of acquiring a health service acquired infection.

Policy and procedures

There should be written policies and procedures based on guidelines, legislation and regulations on the principal elements of a waste management strategy, including:

- Waste minimisation.
- Segregation.
- Assessment.
- Labelling and packaging.
- Handling.
- Transport.
- Treatment.
- Disposal.

Contracts

Contracts pertaining to waste management contain infection control clauses.

Sharps management

Reference question: 8

Rationale	To ensure the correct handling and transportation of sharps to minimise the risk of acquiring a health service-acquired infection.
Policy and procedures	There should be written policies and procedures based on guidelines, legislation and regulations on the standard operating procedures for the safe handling and disposal of sharps.
Education	Health care workers should be fully trained in recommended handling and disposal techniques.
Contracts	Contracts pertaining to sharps waste contain infection should contain control clauses.

Linen management

Reference question: 11

Rationale	To reduce the risk of patients and health care staff acquiring an infection from soiled linen, by incorrect handling, transportation and storage.
Policy and procedure	There should be written policies and procedures that cover linen storage, handling and transportation. These policies and procedures should include the recommended practices for the sorting, transporting and storage of clean and dirty linen, as well as washing and disinfecting procedures. They also recommend appropriate protective apparel that should be worn by health care workers and laundry staff.
Contracts	Contracts pertaining to linen services should contain infection control-related clauses in accordance with AS4146. Laundry service supplied on site must also be in accordance with AS4186.

Legionella

Reference question: 4

Risk management plan	There is a Risk Management Plan for monitoring the warm water and cooling systems in accordance with Health (Legionella) Regulations and Hospital Guidelines, 2001. The infection control committee or equivalent should have been consulted in the development in the risk management plan.
Contracts	Contracts pertaining to warm water and cooling systems should contain infection control related clauses and a clear communication plan for reporting variances in test results.
Performance indicator	There are formal links for reporting results to the infection control team and infection control committee.

Resource guide

AS1386:1989, Standards Australia: **Cleanrooms and Clean Workstations**

National Health and Medical Research Council, 1996, **Infection Control in the Health Care Setting: Guidelines for the prevention of transmission of infectious diseases**.

AS/NZS 4146:1994 Standards Australia, Standards New Zealand: **Laundry Practice.**

AS/NZS 3816:1998 Standards Australia, Standards New Zealand: **Management of Clinical and Related Wastes**.

Environmental Protection Authority (EPA), 1993, **Manual for the Management and Disposal of Biomedical Wastes in Victoria**, second edition.

Victorian Department of Human Services, 1999, **Food Safety Victoria. Guidelines for Safe Food Preparation in Health Care Facilities**.

AS/NZ1730:1996, Standards Australia, Standards New Zealand: **Washbasins**.

Victorian Department of Human Services, Standing Committee on Infection Control, 2000, **Guidelines for the Classification and Design of Isolation Rooms in Health Care Facilities.**

Victorian Department of Human Services, 1999, Standing Committee on Infection Control, **Guidelines for the Management of Patients with Vancomycin Resistant Enterococci (VRE) Colonisation/Infection**.

Victorian Department of Human Services, 1999, **Guidelines for the control of Legionnaire's Disease,** available at: http://www.dhs.vic.gov.au/phd/9903047/index.htm

Victorian Department of Department of Human Services, 1996. **Capitol works guidelines; 6.3 Air-conditioning in health care buildings**, available at: http://infectioncontrol.health.vic.gov.au/ic/acon.

Bartley, JM, 2000, **'APIC State of the Art Report: The role of infection control during construction in health care facilities'**, in *American Journal of Infection Control*, 28 (2): 156–169.

Section G: Prevention of the emergence and zpread of antibiotic desistant microorganisms

Aim: To have a facility-wide program in place for prevention and control of antibiotic resistant microorganisms, such as appropriate antibiotic use, and measures to promote hand washing.

