Abstracts

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These abstracts contain information which represents the views and opinions of the author and not necessarily reflect those of the Australian Infection Control organisers or the host organisation. Abstracts are listed in programme order. These abstracts have been made available by the presenters. Abstracts are not available for all presentations.

MDR-TB in a modern Australian hospital

Paul Johnson • Infectious Diseases and Infection Control Departments, Austin Health, Heidelberg, VIC

Australia has an enviable record on control of tuberculosis (TB). Our successful campaign began in the late 19th century, and although some or its success is attributable to improvements in housing and nutrition, the isolation of cases in Sanatoria and then mass screening and drug treatment programs each played a role.

However, in this new millennium, TB is not gone, and should not be forgotten. In Victoria in 2007 approximately one new case of TB was notified per day and 90% of these were patients born overseas who had developed reactivation of a distantly acquired, latent infection. Fortunately, the great majority of isolates were fully sensitive to first line therapy, enabling safe and well tolerated drug treatment.

Unfortunately, good practice in Australia will not protect us against poor practice elsewhere. In 2008 WHO reported that rates of multi-drug resistant TB (MDR-TB) were the highest ever recorded worldwide, with problem areas including former Soviet bloc countries, China, India and South-east Asia. As just one example of what the future could hold, in the period 2002–2007 the MDR-TB rate for TB in China was 5% for primary and 26% for relapsed TB; during this same period Australia received at least 77,000 new migrants from China, an unknown proportion of whom will have latent TB.

I will discuss a recent case of MDR-TB (initially considered extra drug resistant or XDR-TB). This case tested many of our systems for dealing with highly resistant TB in a modern hospital, and some components were found wanting. In particular, while providing safety for staff, our small and confined negative pressure rooms are not suitable for caring for patients who need to be hospitalized for many months. The expected rise of MDR-TB in coming years will require new and more imaginative approaches.

An overview of the work of the CJDSGN and the aims of the national education/awareness program

Mandy Newton • CJD Support Group Network

The CJD Support Group Network is funded by the Department of Health and Ageing and is contracted to assist and support all families affected by CJD and people who are 'at risk of CJD' in Australia.

As part of our education/awareness program we have launched a DVD 'Understanding CJD'. Our target audience is health care professionals and we are hoping to be able to present our DVD at many conference and information sessions. The aim of the education program is to promote awareness of prion disease and the work of the CJDSGN in Australia.

We have been assisted in the production of this DVD by Professor Colin Masters and Associated Professor Steven Collins from the Australian National CJD Registry in Melbourne and have also worked closely with several representatives of state health departments as well as infection control experts in Australia.

In order to maximise exposure and benefit, we aim to present our DVD personally and by sharing some of our experiences we hope to dispel many of the myths associated with classical CJD (cCJD) and to bring a better awareness of this rare and fatal neurological disease and more informed care for CJD patients.

We also hope that our DVD will assist health professional when dealing with an 'at risk of CJD', and that by working together we can create an environment where these patients feel comfortable and confident of receiving equity of care when disclosing their at risk status.

We have worked very closely with the DoHA to ensure that the DVD is current with the revised infection control guidelines that were published in December 2007.

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The Global Outbreak and Response Network

Dr Tony Stewart • Burnet Institute

The Global Outbreak Alert and Response Network (GOARN) is a technical collaboration of more than 150 institutions and networks who pool human and technical resources for the rapid identification, confirmation and response to outbreaks of international importance. The aim is to bring together a coordinated international team with the best available expertise.

Participation is open to technical institutions, networks and organizations that have the capacity to contribute to international outbreak alert and response. Members include regional technical networks, networks of laboratories, United Nations organizations (e.g. UNICEF, UNHCR), the Red Cross (International Committee of the Red Cross, International Federation of Red Cross and Red Crescent Societies and national societies) and international humanitarian nongovernmental organizations (e.g. Medecins sans FrontiAres, International Rescue Committee, Merlin and Epicentre).

Since 2000, GOARN has had over 100 missions to 63 countries, utilising more that 550 experts from over 50 partner institutes.

Emerging infections

Dr Ian Jennens • Victorian Infectious Diseases Service

One of the many challenges facing human life on Earth is the emergence of new or the evolution of old infectious diseases.

Widespread, unregulated antibiotic use and alteration of the environment, together with changes to human lifestyle, travel and animal husbandry practices over the last century, has led to microorganisms evolving and adapting to these new conditions and being able to spread rapidly around the globe. When organisms find new niches in non-immune pockets of the world population, epidemics can occur, generating fear as well the recognised human, animal and financial cost.

