

**A national stakeholder review of  
Australian infection control programs:  
the scope of practice of the infection control  
professional**

**Final draft report**

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## Executive Summary

Infection prevention and control is an integral part of all health care, for the quality of patient care and for the protection of staff, patients and visitors, from communicable diseases. Infection prevention and control (IC) programs have been shown to effectively reduce infection rates, and the infection control professional (ICP) is a key component to the success of implementing the IC program.<sup>1</sup>

This national stakeholder review describes Australian hospital IC programs and models of care in relation to: the corporate and clinical governance structures, policies and procedures, reporting mechanisms, staffing and resources, dimensions and scope of practice of the infection control professional (ICP), and relationships with government and other external agencies. A number of recommendations based on the findings of this review have also been made.

### Summary of key findings

#### *Governance*

- Strategic governance of IC programs is not consistent between or within the jurisdictions, and tends to vary depending on the hospital size.
- The support from the hospital executive is one of the key elements to a successful IC program, and limited executive support is seen as a weakness of an IC program.
- Hospital executive support includes resourcing of IC programs. However, a number of IC program staff identified resource allocation to their programs as being deficient.

#### *IC program team*

- Inadequate infection control staffing levels and resources, including laboratory resources, is perceived as a major barrier to IC programs.
- IC programs utilise numerous strategies to engage hospital staff in infection prevention and control. Lack of clinician buy-in was reported as a major barrier to successful IC programs.
- There is limited research being conducted by IC programs. Adequate resources to support and facilitate research in infection control are needed.
- A number of data management issues were raised including duplication of data, and data entry tools not being as user friendly or practical to use as they could be.

#### *ICP scope of practice*

- The scope of practice of the ICP has evolved in response to shifting models of health care and emerging infectious disease challenges. ICPs are involved in core activities including health care associated infections (HAI) surveillance, staff

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education, policy and procedure development, outbreak management and consultation.

- ICPs in both the public and private hospital sector may be involved in additional tasks and activities such as staff immunisation and product purchasing. The number and type of tasks varies and, apart from liaising with community services, does not seem to be dependent on the location or size of the hospital.
- Based on shifting models of care from acute to community based health care, there is an increasing need for the ICP scope of practice to recognise community based practice. It will require preparation both educationally and professionally to pursue the management of infection across the hospital-community interface.

### *Education and training of the ICP*

- A range of education programs in academic institutions are currently available for nurses seeking or establishing a career in infection control in Australia.
- The content of educational programs available to the ICP is variable because there are no Australian infection control standards of practice available to guide course or professional development.

### *Role of government*

- The role of the jurisdictional governments in infection control is similar across the states and territories. However there are small differences in their governance structures and services they facilitate.
- Regulation is the only role of the state governments within the private hospital sector.
- There is no consistency of what is reported to each of the jurisdictional governments. There are currently no infection control indicators reported at a national level.

## **Recommendations**

### *Governance*

- Clinical governance should reside at all levels of a hospital and the hospital should ensure commitment to IC through active executive participation and sponsorship.
- The clinical governance framework for IC programs should consider governance, including responsibility and accountability from the point of care up to the hospital executive, (and the Board) and to jurisdictional and national government bodies.
- The clinical governance structure of the IC program should consider all relevant stakeholders, in particular; pathology services, expert clinical groups, community partners and consumers.

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- An IC committee should have a clear mandate for its activities which are explicitly outlined in terms of reference and are supported within an effective governance structure.
- There needs to be a review of clinical governance to support greater adherence of individual clinicians to IC policies and procedures. This should consider components of the clinical governance framework, including credentialing, support strategies, performance assessment, monitoring as well as remedial response processes.

### *Infection control program components*

- The model of IC program should be informed by the size and complexity of the healthcare organisation and its community partners, and assessed needs and priorities.
- IC programs require a risk management plan that includes management of infection outbreaks.
- An IC program requires a funding model that supports the specified program activity domains and resources necessary to implement and sustain these activities.
- Hospitals should support IC programs with staff dedicated to infection control and adequate access to expertise in infectious diseases, microbiology and pathology services and epidemiological methods.
- Hospitals should provide structural resources to support the ICP including effective data collection, analysis and reporting systems.

### *ICP scope of practice*

- The scope of practice of the ICP should be outlined within a job description that includes the common and required elements of HAI surveillance, outbreak management, education, IC policy and procedure development and consultancy; and is flexible to meet the needs and priorities of the hospital.

### *Education and training of the ICP*

- The scope of practice of the ICP should reflect the education and training of the ICP in relation to expected roles and responsibilities.
- It is recommended that there be a national approach to developing curricula for infection control post graduate courses.

## Background and Introduction

Healthcare associated infections (HAI) are common and can be serious, with an estimated incidence of around 10% of all hospital admissions.<sup>2</sup> The impact of HAI is significant with increased morbidity and mortality, and increased health care utilisation often resulting.

The HAI program has been recognised by the Australian Commission on Safety and Quality in Health Care (ACSQHC) as one of its priority programs. The aim of the HAI program is to develop a national approach to HAI including strategies for ensuring practices are sustained and the development of an agreed national plan for HAI prevention and control. This national stakeholder review is part of the HAI program, and may be used in conjunction with the recently conducted literature review to inform the development of educational resources and toolkits to enable ICPs and hospitals to implement effective IC programs. It may also be used to further inform national and international quality improvement and research work in infection control.

The aim of this national review of hospital infection prevention and control (IC) programs and models of care is to assess:

- Governance and leadership
- Structural components of the IC program
  - Reporting mechanisms
  - Policies and procedures
- The role of the infection control team including the ICP (ICP) and IC coordinator
  - Scope of practice of the ICP
  - Mentoring support programs for the ICP
  - Education and training programs for the ICP
- The role of hospital executive and management in infection control
- The role of government in infection control
- Strengths/enablers and weaknesses/limitations of the IC programs
- Similarities and differences across Australian metropolitan, regional and rural hospitals; and the public and private hospital sector.

Jurisdictional governments have corporate responsibility to ensure their hospitals achieve established minimum standards of practice and meet all legislative requirements in relation to infection control. Clinical governance is a framework, consistent with corporate strategic directions, defined as “a systematic and integrated approach to assurance and review of clinical responsibility and accountability that improves quality and safety resulting in optimal patients outcomes” (Western Australia Health Department).

Infection prevention and control programs are made up of structural components which are embedded within a corporate and clinical governance framework. This report describes the IC program governance structures that occur both internally and externally to the organisation, including the roles, responsibilities and relationships of these components. See Figure 1.

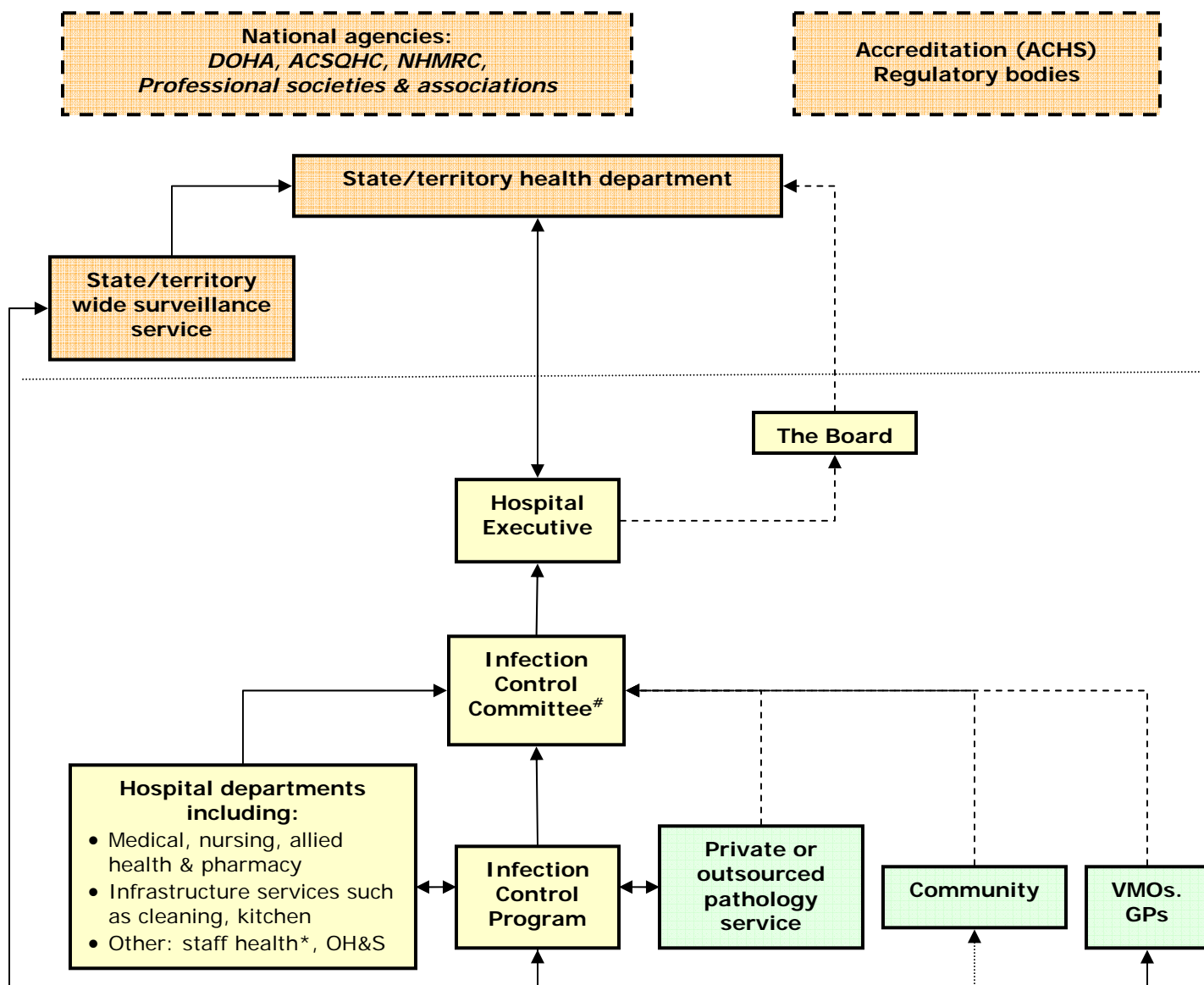
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This report describes hospital IC programs in relation to the following:

- Governance
  - Hospital executive
  - IC program where it sits
  - IC management systems (IC committee)
  - Policies and procedures
- IC program components
  - Staffing
  - ICP scope of practice
- Support services and resources
  - People and expertise
  - Structural resources
  - Education and training
  - Mentoring and ICP networks
- Relationships
  - Other internal relationships - hospital staff
  - Jurisdiction government
  - Other external agencies and community

### **Caveat**

This review involved key informant interviews with 37 participants representing various levels of the public and private hospital sectors. This stakeholder review did not include hospitals which do not have an IC program in place. The findings and recommendations have been structured to present issues likely to be generalisable to other Australian hospital settings, but implementation would need to consider contextual issues with more detail. It should therefore be read with caution and not as a representation of all Australian public and private hospitals.



**Figure 1 – Hospital infection control program governance structures, internal and external relationships**

# Or alternative system of management

\* Staff health may be part of the IC program

## Methods

A systematic approach was undertaken, consisting of several distinct stages including the following activities:

- Collaborative work with the expert advisory group (EAG)
  - ⇒ Finalised the constitution of the EAG consisting of individuals with clinical care and research expertise in health care associated infection control
  - ⇒ Scoped the work plan: delineate project activities in detail including survey design and development, identifying key stakeholders, and finalise the expert advisory group consultation process
  - ⇒ Identified key stakeholders
  - ⇒ Developed structured interview templates
- Conducted the key informant interviews (KII)
- Analysis of KII findings
  - ⇒ Summarise key points and issues
  - ⇒ Developed recommendations

### Expert Advisory Group (EAG)

The Clinical Epidemiology and Health Service Evaluation Unit (CEHSEU) project team worked in collaboration with a multidisciplinary EAG throughout the duration of the project. The EAG consisted of 8 members with clinical and research expertise in infection control, prevention, infectious diseases, epidemiology and microbiology. The metropolitan, regional and remote hospital sector was also represented on the EAG. *Details of CEHSEU project team and EAG membership provided in Appendix 1.*

As part of the project, 3 EAG meetings were held and regular email correspondence between the project team and the EAG took place.

### Identify key stakeholders

Stakeholders to participate in the KII were identified by the CEHSEU project team in collaboration with the EAG and the ACSQHC HAI Implementation Advisory Committee.

We aimed to have approximately 30 key stakeholders participate in the KII, with representation from all Australian jurisdictions. Potential participants included representatives from:

- Jurisdictional health departments
- Hospital executives
- Management/directors of infection control services
- Infection control coordinators
- ICPs
- Peak bodies

From metropolitan,  
regional and rural hospitals

The sample was a purposeful selection of hospitals with the aim of representing at least one metropolitan and regional or rural public hospital from each jurisdiction. The sample was also one of convenience due to the timelines of the project. We utilised our EAG and the state and territory health department representatives to direct us to hospital IC programs. For private hospitals we contacted the Australian Private Hospitals Association (APHA) and contacted private infection control consultants that were recommended by the expert advisory group (EAG) or the ACSQHC HAI implementation Advisory Committee.

### **Develop templates for KII**

A peer reviewed literature search and web based search of peak international infection control groups was conducted to identify whether a questionnaire(s) exists that could be utilised or modified for the purposes of this project. We were unable to identify a questionnaire that fulfilled the review objectives, and therefore developed three interview templates which varied depending on the target group:

- Jurisdictional government health department level
- Facility level – executive and management role
- Facility level – ICP and coordinator role

Each interview template consisted of questions relating to the following domains:

- Corporate and clinical governance, leadership and culture
- Policies and procedures
- Information management and reporting
- ICP scope of practice

Questions pertaining to the strengths and weaknesses (barriers and enablers) of IC programs for each of the above domains; and whether a formal evaluation had been conducted were also included in the review. *See Appendix 2 for details.*

### **Conduct the KII**

Emails were sent to potential participants along with a letter of invitation which outlined the objectives of the KII. Follow up emails and phone calls were made to those who did not respond. Appointments for interview were made with those who accepted the invitation to participate. Where potential participants were unavailable or declined the invitation for interview, they were asked to recommend a colleague. An excel spreadsheet was used to track communications with potential KII participants.

Key informant interviews were conducted either face to face or by telephone by experienced CEHSEU staff. These methods were selected rather than paper/electronic based survey methods due to the short response time.

All interviewees were sent an outline of the questions for the interview prior to the KII. KII were recorded, and transcribed. Summaries of interviews were sent back to participants for ratification.

**Analyse findings from KII**

Notes from the KII and recording transcribes were analysed. Findings were then summarised, and presented to the EAG for review and feedback. Recommendations were developed in collaboration with the EAG.

**Education programs for ICPs**

To identify educational programs in infection control we contacted nursing boards in each state & territory, searched Australian university websites, and asked all ICPs involved in the key informant interviews.

Nursing boards from all states and territories replied that they only have information on course providers and content where the course leads to initial registration as a Division 1 or 2 Registered Nurse.

## Results

### 1. Infection control program governance

Clinical governance refers to the framework through which hospitals are accountable for ensuring that rigorous systems are established so health care safety and quality is monitored and supported, evaluated and continuously improved.<sup>3</sup>

There was general consensus that the clinical governance framework for IC programs should have policies and procedures, defined job descriptions for IC program staff, supports required for the role, and well defined communication strategies with clear lines of reporting and feedback. It should integrate with other organisational frameworks such as the quality and safety framework and the occupational health and safety framework.

This stakeholder review explored governance within each hospital as well as the governance structures up to the state and territory level health departments. This section will discuss the governance structures of the IC program within a hospital – to where IC programs report and through whom.

This review found that strategic governance of hospital IC programs varies, and this variation tends to be related to the size of the hospital.

- Larger organisations which have a clinical director of the IC program tend to be accountable to an executive sponsor such as the Director of Clinical Governance, General Manager, Executive Director Division of Medicine or Quality and Safety.
- In all other hospitals, the IC coordinator tends to report directly to nursing executive.

This review found the strategic governance of infection control was inconsistent between and within the jurisdictions. This was raised as an issue:

*“Have asked NSW Health to define where IC should sit in an area health service (AHS) eg should IC be under clinical governance or pathology. This differs depending on the AHS...need standardisation desperately across the state.”*

Operational management of IC programs also differs. It can be an executive nursing position; or the clinical director of ID, microbiology, or pathology. Some generalisations were found based on the size of the hospital and on the services available:

- In larger public hospitals, IC programs tend to sit operationally under the pathology unit and/or infectious diseases unit.
- ICPs tend to be nurses and therefore also have professional nursing reporting lines to an executive of nursing.
- Regional and rural hospitals and private hospitals tend to be managed by the Director of Nursing (DON, part of executive) who is also the key senior support to the ICP.

### **Summary**

- Strategic governance of IC programs is not consistent between or within the jurisdictions, and tends to vary depending on the hospital size.
- IC programs in most large public hospitals report to the executive director of clinical governance, division of medicine, quality and safety or the general manager. In other hospitals (public and private) they tend to report to the nursing executive.
- IC programs in large public hospitals tend to be operationally managed by pathology, microbiology or infectious diseases departments.
- In other public hospitals and private hospitals, IC programs tend to be operationally managed by a nursing or medical executive.

## **2. Hospital executive**

One of the essential elements for the management of an IC program is the support of the hospital executive.<sup>4</sup> The recent UK review into organisation and management factors on infection control in hospitals reported “Organisational mechanisms for supporting training, appraisal and clinical governance are significant determinants of effective practice and successful change...and that more attention must be paid to the environmental, behavioural and organisational contexts in which care is delivered. Recent enquiries into infection outbreaks in England have highlighted failures of management and leadership at all levels in relation to infection control...but wider aspects of organisation and management of care have not been widely considered.”

Those executives interviewed perceived their role as the following:

- Sponsorship and resourcing
- Taking a broader organisational perspective whilst being aware of statewide and community issues
- Key governance role
- Provide knowledge (not IC expertise)
- Deal with external aspects of IC eg patient complaints, media, health department
- Chair IC committee

Executive directors of nursing in smaller (regional/rural) facilities reported additional roles including:

- Support IC committee internally, seek advice
- Provide feedback from regional executive groups
- Ensure appropriate policies and procedures are in place to provide structure for the IC committee

The interviews with IC staff revealed that executive support is seen to be a key factor in not only receiving adequate funding and resources, but for successful implementation of infection control and buy-in within the organisation.