Rationalise and optimise the use of antibiotics

Reference questions: 1, 2, 3, 4 and 5

Rationale	The use and overuse of antibiotics in human medicine is recognised as a major factor contributing to the development of antibiotic resistance. Health service strategies should target prevention, rather than relying on new antibiotics.
Committee	A multidisciplinary committee should oversee the development, monitoring and review of antibiotic policies, procedures and prescribing practices. Membership should include: • Pharmacist. • Infectious disease physician and/or clinical microbiologist. • Medical representatives. • Microbiologist. • Infection control practitioner.
Policy and procedures	Policies and procedures are reviewed every two years by the committee. Written policy and procedures should address known effective interventions: • Cost and appropriateness. • Therapeutic Guidelines. • Processes for the introduction of newly released antibiotics. • Broad spectrum antibiotic restriction such as cephalosporins. • Laboratory antibiotic sensitivity reporting restrictions. • Monitoring and surveillance. • Infection prevention strategies. • Education. • Research. • Antibiotic prophylaxis for surgical procedures. To monitor compliance an auditing program should be developed and overseen by the multidisciplinary committee.
Performance indicator	Feedback of audit results of antimicrobial use, policy compliance and surveillance trends (that is, existence of resistance, amount of resistance, and so on) should be to key stakeholders, and include: • Infection control team/committee. • Anaesthetists. • Surgeons/physicians/registrars/HMOs/interns. • Nursing director. • Director of medical services. • Operating suite manager. • Intensivists. • Pharmacists.

Detect, report and prevent transmission of antibiotic resistant organisms

Reference questions: 5, 6, 7, 8 and 9

Rationale

Failure to apply basic and consistent infection control practices and procedures has been a leading factor in the increasing prevalence of multi-drug-resistant organisms.

The rationale is to have written surveillance policies and procedures on the detection, prevention and control of multi-antibiotic-resistant microorganisms, which should include:

- A strategy for the internal notification, communication process/responsibilities.
- A screening program that is appropriate for the patient population and casemix.
- Isolation/cohort of patients with multi-antibiotic-resistant microorganisms.
- A process regarding identifying, transferring, discharging and readmitting patients with specific antibiotic-resistant pathogens.

Policy and Procedures Resources

Policies and procedures are supported by:

- The executive management.
- Infectious diseases service for on-call advice regarding the provision of antibiotics (metropolitan health services only).
- Laboratory services providing information in a timely fashion on multi-antibiotic-resistant microorganisms to the infection control/infectious disease service, to enable control mechanisms to be initiated.
- Ensuring the availability of the Therapeutic Guidelines to all prescriber and local antibiotic policies.

Performance indicator

To have a surveillance system in place to recognise and report trends in anti-microbial resistance and the effectiveness of interventions in the health service.

Communication

Reference questions: 4 and 5

Rationale program

Feedback on prescribing practices is a known effective intervention in changing prescribing behaviours.

The rationale is to provide feedback to key stakeholders and use the results to improve prescribing practices, modifying policies and restriction processes.

Resource guide

Commonwealth of Australia, The Joint Expert Technical Advisory Committee on Antibiotic Resistance (JETACAR), 1999, **The use of antibiotics in food-producing animals: antibiotic-resistant bacteria on animals and humans**.

Shlaes, DM, Gerding DN, John JF, et al, 1997, **'Society for Health Care Epidemiology or America and Infectious Diseases Society of America Joint Committee on the Prevention of Antimicrobial Resistance: Guidelines for the Prevention of Antimicrobial Resistance in Health Services'**, in *Clinical Infectious Diseases*, 25 : 584–599.

Victorian Department of Human Services, Standing Committee on Infection Control, **Guidelines for the Management of Patients with Vancomycin-Resistant Enterococci (VRE) Colonisation/Infection**, available at: http://www.dhs.vic.gov.au/phd/9904005/index.htm

Victorian Department of Human Services, 1999, **Management, Control and Prevention of Tuberculosis Guidelines for Health Care Providers**, available at: http://www.dhs.vic.gov.au/phd/tb

Victorian Department of Human Services, 2000, **Guidelines for the Classification and Design of Isolation Rooms in Health Care Facilities**, available at: http://www.dhs.vic.gov.au/phd/9906058a/index.htm

National Health and Medical Research Council, 1995, **Creutzfeldt-Jakob Disease And Other Human Transmissible Spongiform Encephalopathies; Guidelines on Patient Management and Infection Control.** Australian Government Publishing Service.

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