Infection control practices play a vital role in containing these outbreaks. Education and forward planning are essential to minimise the impact of these threats to our society.

National reporting of healthcare-associated *Staphylococcus aureus* bloodstream infection (HA-SAB)

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In the United Kingdom, there has been mandatory measurement of all BSIs caused by *S. aureus* (including MRSA) since 2001. These surveillance data have underpinned a multifaceted effort to reduce health care associated MRSA infection that included a root cause analysis of each episode. Peak numbers of MRSA BSI occurred in the six-month period from October 2003 to March 2004 (3955 episodes). This rate fell by more than 40% (to 2376 episodes) from April to September 2007 (rate 1.24 cases per 10,000 inpatient days). In Australia, rates of SAB and HA-SAB vary widely by location. For instance, recent analysis indicates that HA-MRSA BSI is 5–7 times more frequent in NSW and Victoria compared with Western Australia.

The Australian Commission on Safety and Quality in Healthcare has coordinated a review of healthcare-associated surveillance priorities in Australia culminating in the release of a report in July 2008 (see http://www.safetyandquality.org/internet/safety/publishing.nsf/content/prog-HAI_Surveillance). A top level recommendation for national reporting of HA-SAB will be considered by Australian Health Ministers later in 2008. The original AICA-NAB definitions for healthcare-associated status will be used (i.e. Inpatient and Non-inpatient categories). It is envisaged that Infection Control services will be responsible for categorisation and reporting of SA-BSI events up to National level via jurisdictional channels.

HA-SAB will be used as the main outcome indicator to gauge the effectiveness of the Australian Hand Hygiene Initiative that is also being brokered by the Commission. As well, a standardised method for individual event investigation by Infection Control staff is envisaged to identify serious lapses in practice and other advisable preventative measures.

Using an IT platform for HAI surveillance: The VICNISS SHIINe story so far

Judith Brett • VICNISS Coordinating Centre

The VICNISS program is a Victorian DHS funded program, set up in 2002 to monitor hospital acquired infections (HAI's) in Victorian public hospitals. Using the same surveillance methodologies as the Centre for Disease Control (CDC) in the USA, VICNISS monitors surgical site infections (SSI's), ICU central line associated bacteraemias (CLABSI's) and ventilator associated pneumonias (VAP's). Data from each participating hospital is forwarded to the VICNISS Coordinating Centre (VICNISS CC) for inclusion into risk stratified aggregated state HAI rates.

Surveillance of HAI's is a time consuming task often requiring highly trained staff to spend considerable effort on basic data gathering and entry. In many cases this data already exists in an electronic form in the existing hospital IT systems. The VICNISS CC set about to supply infection control teams an IT platform that would extract and collate this information from existing electronic sources. The implementation of this software has increased efficiency of surveillance activities, reduced duplication and data errors.

This presentation explains how the VICNISS CC came to be custodians of a new software application, including the decision to build not buy, the benefits of the SHIINe application and future plans for the software.

New microbiological technologies in surveillance

Elizabeth Grabsch • Austin Health

Infection control measures, including patient screening for colonisation, cohorting and isolation of infected and colonised patients have reduced the clinical disease burden of nosocomial-acquired infections such as methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant Enterococci (VRE). Early detection of colonized patients may improve the timeliness of infection control measures and thereby reduce pathogen transmission.

The utility of routine culture-based screening programs have been limited by the 2 to 4 days required to obtain accurate results. In many microbiology laboratories, chromogenic culture media are replacing traditionally used media such as mannitol salt agar for MRSA isolation, and bile esculin agar with vancomycin for VRE, and may reduce in some cases, detection times by 24 h. However, PCR-based real-time assays for laboratory detection and/or identification of MRSA and VRE may result in more timely notification of MRSA and/or VRE colonisation, with some MRSA test results available in 2 to 3 h of specimen collection. Also a new PCR assay for Cl difficle detection is soon to be released in Australia.

These new laboratory methods for detections have the potential benefits to reduce nosocomial infection particularly in high risk patients, and Infection Control Professionals need to be aware of the cost benefits and limitations for their institutions.

Pandemic planning – what can we learn from international models?