*“Rapid response within executive to mobilise resources, close wards etc if there is an outbreak”*

*"Current area executive is very supportive of patient safety issues (strength of the program)."*

*"IC programs do well if they have good executive support."*

*"Strongly committed CEO who actively supports the IC program. Works well because the CEO has a personal commitment."*

*"We have executive support all along; they listen to us (strength of the program)."*

*"Good executive support. (I can) talk to executive at any time, all sites, open door policy."*

*"(Strength of the program) close relationship with clinical governance."*

A number of those interviewed raised concerns regarding the lack of executive support for the program.

*"A number of recommendations (were) forwarded to the chief executive who (in response) has given limited support to increasing staffing"*

*"Greater executive support is needed – expected to do more and more with little resources. Tend to focus IC resources on outbreak management and surveillance which means education of staff misses out."*

*"(Weakness of the program) limited executive support."*

*"Difficult to have influence on executive re resourcing...see data as performance measures"*

*"Executive don't support in terms of (enough) resources, allow us to do what we can."*

*"Where there are barriers with senior medical clinicians, (ICPs) not empowered or supported by hospital executive to deal with non compliance or issues arising."*

### **Summary**

- The support from the hospital executive is one of the key elements to a successful IC program.
- Limited executive support is seen as a weakness of an IC program.
- Hospital executive support includes resourcing of IC programs. However, a number of IC program staff identified resource allocation to their programs as being deficient.

### 3. Infection control management (IC committee)

This stakeholder review found that almost all IC programs report to an IC committee. Where IC committees were not in place, an alternative system of management was utilised. The IC committee or system of management serves to undertake various governance functions.

#### **Infection control management (from the national guidelines)<sup>5</sup>**

Each health care establishment or region/district should have a committee or system of management that is responsible for the development, oversight and evaluation of the IC program.

Infection control management should reflect the spectrum of clinical services and administrative arrangements of the health care establishment so that policy decisions take account of implementation issues.

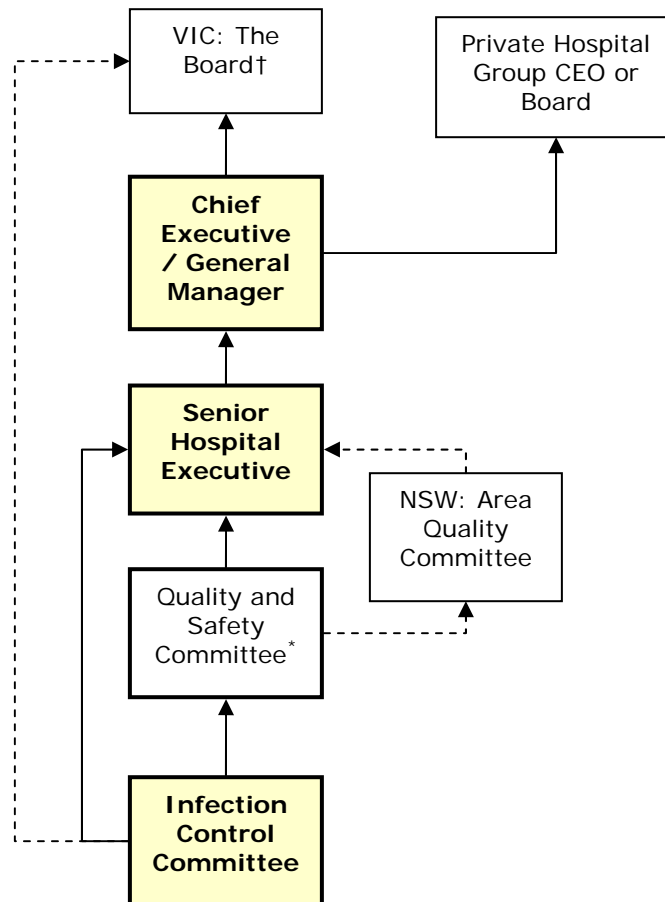
The IC committee structures described by those involved in this stakeholder review were generally based on the structure outlined in Figure 2.

- There is some variation in the clinical and corporate governance structure between the jurisdictions, and the private and public hospital sectors. Those structures common to all IC committee structures are highlighted in bold.
- In Victoria there is variation as to how the IC committee report to the Board. The IC committee may directly report to the Board, or report through to the Board via a Board committee, or through the CE.
- Private hospital IC committees generally report directly to the hospital executive, through to the CE and the Board.

This national stakeholder review found where IC committees are in place:

- Membership is multidisciplinary and tends to include: IC program staff; and representation from the hospital executive, nursing, medical, pathology services, pharmacy, theatre and sterilising services (CSSD), and facilities management (cleaning, food, waste management, engineering)
- May also include: ID physician if on site; quality and safety unit rep; allied health rep; other specialist services eg orthopaedic surgery, cardiac, dialysis, ICU; staff health service; population health.
- Membership usually includes representation from all sites (where organisation/network covers more than one site); and may represent all ward areas.
- Regional hospitals may also include a general practitioner (GP) representative and community health centre representative.
- No direct consumer representation but may report through to other committees which have consumer rep eg Consumer Advisory Committee; Quality and Safety committee.
- Chair (varies) may be from executive eg Executive director of clinical governance, CEO, directors of nursing or medical services; or the IC program clinical director from pathology or infectious diseases.
- Responsible to (varies) – DOMS, Executive Director of Clinical Governance, DON.

- Report to (varies) – directly to CEO, Board, or via other committees such as Clinical Practice and Safety Committee, Quality and Patient Safety committee, or sub committees of the Board, Clinical Governance Committee.
- Tend to be held monthly or bimonthly, all have documented terms of reference.
- Generally is network/organisation based and in NSW there are separate area health service based IC committees.



**Figure 2: The infection control committee and governance structures of the infection control program<sup>#</sup>**

† Reporting may occur via a sub committee of the Board.

\* Or the clinical governance committee or clinical practice and safety committee.

<sup>#</sup> At the time of this review Queensland Health was undergoing a restructure, and governance structures were unclear.

The IC committee is the main internal reporting mechanism, and IC programs report through the committee to the hospital executive. A number of barriers regarding the role of the IC committee were identified but most found the committee a useful forum for reporting IC issues to a broad range of hospital staff.

*"We previously had a dysfunctional IC committee, nothing would ever get done...did a review and streamlined it with executive approval...now have people on the committee who can make decisions and enable some of the actions. It's now answerable directly to executive and governance structures are in place."*

*"Committees don't make recommendations for executive to act upon. Limited effectiveness especially at area level."*

*"The committee is a rubber stamping exercise rather than a discussion forum."*

*"Committees not effective...can't authorise anything."*

A few interviews also revealed that one of the limitations is the duplication of IC data being reported to a number of committees.

*"Overlap of two committees."*

*"I report to 13 committees...reporting repetitively."*

IC committees or alternative systems of management can be a mechanism to engage clinical staff. Private hospitals and regional and rural facilities can have some difficulty engaging visiting medical officers (VMOs), and have used the IC committee to assist with this.

*"Good clinical buy in from surgery. A representative from orthopaedic surgery sits on the IC committee and has an interest in IC."*

*"The chair of the IC committee is a VMO, this is a voluntary unpaid position. Strategic committee with input from others eg pharmacy, purchasing manager etc to assist in influencing VMOs."*

*"GPs don't come to day time meetings, only available after hours."*

Although consumer participation in quality and safety improvement can enhance and guide the hospital program,<sup>6</sup> the review found that very few of the IC programs sought consumer input, including consumer representation on the IC committee.

### **Summary**

- The IC committee (or alternative system of management) serves a number of governance functions and is the main IC program reporting mechanism. It is the main conduit for information flow about IC issues to clinicians and hospital executives.
- Respondents perceived variable effectiveness of the IC committee, which may relate to the authority invested in the committee to ensure implementation of organisational policy and streamlining of communication flow.
- This review found that IC committees do not have consumer representation. The role of the consumer within IC programs has not been considered.

#### 4. Infection control policies and procedures

All hospitals involved in this national review have IC policies and procedures in place, which are available to all staff electronically via the intranet. Very few facilities have hard copies available, most have withdrawn them.

IC policies and procedures tend to be based on the national guidelines, Australian Infection Control Association (AICA) standards, Centers for Disease Control and Prevention guidelines (USA), Australian standards, and in response to emerging infections.

Infection control policies and procedures are developed by the infection control staff in collaboration with the IC committee, and in consultation with other stakeholders and end users. They are ratified and endorsed by the IC committee and signed off or sponsored by the hospital executive.

Hospital IC policies and procedures reflect state and territory IC policies and guidelines. There were some minor differences between the jurisdictions including: hospitals in the ACT have ACT-wide IC policy and procedure manual; and NSW Health develops policy directives, areas modify them to suit local policies and procedures.

The ICP is responsible for updating the policies and procedures. Some hospitals have an automated reminder system. Others review their policies and procedures on an annual, biannual or triennial basis.

There is variation in the system used to coordinate, authorise and regularly review the policies and procedures but most facilities use a centralised process. The Quality improvement committee, Clinical practice improvement unit (NSW Health area function), Policy and procedure committee, Clinical governance unit, or Quality and Safety unit may oversee, and coordinate the policy and procedure reviews.