Kylie Carville • Victorian Infectious Diseases Reference Laboratory

The first version of the Australian Management Plan for Pandemic Influenza (2005) listed reporting requirements for hospitals during a pandemic, including ED presentations, admissions, intensive care unit (ICU) occupancy, and deaths in hospital from influenza and pneumonia. However, practical approaches to collecting and reporting these data were not provided and detailed guidance on the multitude of issues that may face hospitals in a pandemic was scarce.

Discussions with Infection Control Practitioners revealed that some hospitals were struggling to develop detailed pandemic plans. Given Australian hospitals could benefit from the planning guidance of hospitals with related experience, such as SARS outbreaks, we sought 'gold standard' influenza pandemic plans to compare with draft plans from three Victorian hospitals. The gold standard plans were the Toronto Academic Health Sciences Network (TASHN) Pandemic Influenza Planning Guidelines, and the Sunnybrook Health Sciences Centre Pandemic Plan. Government and hospitals need to address several issues. Government needs to encourage hospital executives to facilitate planning; consider translating Canadian documents into the Australian context; develop a framework for ethical decision-making in hospitals in a pandemic; develop/promote criteria for critical care in a pandemic; initiate discussions with unions on behalf of hospitals to explore approaches to workforce issues that may arise (such as refusal to work, working when ill, working outside the scope of normal professional duties). Hospitals need to improve pandemic planning communication with other hospitals, particularly within the region or with whom services are shared; ensure hospital-wide representation on pandemic planning committees; consider a 'working document' rather than policy document approach to plans (i.e. utilising job action sheets); and ensure all 18 key actions raised in the TAHSN Guidelines (discussed in the presentation) are addressed.

Influenza surveillance: trying to catch the flu!

Paul Simpson • Melbourne Health

Background: The 2005 Department of Health and Aging (2005) 'Australian Management Plan for Pandemic Influenza' recommends hospitals monitor influenza like illness (ILI) presentations during a suspected pandemic. In response the Infection Prevention & Surveillance Service (IPSS) at Melbourne Health (MH) developed a monitoring system to test the feasibility of hospital based influenza surveillance.

Objectives:

- To develop an influenza surveillance system to identify and assess ILI presentations during influenza season.
- To review compliance with the implementation of isolation precautions of patients admitted with ILI.

Methods: A daily data extraction of:

- Nine selected International Classification of Diseases (ICD) codes from the Emergency Department Information System (EDIS).
- Respiratory polymerase chain reaction (PCR) requests from the pathology database.
- Ward based review of identified patients admitted.

Results: Of the nine ICD codes only five were used with any frequency. Of these five only three of the codes correlated with influenza respiratory PCR requests; these were 'Influenza Viral (J11.1)', 'Fever/Pyrexia of Unknown Origin (R50.9)' and 'Viral Infection (B34.9)'. In particular J11.1 showed close correlation with Victorian General Practitioner Sentinel Surveillance for ILI. Patients coded with J11.1 that also had a respiratory PCR specimen were detected with the following:

- Influenza detected – 67.6%.
- Influenza not detected – 32.4%.

Patients admitted with ILI symptoms, later confirmed by PCR as Influenza, were correctly isolated 64% of the time.

Conclusion: Hospital based monitoring of respiratory PCR requests and ED presentations of selected ICD codes provide a sound process for influenza surveillance. In particular ED presentations of ICD code

J11.1 appears to be a good indicator of community influenza activity. Further work is required to educate healthcare workers to comply with infection control precautions when caring for patients with ILI.

The changing epidemiology of *Clostridium difficile* infection (CDI)

Thomas V. Riley • Microbiology & Immunology, The University of Western Australia and Division of Microbiology & Infectious Diseases, PathWest Laboratory Medicine, Queen Elizabeth II Medical Centre, Nedlands 6009, Western Australia

For 30 years *Clostridium difficile* has been a known cause of diarrhoea in hospital patients in developed countries exposed to antimicrobials. Recently in North America and Europe a highly virulent strain of *C. difficile* (NAP1/PCR ribotype 027) has emerged. Rates of detection of *C. difficile* have risen dramatically and CDI has become more severe. The majority of patients with CDI have been exposed to antimicrobials that reduce 'colonisation resistance' of the large intestine allowing subsequent infection. Acquisition of *C. difficile* is facilitated by its ability to form resistant spores that remain viable in the hospital for long periods. Toxigenic *C. difficile* usually produces two toxins A and B that are the major virulence factors. NAP1/PCR ribotype 027 produces 16 to 23 times more toxins, due to mutations in a regulatory gene tcdC, and an additional 'binary' toxin. These strains are resistant to fluoroquinolone antibiotics and excessive fluoroquinolone use appears to be driving recent outbreaks. There is clear evidence of intercontinental spread and it appears there is now more community-acquired CDI also. It is not know to whether 'epidemic' *C. difficile* has reached Australia. Indeed, little is know about CDI in Australia, however, to reduce unacceptably high levels of morbidity and mortality in humans, improved surveillance is required.

C. difficile experience in the UK

Brett G. Mitchell • Tasmanian Infection Prevention & Control Unit

Background: In 2007, North Glamorgan NHS Trust in the United Kingdom experienced an outbreak of *Clostridium difficile* 027. In total 79 patients were affected over a 17 week period, a 4-fold increase. The Infection Prevention & Control team organised the management of the outbreak. It was the first time ribotype 027 was identified in the organisation and there is no other documented outbreak *Clostridium difficile* 027 in Wales. A large number of multidisciplinary actions were taken in order to control the outbreak. The outbreak received a large amount of media attention with a more recent push for a public enquiry.

Method: A retrospective review of the outbreak was undertaken.

Findings: Patient data, antibiotic usage and outcomes will be presented alongside the range of actions that were taken to control the outbreak. The epidemiology of the outbreak corresponding to specific interventions/actions that were taken will also be detailed.

Conclusion: Following the actions being taken, the rate of *Clostridium difficile* reduced back to baseline levels. The management of the outbreak received an award by the Minister for Health & Social Services in Wales, United Kingdom.

Improvements to Hand Hygiene Compliance Outcomes 24 months after a state-wide role out

Kelvin Heart • Hand Hygiene Victoria
Kaye E. Bellis • Hand Hygiene Victoria

Objective: To assess the Hand Hygiene (HH) compliance rates from 86 participating Victorian public health services following on from the statewide multimodal, hand hygiene culture change program (HHCCP) over a two-year period.

Method: To collect rates of HH compliance using a standardised compliance tool via observational studies collected at a hospital level by trained/validated staff. Observations are collected for total number of Moments observed (Y) and the total number of appropriately performed HH moments (X). Compliance rates are calculated as $X/Y \times 100 = \%$ rate of HH compliance. Data is sent to Hand Hygiene Victoria both electronically and in hard copy on a quarterly basis to allow for collation, verification and feedback.

Results: To date data submitted shows that 74% of the Victorian public health services have reached 55% or above as mentioned by DHS in their 'Start Clean Strategy' The overall state HH compliance rate following the state wide roll out has gone from 47.69% to 58.58% with the rural sector going from 58.44% to 64.99% and the urban sector improving from 40.94% to 54.12%.

Conclusions: Our challenge is to maintain and improve HH compliance and sustainability, by offering timely feedback using local data aided with continual education and awareness by streamlining observational studies and data entry as although these are considered the gold standard are resource intensive.

To determine whether a structured method of documentation positively affected clinical practice to reduce BSI rates

Marija J. Juraja • The Queen Elizabeth Hospital

Background: With increasing BSIs and the unstructured approach to the documentation and care of peripheral intravenous lines, it was difficult to determine whether sepsis occurs at insertion or post insertion line care.

Methods: An IV audit tool from John Hunter Hospital was adapted to capture the following criteria insertion date, inserter, daily observation of the site, line change and recorded documentation within the casenotes. An initial audit was undertaken of documentation within the hospital. The Infection Prevention and

Control Unit with a team of Infection Control Link Nurses undertook the initial review and then three monthly over a 12 month period. The criteria was any patient that had a peripheral IV inserted in ED and had been an inpatient for greater than 48 h was audited utilising the above tool.

Results: Of 135 casenotes reviewed across the hospital 41% of patients had no documented evidence of insertion date and 43% had no documentation on the inserter. Almost 31% of patients had no evidence of daily documentation on their IV site and 72% had no documentation of when their line change was due. Therefore, with no structured documentation it was difficult to determine where sepsis occurred.

Conclusions: Staff had limited underpinning knowledge on the causes of line sepsis and the hospitals responsibility to ensure documentation reflects the patient care. A multidisciplinary structured documentation form was developed that reflected good clinical practice and improved compliance. We believe it has improved documentation and reduced the risk of BSI.

What happens when you find what you are looking for and more!

Jacqueline Kennon • Austin Health
Rhea Martin • Austin Health
Elizabeth Grabsch • Austin Health
Carolyn Tullett • Austin Health

Introduction: Vancomycin Resistant Enterococci (VRE) was first identified in the US and Europe in the mid 1980s and in Australia in 1994.