Compliance of some of the policies and procedures are monitored by performing observational audits eg HH compliance, IV audits. These tend to be performed by the ICP or link nurse/champions from the clinical area in targeted high risk areas. Issues were raised regarding the limited ability of the ICP to monitor compliance of policies and procedures. Some of the issues raised are highlighted in the text below:

*"No auditing in place for monitoring compliance to policies apart from HH...no resources."*

*"Being monitored in part ...some of which was being undertaken by the link nurses. Need resources to continue"*

Other limitations or areas requiring further development were also discussed by some of the participants in this review:

*"Combined policies and procedures incorporating the community would be of benefit."*

*"Currently policy and procedure review is an issue as we put all policies up through many committees."*

*"We have an IC manual with over 700 policies and procedures!"*

### **Summary**

- All participating hospitals have policies and procedures for infection prevention and control. They are generally available electronically to allow updating and to ensure the latest versions are being utilised by staff.
- IC policy and procedure development is undertaken by the ICP in collaboration with stakeholders and end users and an IC committee, but streamlining of these processes is variable.
- Some monitoring of IC policy and procedure compliance takes place in most hospitals, but is often limited by the resources available to conduct the compliance audits.

## **5. Infection control program team**

Staffing of IC programs varied and was mainly dependent on the size of the hospital.

- IC programs tend to have an IC coordinator (NUM equivalent) who oversees the day to day running of the program. They are the lead person for the IC team (ICPs and nurses) and have a post graduate qualification in infection control.
- In addition to the IC coordinator, some programs (dependent on size) also have IC clinical nurse consultant (CNC) or clinical nurse specialist, who may or may not have a post graduate qualification in infection control.
- Some smaller, rural and regional hospitals may not have an IC coordinator but an IC CNC, Nurse unit manager (NUM) or Deputy DON who has an IC portfolio. They often have other hospital roles.
- Similarly in private hospitals depending on size, they may have an IC coordinator, or IC CNC.

Larger organisations tend to have a clinical director and the IC program is a service that is part of the division of microbiology, pathology or infectious diseases.

*Nursing awards and terminology varies between the jurisdictions. We have therefore used terminology that is used in most jurisdictions.*

Additional staffing for some hospitals IC program includes:

- Administrative support
- One hospital also has a Director of Nursing Infection Control
- One hospital had an infection control scientist (microbiologist) who produces reports, control charts and assists in data collection and organisation of IC course.
- Clinical nurse for auditing, hand hygiene, blood stream who may or may not associated with a ward.

- Link or liaison nurses – ward staff with IC role usually for education, auditing; coordinated by IC program (see Link nurse section for details)
- Hand hygiene champions
- One service has infection prevention team leaders which are made up of ward staff from each of the region's facilities (mainly nursing but others invited)

The Australian ICP is most often has a nursing background. All ICPs involved in this review had a clinical background in nursing. This is consistent with the findings from a survey recently conducted by the Commission in collaboration with AICA, and previous work conducted by Murphy and McLaws in 1999.<sup>7, 8</sup>

## 5.1 Staffing levels

Staffing requirements for acute hospital IC programs has been discussed in the literature for over twenty years. Staffing levels have been described as a ratio of ICP staff per occupied beds and these numbers have varied. Some recent examples of staffing ratios include those recommended in the Australian national guidelines of 1.5 ICPs to 200 acute care beds, and similarly in Canada the ratio of 3 full time equivalent ICPs for every 500 beds in acute care settings has been proposed. While others argue that the ratio should be based on the scope and complexity of the IC program not just bed numbers.<sup>9</sup>

This stakeholder review found that most hospitals (public and private) employ an ICP but their level of experience and training varied. The staffing levels varied between and within jurisdictions; and the IC staffing levels tend to be determined at the hospital level. All IC staff had dedicated office space.

One large tertiary hospital had recently undergone a review resulting in an increase in IC program staffing. Infection control link or liaison nurse programs were in place or were in the process of being set up in a number of facilities to help reduce the workload of the ICPs.

Many ICPs indicated that the IC program had low staffing levels for the increasing workload and demands of the program; and finding staff with the experience and qualifications for infection control role was an issue.

*"Weakness of the IC program includes the limited resources, funding and time...would like another IC staff member."*

*"(We have) Difficulty finding project staff with infection control expertise."*

*"Funding for resources, time, staff (is a program weakness)."*

*"In the smaller facilities the deputy directors of nursing have infection control written into their position description; however they are not skilled to be dedicated to infection control...no infection control qualifications and little infection control experience."*

*"...more resources within units needed such as link nurses."*

*"I think reporting will become mandatory and we'll need additional resources."*

*"There is a lack of a weekend service...no structure in place."*

*"Qualified person to do the IC job...tends to be learned on the job in regional and rural areas..."*

*"(We) work after hours...there is no clear structure in place for extra service provision"*

*"Difficult to get extra funding and resources in private system...no IT support, or ID/ microbiology resources readily available."*

### **Summary**

- Most hospitals employ dedicated infection control staff.
- Most hospitals whether metropolitan, regional/rural, public or private, have an IC coordinator or IC clinical nurse consultant who manages the day to day running of the IC program.
- In small hospitals, the ICP is often a nurse with multiple roles, and with fewer infection control qualifications.
- There is perceived increasing IC workload for which current staffing levels and resources are inadequate. Inadequate IC staffing levels and resources is perceived as a major barrier to IC programs.
- There is perceived inadequate rostering to meet the needs of the IC program, such as lack of weekend IC staffing.
- There is a lack of consistency in designation of level of IC training required for the ICP role between jurisdictions, and a lack of consistency in jurisdictional definitions of (IC) nursing roles and awards.

## **5.2 Dimensions and scope of infection control practice**

The dimensions of infection control practice were first outlined in the United States in the SENIC project<sup>1</sup> in the mid 1970s, and the first infection control analysis conducted by the Certification Board of Infection Control in 1982. Since then the scope of practice of the ICP has evolved from one that covered 8 practice dimensions with 60 tasks to 6 practice dimensions involving 147 tasks.<sup>9</sup>

In Australia, recent work by the Victorian Infection Control Professionals Association (VICPA) defined 8 key domains (outlined below) of IC practice, with 21 capabilities made up of 84 competency statements. They also describe 4 levels of specialty practice from novice/advanced beginner, competent, proficient to expert.<sup>10</sup>

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From the VICPA paper the following 8 key domains of practice of the ICP (together with their knowledge and skills) were identified:

- Perform administrative duties
- Develop policy and procedures
- Minimise infection transmission risks
- Coordinate surveillance activities
- Manage outbreaks
- Undertake educational activities
- Provide expert advice
- Continuing professional development

This stakeholder review found that all ICPs interviewed undertake surveillance activities, staff education through inservices and orientation programs, manage outbreaks, develop policy and procedures, and provide consultancy.

When asked to describe their role as infection control coordinator or professional, many discussed infection control practice dimensions and activities they perform; while others described their role in the broader context of what they provide to the hospital.

*"Education...surveillance, response to infectious disease exposures and outbreaks...developing, reviewing procedures, guidelines and standards."*

*"...coordinate and develop the IC program across the region which covers 12 hospitals."*

*"Coordinator who manages infection control."*

*"To provide advice, help executive understand impact...Facilitate learning in others"*

*"Not a clinical role but a consultant role – following a business consultant model that looks at the expert adding value...providing a supportive role not at a clinical level but at the consultative level."*

A number of additional activities were described by the ICPs interviewed including:

- Monitoring or conducting observational audits such as hand hygiene compliance, IV or cleaning audits. These are generally coordinated by or reported to the ICP but data collection may be done by other departments. In some instances they are performed by the ICP. One ICP was also involved in assessing compliance with screening (VRE, MRSA) in high risk areas; hand plating was conducted by one ICP.
- Staff immunisation and health
- Occupational exposure management and counselling following needle stick injury
- Follow up on biohazards
- Community education and public health liaison
- Antibiotic surveillance
- Legionella control – work with facilities management

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- Involved in medical sundries, product purchasing
- Provide advice to smaller or rural hospitals; support satellite regions out of town
- Workplace training assessment
- Inspect building renovations, advise on building works

Hospitals in the regional and remote settings have a greater role in liaising with the community. A number of larger hospitals, metropolitan or regional, also provide an advisory role to smaller hospitals or satellite services. Some examples from the review dialogue are listed below:

*"We provide education to community services such as child care centres, disability services."*

*"Provide community education with brochures."*

*"Run education sessions to community groups as requested."*

*"Support satellite regions out of town. A resource, provide advice to GPs etc."*

*"Provide advice to smaller or rural hospitals and GPs."*

Historically HAI are acquired in hospital, but community origin HAI and post discharge management of HAI is increasing. This has led to an increasing need for the ICP to manage infection outside of hospitals. They are now being asked to manage infection across the hospital-community interface, with more and more community partners seeking assistance and advice from the hospital based ICP. However currently there is a fragmented approach to managing infection across the community-hospital interface.

*"In Australia we are only just beginning to realise the importance of community interface and ability to prevent spread of infection."*

*"Now we need to look at how to broaden the ICP principles of clinical practice to manage the community-hospital interface. This is the future for the scope of practice of the ICP."*

In small facilities, HAI surveillance is not the main infection control activity but more time is spent on the education and consultancy role.

*"Surveillance is a minor role in remote locations."*

A number of issues were raised, predominantly around time constraints and performing tasks outside of IC program scope. The findings also highlighted the lack of research being undertaken by ICPs.