VRE has now become endemic in many Australian hospitals. While most patients are colonised in their gastro intestinal tract, clinical isolates have been estimated as being 1 : 10 patients colonised with subsequent increases in morbidity and mortality.

Outbreaks of VRE have occurred creating disruption to bed access and increased costs in the delivery of health care.

There are differing opinions throughout Australia on screening patients for VRE, the patient groups selected for screening and in infection control management practices.

Setting: Austin Health is an 850 bed major tertiary health service in Melbourne. Screening of high risk patient populations for VRE has been in place since 2000. In April 2007 there was a significant increase in the number of new patients colonised with VRE compared to preceding months and a corresponding increase in the number of clinical isolates.

Findings: The outbreak predominantly affected two inpatient wards. There was a significant increase in the number of new patients colonised with VRE compared to previous years. During this time there was no change to screening processes. Pulse field gel electrophoresis was conducted on patient and environmental specimens, which supported that cross transmission was occurring.

This presentation will describe the evolution and investigation of the outbreak and the multi-modal control measures used to interrupt it.

Are we preventing healthcare associated infections? Results from the Australian health-care facilities surveillance survey

Marilyn Cruickshank • Austrlian Commission of Safety and Quality in Health Care
Cathryn Murphy • Faculty of Health Science and Medicine, Bond University

Objective: Currently, there is no systematic Australia-wide approach to the measurement of patient harm caused by or associated with health care associated infection (HAI). Australian health care facilities were surveyed between December 2007 and January 2008 to determine what surveillance is undertaken on HAI.

Method: The survey sought data on demographics, staffing levels, surveillance activities, outcomes, processes, technology, information systems and barriers.

Basic demographic data was analysed by frequency. Where sufficient sample size existed data was stratified by state or territory. Detailed text provided under the 'other' option was collapsed into meaningful subcategories according to keywords occurring in individual text responses.

Results: A total of 278 facilities completed the survey. The survey confirmed previous findings of substantial variation in surveillance activity, even between similarly sized or located organisations. There was an absence of any designated infection control staff in 7% of facilities. One third of respondents undertook surveillance data collection in addition to other duties.

Conclusion:

- Standardised and strategic approaches to surveillance HAI is seriously lacking in most jurisdictions.
- Provision of professional time and expertise in infection control varies widely affecting the ability to perform surveillance.
- Most facilities undertake surveillance of bloodstream, surgical site infection, multiresistant organisms, health-care worker immunisation and hand-hygiene compliance.
- Specific deficiencies in current practice include programs for *Clostridium difficile*, paediatrics and antibiotic use.

There is potential for improvement in the consistency of surveillance practice and improved surveillance coverage, which will improve our ability to keep patients safe.

Applying risk management strategies to infection prevention and control across an area mental health service

Winifred L. Boivin • Northern Sydney Central Coast Area Mental Health Services
Carly J. Banner • Northern Sydney Central Coast Area Mental Health Services

Objective: To quantify the potential and probability of infection control risks that may occur in mental health, and to apply risk management strategies to infection prevention and control management.

Methods: An infection control tool was developed to capture the potential infection risks within mental health inpatient units and community mental health centres. This tool includes type of risk, risk description, key impacts resulting from risk, existing controls and additional controls required. Ratings would be calculated based on previous data, potential likelihood and frequency. To ensure communication and staff involvement, on-site visits were made to team leaders/nursing unit managers of Northern Sydney Central Coast Area Mental Health (NSCCH AMH) to discuss these common risks.

Results: Identified potential risks may include infections such as viral gastroenteritis, pertussis, scabies or MRSA, diagnosis failures, poor patient cooperation, inadequate surveillance, sharps handling, 'housekeeping' failures, poor equipment maintenance, reporting failures, infection prevention and control in the home care setting and failures in food handling practices. Although time consuming, travelling to each site within the large geographical area proved beneficial. At the end of the review process each service will be supplied with an action plan developed from the assessed risks. This action plan will then become their annual infection prevention and control audit tool.

Conclusions: Integrating infection prevention and control with risk management processes allows a proactive *v.* reactive approach. The review of services formalised the assessment and comparison of infection control practices, identification of gaps, causes and level of intervention.