*"Staff immunisation, I don't see this as our job but at the moment it is."*

*"Looking at outsourcing immunisation to occupational health and safety staff health nurse."*

*"Audit program is expanding. Where there is good performance of IC audits in specific clinical units...Less need for input from us, allows us to allocate resources where there is greater need."*

*"(Scope of practice) forever changing, from data collection and education to anything related to infection control."*

*"No research, no time or resources."*

The recent paper by APIC/CHICA-Canada has research as one of the practice standards of infection prevention, control and epidemiology.<sup>11</sup> Similarly, other international papers that describe the scope of practice of the ICP have clinical research included as a core competence.<sup>9, 12</sup> However it is not included as one of the competencies in the VICPA paper. In Australia, there is a need for a culture that promotes research in infection control, and an environment which supports, encourages and facilitates clinical research.

### **Summary**

- The scope of practice of the ICP has evolved in response to shifting models of health care and emerging infectious disease challenges.
- All ICPs are involved in core activities including HAI surveillance, staff education, policy and procedure development, outbreak management and consultation.
- ICPs in both the public and private hospital sector may be involved in additional tasks and activities such as staff immunisation, product purchasing. The number and type of tasks varies and, apart from liaising with community services, does not seem to be dependent on the location or size of the hospital.
- Regional and rural hospital IC programs tend to have a greater role in providing information and services to the community.
- Based on shifting models of care from acute to community based health care, there is an increasing need for the ICP scope of practice to recognise community based practice. We need to prepare, educationally and professionally to pursue the management of infection across the hospital-community interface.
- There is limited research being conducted by IC programs. Adequate resources to support and facilitate research in infection control are needed.

## **6. Support services and resources**

### **6.1 Pathology services**

Infection control programs work closely with pathology and microbiology services. As mentioned above, the review found IC programs sit operationally under the pathology services in most of the larger tertiary hospitals. We also found pathology services are generally outsourced in private hospitals and hospitals other than the major tertiary hospitals. Most IC committees of large metropolitan and larger regional public and private hospitals have a pathology representative as a member.

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Where the pathology service is outsourced, the IC committee is less likely to have a pathology representative.

There have been recent changes in South Australia with the establishment of a single statewide pathology service for public hospitals and to service approximately half of the private sector.

Although the review did not explore the relationship of IC programs and pathology services in depth, the importance of this relationship was raised by a number of those involved in the review.

*"Placement of infection control under pathology works well – crucial for IC, infectious diseases and microbiology to work together closely."*

*"Communication is important...issue when private labs are sent things and I don't hear back from them."*

*"We went from having a hospital based pathology service to a regional service and now a private pathology service. IC issues in the community are no longer communicated back to the hospital service."*

Concerns were raised regarding hospital administrators and funding providers not understanding the relationship between the IC program and pathology services.

*"There has to be recognition that laboratory services are needed for IC services but they are often seen as two separate services with the laboratory service being seen as a diagnostic service and IC service is separate."*

*"Administrators see the function of the lab as a diagnostic service – not part of the IC service."*

*"...support for expanding the pathology services to cope with screening is really important. NSW provided very little in extra funding to support their MRO policy"*

*"Our lab runs flat chat and could do with some more staffing, in particular a full time person to run an MRO screening bench."*

Where private or outsourced laboratories are used issues around communication and service provision were also commented on. Some hospitals use multiple laboratories and this can create problems or additional work for the ICP.

*"They don't see themselves as part of our health service. If I have a microbiology question I can't phone the private service, they will only answer questions related to a sample I've sent. I have to call a large metropolitan hospital with a public pathology service."*

*"The (external) pathology service is contacted by clinical staff, and they tend to leave our guys out of the loop...outside the larger hospitals, everything is harder."*

*"They are invited to be part of our IC committee but do not come along."*

*"(Private hospitals) often have more than one pathology company outsourced; are protective of their data; ICPs may have to pull data manually from more than one data source."*

## 6.2 Infectious diseases specialist

Infectious disease (ID) specialists can assist the ICP, and provide expert knowledge and skills in aspects of infectious disease diagnosis, management and epidemiology.

This stakeholder review found that IC programs tend to liaise with ID specialists on an as needs basis unless from a hospital which has ID physicians on site where there are more regular and formalised meetings.

A number of IC programs from large public hospitals, have ID specialists as the program's clinical director – these groups have closer working relationships. Other large tertiary hospitals tend to have ID specialists on site, and the IC program staff meet with them on a formal and regular basis. Good rapport and relationships between the regional/rural hospitals and the larger metropolitan hospitals with ID specialists was also reported by several ICPs. There are also informal interstate relationships between ID services and some of the hospital IC programs.

*"We (ICPs) meet with ID registrar weekly to ensure communication lines are open"*

*"We meet regularly with ID physicians to discuss staph bacteraemia data."*

*"ICP meets weekly with ID physicians through ICU...discuss ICU patients, other patients seen by ID physicians on a referral basis."*

*"Weekly IC ward rounds of ICU with ICP, clinical director of IC, NUM, ID physician, ID pharmacist..."*

*"IC program attend clinical audit meetings with ID specialists...we consult with VIDS and get guidance from VIDS as needed."*

*"(From remote Queensland service) I contact Melbourne or Brisbane hospital ID specialists."*

## 6.3 Facilities management

Facilities management are usually represented on the hospital's IC committee, and IC programs have good working relationships with facilities management which cover:

- Food services
- Cleaning services
- Laundry and linen services
- Engineering
- Waste management

This stakeholder review found that many of the ICPs provide additional education and training to cleaning and food services. Cleaning services tend to conduct their

own audits and the ICP may monitor the audit findings. A number of hospitals offer facilities management staff additional education and training which has financial incentives attached. One of the IC programs involved in this review has a dedicated IC cleaning team.

*"Patient Services Assistants (PSAs) and cleaning groups have regular IC training - 6 sessions twice yearly."*

*"For management of MROs we have dedicated IC cleaning team...discharge cleaning for patients under precautions. They are paid higher(rates) than other cleaners."*

*"IC program has a close working relationship with environmental services."*

### **Summary**

- IC programs work closely with pathology services, infectious diseases specialists and facilities management.
- Pathology services are needed for IC programs. Increasing demands on laboratory services to support the infection control and prevention program (eg VRE screening swabs) and the need for additional resources are often not being met or recognised by administrators and funding providers.

## **6.4 Structural resources**

### **6.4.1 Information management – data collection, analysis and feedback**

This national review found that ICPs coordinate, collect, analyse and provide feedback on the HAI surveillance data. In smaller hospitals the data management tends to be done solely by the ICP. A number of IC programs from the larger hospitals have administrative support to assist with data entry; or IC liaison staff, or other clinical staff (HH champion, infection prevention team) may also be involved in some data collection. Some of the data collection systems are automated or linked in with laboratory systems.

Some of the data analysis is also done by the state/territory wide surveillance services eg VICNISS, CHRISP. A number of participants mentioned that both Queensland and Victoria have more mature centralised surveillance systems. Queensland use statewide software (one system) which is linked to the hospital administrative databases. The next version will also link in with pathology and theatre data modules.

Feedback on surveillance data tends to occur via the IC committee, or is given directly to wards if there are particular issues. Other feedback mechanisms such as monthly clinical unit reports, newsletters, information on intranet etc are also utilised.

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A number of limitations and enablers regarding the practicality and usability of the information management systems were raised.

*"Could be more streamlined at state level...issue with data reported back from NSW Health being delayed."*

*"Communications with ground staff regarding feedback of surveillance data needs improving."*

*"Double data entry issue."*

*"Poorly resourced state apparatus for data collection, validation."*

*"Northern Territory IT systems are not compatible...unable to create graphs. IT system is problematic. System of collating is outdated, requires manual sorting...time consuming and not validated with microbiology data. No administrative support."*

*"There is a lot of IC data that is not being tapped into."*

*"The HISWA data entry tool could be improved – more user friendly for data entry."*

*"Clerical assistance available to most...previously done by ICP now seen as a waste of skills."*

*"Direct access to pathology system...daily downloads."*

### 6.4.2 Use of incident reporting systems

Incident reporting systems enable health care workers to report and document patient safety incidents. This stakeholder review found that incident reporting systems are used by some hospitals to report infection control issues. There was mixed feedback regarding the usefulness of incident reporting systems, and there was no indication from participants that the information is being used to better understand patient safety incidents. Some of the comments are listed below:

*"Staff use the incident reporting system to report issues related to equipment shortage, failures etc and now moving to report surgical site infections."*

*"Riskman is used and if an issue is found we write to ask for an explanation...expect reply in one week."*

*"Ad hoc reporting by staff."*

*"Our service is not integrated into the process...get some information from the system but aren't always involved."*

*"Infection isn't considered a serious or high risk event unless it leads to a death."*

*"Incident reports are not always timely getting to me."*

*"It's an issue that reporting (of infections) is not mandatory."*

### **Summary**

- Information management is generally performed by the ICP. Some of the larger hospital programs have administrative support to assist with data entry.
- A number of data management issues were raised including duplication of data, data entry tools not being as user friendly or as practical to use as they could be. Pathology reports are available automatically to some IC programs, but others have to manually pull the data from the pathology system.
- There needs to be further assessment of how incident reporting systems can be more effectively used to support IC programs.

## **6.5 Education and training**

The national guidelines recommend "...each health care establishment should employ an ICP with an appropriate education to practice in that setting." This stakeholder review did not assess the level of education and training of ICPs in depth, but a number of those participants interviewed raised this as an issue for the profession.

*"Qualified person to do the job but it is unclear what that qualification is. It is not defined."*

*"Tends to be learnt on the job in regional and rural areas, even though there is evidence to show that a qualified ICP can reduce HAI."*

*"Training needs a broader organisational perspective."*

*"There needs to be standardisation of training of ICPs."*

*"There is a lack of a scholarship specifically for infection control."*

AICA recommends certificated credentialing of ICPs.<sup>13</sup> This is a self-regulatory process to determine and acknowledge that an individual has demonstrated prescribed competence of the relevant specialist nursing role.

The process of credentialing designates specialist or advanced expertise; informs consumers; establishes a national standard; promotes career advancement; identifies a community of experts; contributes to qualifications for independent practice; enhances the quality of care provided; and assists employers to manage risk.

Credentialing (referred to as certification in the USA) of the ICP has been discussed in the literature, but is limited to USA and UK based papers and very few Australian papers. The literature and feedback from AICA representatives inform us that the

uptake of the credentialing process in Australia has been limited. This stakeholder review did not assess these issues in detail.

As part of this stakeholder review, we looked at what education programs in academic institutions are currently available for nurses seeking or establishing a career in infection control in Australia. Table 1 gives a brief outline of the courses available by state/territory.

Currently there is no minimum or standardised educational requirement to practice as an ICP, or to coordinate an organisational IC program. The content of educational programs available to the ICP is variable because there are no Australian infection control standards of practice available to guide course or professional development.

Not all jurisdictions offer courses through their universities. However a number of courses are available by distance education. A variety of post graduate courses are available through universities ranging from a 5 day course offering a certificate of attendance, to a 1 year full time Graduate Certificate in Nursing Science (Infection Control) course. Other courses include a 3 day introduction to Infection Control course with open entry, and Infection Control and sterilisation courses. Several hospitals also run short courses, some in conjunction with universities e.g. Princess Alexandra Hospital, Qld offers a 2 week program which allows credits to the Griffith University Graduate Certificate course.

Many universities offer a Masters degree in Nursing, Health Sciences, Nursing by Research or Advanced Practice where the amount of infection control content varies and is up to the individual to choose those elements as electives.

**Table 1: Brief outline of infection control courses by jurisdiction**

Jurisdiction	Educational facility	Course
ACT	Canberra Institute of Technology	Training program in IC for office practice – one semester
NSW	Sydney hospital & Sydney Eye hospital	Post registration nursing course in IC - 26 weeks
	NSW College of Nursing	Introduction to IC - 1 day IC in aged care facilities – 2 days
	Macquarie University	Graduate Diploma in IC
	Charles Sturt University	Masters in Health Science Masters in Nursing Research
Queensland	Griffith University	Graduate Certificate in IC Master of Advanced Practice (infection control and prevention)
	James Cook University	Postgraduate Certificate of IC – 0.5 year FT
	Princess Alexandra hospital	IC course – 2 weeks
SA	The University of Adelaide	Graduate Diploma in Nursing Science (IC nursing) -1 year FT Graduate Certificate in Nursing Science (IC) - 1 year FT
	Flinders University	IC course - 5 day IC update - 1 day
	Women's & Children's hospital	Link Nurse course -2 day Link nurse refresher -1 day
Victoria	Mayfield Education Centre	Introduction to IC -3 days Certificate in IC & Sterilisation - 30 on-site days + 195hrs non-contact learning over 10 months Certificate in IC in Long term care facilities - 14 days+ 146hrs non contact learning + 2 day practicum at RMIT
WA	Charles Gairdner hospital	Graduate certificate in IC – 0.5 year
	Royal Perth hospital	IC short course - 8 separate hours
	Curtin University	Graduate Certificate IC - 1 semester Graduate Diploma IC - 2 semesters Master of IC -3 semesters
	Hands-on Infection Control (private company)	Range of education & training options from 1 hour to full day for a variety of settings covering a range of topics.

Findings from interviews with IC coordinators show that most ICPs at the coordinator level have a post graduate qualification in infection control. Many stated that this would be an essential element of expertise for the IC coordinator. Most ICPs were aware of the courses available throughout the different states.

A number of reports, including the VICPA competencies paper, include ongoing professional development as a domain of care or area of competence for the ICP.<sup>10, 14</sup> Several of the ICPs interviewed described use of IC resources and professional development activities through the professional associations and state based government services.

*"CHRISP is a wonderful support, information source."*

*"VICNISS has online education."*

*"Professional development is very important, either formal education or networking."*

*"This hospital mandates that both ICPs go to the national AICA conference."*

### **Summary**

- A range of education programs in academic institutions are currently available for nurses seeking or establishing a career in infection control in Australia.
- The content of educational programs available to the ICP is variable because there are no Australian infection control standards of practice available to guide course or professional development.

## **6.6 Mentoring and ICP networks**

This stakeholder review found there are no formal mentoring programs in place for Australian ICPs. A number of ICPs interviewed reported that they provide mentoring to external people such as less experienced staff.

Many ICPs described the networking and support forums available through AICA and the AICA state and territory affiliated associations, as well as region based forums. Use of other informal networks and contacts with ICPs were also reported. There tends to be greater networking in regional and rural settings. Some examples were reported during the stakeholder interviews including:

*"Northern Territory ICPs meet face to face annually – funded by NT health."*

*"South Australian Nosocomial Infection Taskforce (SANIT) forum for mentoring - works well but can become too big and discussions can be disorganised."*

*"WA Country Health IC network monthly teleconference."*

*"Bimonthly Gippsland RICPRAC (Victorian rural infection control practice group) meeting."*

*"Important for us in Tasmania to tap into other networks such as AICA, TICA."*

AICA is the peak national body representing the interests of the specialist practice of infection control within Australia. AICA represents the collaboration between the State and Territory infection control associations in Australia.

AICA seeks to support those engaged in the specialist practice of infection control as well as the broader health care community in relation to infection control by acting as an information broker to its members. As a voluntary not-for-profit association AICA serves as an important vehicle for clinician lead change.

## **7. Relationships**

### **7.1 Other internal relationships – hospital staff**

As outlined in the literature, strong leadership at the ward level and from administrators is critical in achieving clinician buy-in and reducing HAIs.

The literature and the review's findings show there are issues around organisational culture and clinician behaviour which can impact on the success of an IC program. A number of ICPs discussed their lack of empowerment and limited influence to change clinician behaviour.

In addition to having a multidisciplinary IC committee with representation from hospital clinical and non clinical areas, IC programs seek to engage staff using a number of strategies including:

- Providing infection prevention and control education;
- Reporting infection control data directly to staff;
- Providing infection prevention and control information and data on the intranet or via hospital wide newsletters;
- Coordinating or facilitating a link nurse/health care worker program; and
- Other initiatives such as having IC representative or IC prevention teams from each ward/area.

To raise awareness of the service and to provide basic IC education, IC programs are involved in the hospital orientation program. IC programs tend to provide additional education sessions and inservices, although the frequency and participation is variable.

IC programs often report infection rates and infection control issues directly to doctors and the teams, some also send annual reports to each of the hospital divisions, and some have regular IC reports available on the intranet.

#### **7.1.1 Link nurse**

The infection control link (or liaison) nurse acts as a link between their own clinical area and the infection control team.<sup>15</sup> The role of infection control link nurse is to:

- Raise awareness about infection control and prevention issues

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- Support the compliance of infection control practice
- Provide a communication link into clinical and non-clinical areas

In the UK a national review of the infection control link nurse role, found that "departments consider they are effective when there is a relatively stable workforce, the hospital is on a small number of sites, nurses have recognised authority, and they are allocated time to attend meetings and training sessions."<sup>15</sup> From the review, a number of Australian hospitals have a link nurse program in place. However there were mixed responses regarding the success of the program. The following outlines responses from a number of participants about the role of the link nurses, and some of the enablers and barriers identified:

*"(the link nurse) provides advice, coordination of service at the coal face, when on duty or as link nurse."*

*"Liaison nurses on wards assist with buy-in but variable."*

*"Works well in some areas where they are well supported...works well with enthusiastic personalities...but is fragmented in most."*

*"Purpose of link nurse education program is to leverage infection control assistance and also create engagement"*

*"Link nurses didn't work – too busy on wards, staff turnover was a problem"*

*"Link nurses in all facilities but variably supported"*

*"Liaison group ...very good initiative as couldn't get any more resources."*

*"We provide incentives for the liaison group and award prizes such as book vouchers for the nurse with the highest activity based points."*

*"We looked at the difference between 2 wards (snap shot audit without notice) – one with and one without link nurses, and found 15% greater compliance on the link nurse ward."*

*"The link nurse training was organised by the state health department. I have good support from senior ward management and the IC program. It is a rewarding and fulfilling role...helping patients not get infections."*

*"Difficulty at times when on link day to not help out with usual ward activities when staff are very busy."*

A number of other strategies have been developed to assist with increasing hospital staff buy-in, and raise awareness of infection control and prevention issues. For example, a regional area ICP has developed infection prevention teams (multidisciplinary team) for each healthcare facility or multi purpose site to facilitate:

- Information sharing
- Effective communication
- Recognition and use of existing site expertise
- Local capacity building

### 7.1.2 Barriers to hospital staff engagement in infection control

Although a number of strategies are in place to facilitate engagement of hospital staff in infection control, several ICPs and clinical directors raised the lack of buy-in as a limitation of their IC program. In hospitals where medical staff and other non clinical staff are not directly employed by the hospital, this is an even greater challenge.

*"Challenging to get doctors – surgeons and medical practitioners – involved, even though we ask them to be on committees (private hospital)."*

*"Medical buy in is poor, system of communication with medical staff is poor."*

*"Contracted cleaners and food services (are invited to but) don't have to attend orientation (private hospital)."*

*"Visiting medical officers (VMOs) are not employed by the (private) hospital, and more difficult to ensure compliance with recommendations and Australian standards."*

*"Challenge with engaging formally with medical staff, for example, no orientation, no planned regular education, communication with medical officers. Poor buy-in."*

A number of enablers were suggested with the focus being around mandatory training:

*"We want infection prevention and control to be like the fire drill, you have to sign off every year eg hand washing, correct aseptic technique."*

*"Not everyone goes to orientation but it will be mandatory soon."*

*"Grand round presentation which had good response (from medical staff)."*

*"Sent letters out to all VMOs about hand hygiene rub with good response. Usage rates improved by 92% in March-August 2008 over 2007 levels."*

*"IC nurse manager attends monthly nurse unit manager meetings – high profile on wards."*

#### **Summary**

- IC programs utilise numerous strategies to engage hospital staff in infection prevention and control.
- Link nurse programs have been implemented in a number of hospitals with mixed success. Having allocated time to perform link duties, strong ward leadership, incentives, stable staffing and choosing a link nurse with an interest in infection control were reported enablers.
- Lack of clinician buy-in was reported as a major barrier to successful infection control programs.

## 7.2 Relationship with government

We interviewed representatives from all state and territory health departments except the Northern Territory.

The role of the jurisdictional funding providers is:

- To articulate funding, policy and direction for public hospitals
- Regulation and licensing of private hospitals (federal government's role in ACT and NT)
- To provide expert advice (often in collaboration with an expert advisory committee)
- To support hospitals in a state-wide approach
- To monitor communicable diseases in public health domain – reporting and compliance

The branch, unit or division that is responsible for public hospital infection control varies among the jurisdictions however the role and governance structures are similar. As outlined in Table 2, IC comes under the safety and quality, the public health, acute care or the communicable diseases branch. Although we did not specifically ask about barriers and enablers regarding where in the government department hospital infection control sits, it was raised as an issue by one of the review's participants.

*"IC has moved from infectious diseases to quality branch. OK in some respects but misses out on the epidemiological expertise from Communicable Diseases Control (CDC) branch, and also enables CDC to dodge the issue of spreading community MRSA infections that impact on health care."*

Within the health departments a number of internal lines of communication exist some examples are given below. However, most lack formal communications for example in the format of a regular meeting.

- In Victoria the Statewide quality branch liaise closely with the Public health branch;
- In Western Australia, the Office of safety and quality in health care and the Centre for communicable disease control directorate have a complimentary working relationship.
- In South Australia meetings between the Communicable diseases control branch and Public health are informal but frequent
- In NSW the Quality and Safety branch has a close working relationship with the Public health branch.

Most jurisdictions have (or plan to have) an expert advisory committee to provide strategic direction in relation to infection control and prevention (see Table 2). These committees are multidisciplinary and include representation from metropolitan, regional and rural hospital settings, as well as pathology services and private hospitals. The Tasmanian infection control reference group also has primary care representation.

Other infection control networking groups with department based secretariat or departmental representation are run in a number of jurisdictions. They are predominantly a networking forum and have been outlined in section 6.6.

**Table 2 – Differences in jurisdictional hospital infection control governance and services**

<b>Jurisdiction</b>	<b>Department responsible for hospital infection control</b>	<b>Expert advisory group</b>	<b>Surveillance service</b>
Australian Capital Territory	Patient safety and quality unit	ACT-wide reference group <sup>#</sup>	-
New South Wales	Quality and safety	HAI advisory group	HAI*
Northern Territory	Acute care division	-	Send data to RDH IC DON
Queensland	Communicable diseases branch	CHRISP expert advisory group <sup>#</sup> (CEAG, formerly ICEAGE)	CHRISP
South Australia	Communicable disease control branch	Establishing	Infection control service
Tasmania	Public health unit, Population health	Tasmanian IC reference group	TIPCU*
Victoria	Statewide quality branch	VACIC	VICNISS
Western Australia	Communicable disease control directorate (HCAI unit)	HICWA expert advisory group	HISWA

\* Recently started service in stage of development.

<sup>#</sup> At time of review group was not running.

### **7.2.1 State and territory wide infection control and HAI surveillance services**

Most jurisdictions have a state or territory wide infection control centre that provides a centralised surveillance service. Although the focus is on infection control in public hospitals, private hospitals are (or will be) invited to contribute to most of the surveillance programs.

Their primary role is to coordinate healthcare associated infection surveillance systems for public (and private) hospitals, and provide support to implement surveillance activities.

Other roles include:

- Education, training and support
- Leadership, coordination of IC strategies
- Policy development or advisory capacity for policy development
- Emergency planning
- Provide an important networking/communicative role

Some differences across the jurisdictions:

- Participation in surveillance programs is voluntary for all jurisdictions except NSW.
- NSW Health and TPCU (Tasmania) are in the early stages of surveillance work.
- TPCU hospital surveillance data is validated against pathology reports.
- ACT Health do not have a surveillance centre but receive ACHS clinical indicator data from public hospitals.
- NT has a system in place to collect and aggregate the surveillance data for presentation to district managers and NT Health.
- CHRISP is a statewide service which is part of the Southern Area Health Service, Queensland Health and reports to the Senior Director, Communicable Diseases Branch. CHRISP has two missions as it is both an implementer and an enabler of evidence-based and clinical led business practice change. At the time of the review a restructure of Queensland Health was occurring.
- VICNISS model in Victoria is based on the US Centers for Disease Control and Prevention program called the National Nosocomial Infection Surveillance system (now called the National Healthcare Safety Network). Private hospitals have recently been invited to submit their data. There is joint executive sponsorship with Victorian Department of Human Services and Melbourne Health.
- HISWA is the Western Australia statewide surveillance program managed by the HCAI Unit at Communicable Disease Control directorate, and supported by the Office of Safety and Quality in Health Care. Both public and private hospitals are involved.
- The Communicable Disease Control branch of SA Health collect and aggregate HAI surveillance data and antibiotic utilisation data from both public and private hospitals.

From jurisdictional representatives, the following issues were raised in this stakeholder review:

*"Difficulty getting solid data re infection rates – differing interpretation on collection methods, definitions of denominators...flaw in the system."*

*"Poorly resourced state apparatus for data collection, validation, variable practice in surveillance."*

### 7.2.2 Other government reporting mechanisms

There is currently no inter-jurisdictional or national accountability. However, the Australian Health Care Agreements (AHCA) is currently in the process of negotiating the inclusion of two national indicators that relate to infection control.

Some jurisdictions have additional mandatory reporting of HAI indicators, including:

- NSW Health mandatory reporting of 8 indicators. These are a subset of the ACHS clinical indicator program, and are only required to be reported by public hospitals.

- Mandatory reporting of key HAI clinical indicators to WA health. These indicators are reviewed by HICWA. All WA public hospitals and licensed private healthcare facilities providing services for public patients are required to implement clinical indicators.
- MRSA is a notifiable disease in WA.
- SA health is in the process of developing mandatory reporting indicators.
- KPIs for Country Health SA include education and training (attendance), MRSA, surgical site infections, AB surveillance which is jointly collected and reported with drug and therapeutics committee.
- VRE is a notifiable disease in Tasmania.
- Health Quality and Complaints Commission (HQCC) in Queensland collect mandatory data on surgical safety and optional data on hand hygiene standards from both public and private hospitals.
- Victoria use their statewide public hospital compliance of the infection control data submission to VICNISS as a key performance indicator. (and is now linked to performance agreement (payments) for larger hospitals).
- A system is being developed in Victoria requiring all hospitals to submit data on all bloodstream infections. The data will be used to as a key performance indicator with the MRSA isolate rates for HH program.

As discussed in the information management section of this report, duplication of reporting and issues regarding data collection mechanisms eg needing to manually pull data, variability in data interpretation, and the inability to look at rates and respond in real time were some of the limitations of the external reporting mechanisms raised.

### ***Summary***

- The role of the jurisdictional governments in infection control is similar across the states and territories. However there are small differences in their governance structures and services they facilitate.
- Regulation is the only role of the state governments within the private hospital sector.
- There is no consistency of what is reported to each of the jurisdictional governments.
- There are currently no infection control indicators reported at a national level, but planning is underway with the Australian Health Care Agreements.

### **7.3 Relationships with other external agencies**

Links with community services, regional and jurisdictional based networking groups, external pathology services and external ID expertise have been detailed in previous sections of this report.

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This stakeholder review found that several of the participating IC programs had additional relationships with agencies outside of their hospital, including:

- Voluntary reporting of *Staphylococcus aureus* blood stream infection to ANZCOSS;
- Benchmarking with like hospitals - for example the Royal Hobart Hospital and The Canberra Hospital benchmark some of their HAI surveillance rates;
- Participation in the ACHS clinical indicator program which includes some infection control indicators.

## **8. Differences between types of hospitals**

### **8.1 Private hospitals**

A number of differences between public and private hospital IC programs have been described in this stakeholder review. The main differences are outlined below.

Regulation is the state governments' only role within the private hospital sector. This role is different to that of the public hospital sector where the state and territory governments articulate funding, government policy and direction, and monitor HAI rates.

Private hospital licensing requirements include infection control minimum standards. Infection control is also integral to private organisations achieving accreditation. Whereas, there are no jurisdictional minimum standards for infection control in the public hospital sector.

Private hospitals are invited to participate in some of the jurisdictional-level surveillance services. Where this has occurred, good buy-in and a strong willingness to be involved were reported in this review.

Private hospitals may have more than one pathology company outsourced, and the ICP may have to pull data manually from a number of databases. Cleaning and food services are contracted in the private sector. Staff from these services are encouraged to attend orientation but do not have to.

In private hospitals VMOs are not employed by the hospital which may make it more difficult to ensure compliance with recommendations, guidelines and Australian standards. It is challenging to get VMOs involved in IC committees as the positions are voluntary and often unpaid. Similar issues were raised in smaller hospitals and regional and rural hospitals with VMOs and GPs.

### **8.2 Rural and remote hospitals**

Several differences in the rural and remote hospital IC programs were also reported in this stakeholder review.

Staff retention and recruitment issues were raised. In some areas it is not only difficult to fill some of the ICP positions, but there is also high turnover of other hospital staff making the role of the ICP in provision of IC education to hospital staff, and the recruitment and training of positions such as link nurses increasingly difficult.

Access to local expertise is also limited. Rural, remote and some regional areas do not have access to microbiology or ID physician expertise. This stakeholder review found that ICPs have good networks and connections in place. ICPs in rural and remote settings tend to work in isolation and generally seek advice from metropolitan services, or other larger regional hospitals and form strong networks with other like programs. The ICP in the small hospitals need to be competent in IC knowledge or know how to find expert information in infection control.

Most of the regional, rural and remote hospital ICPs raised the issue of there being a shortage of qualified IC staff. They have difficulty finding replacements or back up for leave, and reported a lack of succession planning.

In addition, a number of regional and rural ICPs reported having a greater role within their hospital. For example they may take on a clinical workload because there are no agency staff in their settings. As mentioned in section 5.2, outside of the metropolitan settings, ICPs tend to have broader communications with the community.

## Limitations

There were a number of limitations with this stakeholder review, namely:

1. Limited access to jurisdictional and executive representatives. Within the timelines not all contacted respondents were able to provide an interview time and others cancelled at short notice. Unfortunately, the Northern Territory health department is not represented in this stakeholder review, and we were unable to interview hospital executives representing all of the jurisdictions. Private hospitals are not well represented in this review.
2. Limited number of stakeholder interviews. This review involved key informant interviews with 37 participants representing various levels of the public and private health care sectors. Our sample of stakeholders was one of convenience not a random sample. We also only interviewed hospitals that have an IC program in place. It should therefore be read with caution and not as a representation of all Australian public and private hospitals.
3. At the time of this stakeholder review, Queensland Health was undergoing a restructure. Their corporate and clinical governance structures were unclear.

## Recommendations

### Governance

Clinical governance should reside at all levels of a hospital and the hospital should ensure commitment to IC through active executive participation and sponsorship.

The clinical governance framework for IC programs should consider governance, including responsibility and accountability from the point of care up to the hospital executive, (and the Board) and to jurisdictional and national government bodies.

The clinical governance structure of the IC program should consider all relevant stakeholders, in particular; pathology services, expert clinical groups, community partners and consumers.

An IC committee should have a clear mandate for its activities which are explicitly outlined in terms of reference and are supported within an effective governance structure.

There needs to be a review of clinical governance to support greater adherence of individual clinicians to IC policies and procedures. This should consider components of the clinical governance framework, including credentialing, support strategies, performance assessment, monitoring as well as remedial response processes.

### **Infection control program components**

The model of IC program should be informed by the size and complexity of the healthcare organisation and its community partners, and assessed needs and priorities.

IC programs require a risk management plan that includes management of infection outbreaks.

An IC program requires a funding model that supports the specified program activity domains and resources necessary to implement and sustain these activities.

Hospitals should support IC programs with staff dedicated to infection control and adequate access to expertise in infectious diseases, microbiology and pathology services and epidemiological methods.

Hospitals should provide structural resources to support the ICP including effective data collection, analysis and reporting systems.

### **ICP scope of practice**

The scope of practice of the ICP should be outlined within a job description that includes the common and required elements of HAI surveillance, outbreak management, education, IC policy and procedure development and consultancy; and is flexible to meet the needs and priorities of the hospital.

### **Education and training of the ICP**

The scope of practice of the ICP should reflect the education and training of the ICP in relation to expected roles and responsibilities.

It is recommended that there be a national approach to developing curricula for infection control post graduate courses.

## Abbreviations

ACHS	Australian Council on Healthcare Standards
ACSQHC	Australian Commission on Safety and Quality in Health Care
AICA	Australian Infection Control Association
ANZCOSS	Australia New Zealand Co-Operative on Outcomes in Staphylococcus Sepsis
APHA	Australian Private Hospital Association
APIC	Association for Professionals in Infection Control and Epidemiology (USA)
CDC	Communicable Disease Control
CE	Chief Executive
CEHSEU	Clinical Epidemiology & Health Service Evaluation Unit
CEO	Chief Executive Officer
CHICA-Canada	Community and Hospital Infection Control Association-Canada
CHRISP	Centre for Healthcare Related Infection Surveillance & Prevention
CN	Clinical Nurse
CNC	Clinical Nurse Consultant
CPI	Clinical Practice Improvement
CSSD	Central Sterilising Service Department
DON	Director of Nursing
DOMS	Director of Medical Service
EAG	Expert Advisory Group
GP	General Practitioner
HAI	Healthcare associated infection
HISWA	Healthcare Associated Infection Surveillance Western Australia
HICWA	Healthcare Associated Infection Council of Western Australia
IC	Infection Prevention and Control
ICP	Infection Control Professional
ID	Infectious disease
KII	Key Informant Interview
KPI	Key Performance Indicator
MRO	Multiresistant Organism
MRSA	Methicillin Resistant Staphylococcus Aureus
NUM	Nurse Unit Manager
RMIT	Royal Melbourne Institute of Technology
SANIT	South Australian Network of Infection Control Team
SENIC	Study of the Efficacy of Nosocomial Infection Control
TIPCU	Tasmanian Infection Prevention and Control Unit
VICNISS	Victorian Hospital Acquired Infection Surveillance System
VICPA	Victorian Infection Control Professionals Association
VMO	Visiting Medical Officer
VRE	Vancomycin Resistant Enterococci

## Glossary

Clinical governance	A systematic and integrated approach to assurance and review of clinical responsibility and accountability that improves quality and safety resulting in optimal patient outcomes.
Epidemiology	The study of factors that have an impact on disease in the human community. Often used in the control of health problems.
Health care associated infection	Infections acquired as a direct or indirect result of health care.
Infection	The invasion and reproduction of pathogenic (disease-causing) organisms inside the body. This can cause tissue injury and progress to disease.
Infection control	Infection control aims to prevent the spread of pathogens between people in a health-care setting.
Infection control practitioners/professionals	Adopted initially in the U.S.A. in 1972 during the formation of the Association for Practitioners in Infection Control. In Australia, often used interchangeably with the term infection control nurse.
Infection control and surveillance (prevention) programs	An organised program that includes surveillance, control measures and formal infection control policy.
Inpatient	A patient who visits a health-care facility for diagnosis or treatment and stays in the hospital for at least one night.
Outbreak	A classification used in epidemiology to describe a small, localised group of people infected with a disease.
Surveillance	Disease surveillance is an epidemiological practice by which the spread of disease is monitored in order to establish patterns of progression. The main role of disease surveillance is to predict, observe and minimise the harm caused by outbreak, epidemic and pandemic situations, as well as increase our knowledge as to what factors might contribute to such circumstances.

## **Appendix 1: CEHSEU project team and Expert advisory group membership**

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## **Appendix 2: Key informant interview questions**

### **Jurisdictional level**

The following are the key areas we are interested in reviewing:

1. What is the role of the jurisdictional government in infection control (IC) within public and private hospitals?
2. How is infection control structured within the divisions of the jurisdictional health department?
3. What are the reporting mechanisms for infection control and prevention staff at the jurisdictional level?
4. How is infection control funded?
5. What infection control programs are currently in place in the jurisdictions for public and private hospitals?
6. What is the scope of practice of the Australian IC practitioner?

### **Facility level – executive and management role**

The following are the key areas we are interested in reviewing:

1. What is the role of hospital executive in infection control?
2. What are the reporting mechanisms and regulations for infection control and prevention at the facility level?
3. What is the structure of the infection control program and how does the model fit within the organisation?
4. Are there outstanding issues that need to be addressed?
5. What is the scope of practice of the Australian infection control professional?

### **Facility level – ICP role**

The following are the key areas we are interested in reviewing:

1. What infection control program is currently in place in the facility?
2. How is governance of HAI addressed at the facility level?
3. What are the reporting mechanisms for infection control and prevention staff at the facility level?
4. What infection control policies and procedures are in place at the facility level?
5. How is information managed regarding data collection, analysis and feedback?
6. What is the scope of practice of the Australian ICP?
7. What mentoring support programs for ICP exist?
8. What education programs in academic institutions are currently available for nurses seeking or establishing a career in infection control in Australia?

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