The management and containment of MRSA USA300 in a long term care hospital facility in Christchurch NZ

Alison E. Carter • Medlab South, New Zealand

Objective: To describe the control and management of Methicillin Resistant *Staphylococcus Aureus* (MRSA) in a long-term care hospital facility in the Canterbury District Health Board, Christchurch, NZ. first identified towards the end of 2006.

Method: Initial management involved screening and decolonisation of residents and staff who were shown to be positive. This was combined with intensive staff education on containment strategies.

Results: By the beginning of 2007 this particular MRSA had spread and was causing skin infections in several residents. This raised the question of what was different about this organism. When molecular typing became available samples of this organism were sent to the Environmental, Scientific and Research Laboratory (ESR) and were found to be USA300 genotype.

Conclusion: This will discuss the strategies and collaborative steps taken by Infection Control Personnel from Community and Public Health, Canterbury District Health Board and Medlab South Laboratory to manage this organism in the community and at the same time protect the acute care hospital environment.

New epidemic MRSA clone crusade – an overview

Mary-Rose Godsell • Western Australia Country Health Services – Southwest

Background: An outbreak investigation of a new epidemic strain of MRSA (EMRSA) – New York/Japan clone in the South-west region of Western Australia Country Health Services (WACHS) was carried out to contain and control the outbreak, find its likely source and implement systems to prevent the establishment of endemic EMRSA. Nineteen cases were retrospectively case reviewed from August 2002 until June 2005. The outbreak involved three of twelve health-care facilities initially and currently two further ongoing cases in an aged care healthcare facility.

Methods: The investigation included: the initial outbreak management in hospital A, active surveillance, and a retrospective case review and currently an ongoing management in an aged care facility. Education, active surveillance, decolonisation treatment and environmental cleaning are the key methods used.

Results: Several contributing factors; the strain previously being identified and reported as a community strain, documentation and follow-up of the index case who had worked overseas and sixteen different microbiologists consulted for sixteen cases.

Conclusion: A user-friendly MRSA policy for staff, include staff decolonisation and monitoring systems, a designated microbiologist for treatment consultation, Public Health follow-up for contacts and cases in private nursing homes as positive cases were linked. Increased screening of high risk surgical cases would be beneficial. The aged care facility presents an ongoing reservoir and the resident dog was also screened (negative) as part of the strict outbreak management plan as evidence supports animal colonisation and transmission to patients.

Influenza pandemic: are you ready?

Linda Henderson • Department of Health, South Australia
Michelle Courts • Royal District Nursing Service Inc. South Australia

Objective: To provide information and guidance on pandemic influenza and infection control for organizations that provide care for people with disabilities in home care settings. This resource is suitable for any organisation that provides a service to the community.

Background: Providing support in community and home care settings presents workers with several challenges. Inadequate hand hygiene facilities, lack of knowledge, resources and uncontrolled environments. These challenges require solutions to ensure clients have care which is based on best practice and provides a safe environment for employees. In particular non clinical health care workers are not always aware of basic infection control principles.

Creative ways of supporting clinical and non clinical health care workers will need to be considered especially when planning for a pandemic or outbreak of infectious disease. Employers, employees, clients and their families will need information before any outbreak occurs.

An influenza pandemic will affect business continuity within the community health sector. Services may close; some may be modified to accommodate staff leave and all must prepare for containment of the influenza virus.

Method: To address the preparedness for a potential pandemic influenza outbreak and increase knowledge and access to infection control resources a Pandemic Influenza Resource Folder has been developed in collaboration with government and non government departments to assist organisations providing services to the community.

Outcome: The completed folder is now available and provides resources, posters and information regarding pandemic planning and infection control.

Insulin pens – to use or not to use in home healthcare that is the question?

Sue E. Atkins • Royal District Nursing Service

Insulin pens are progressively becoming the device of choice for many diabetic clients. The provision of insulin in cartridge form to suit these pens is increasingly replacing other forms of supply.

There is a common strategy emerging in healthcare in response to an increase in needlestick injuries involving insulin pens. The device is removed and replaced with a needle and syringe with engineered safety features, and insulin is withdrawn from the pen cartridge. This practice is not supported by the manufacturers of these cartridges, nor does it promote client self care.

In the last 12 months the Royal District Nursing Service (RDNS) has provided care to many clients requiring support with their diabetes management, and a large number of these clients currently use an insulin pen. These visits included 7972 activities for assessment, 15,381 for education and 144,595 for insulin preparation and administration. There were 12 needlestick injuries from insulin pens during this time.

RDNS has conducted an analysis of five years of needlestick injury data to identify the reasons for insulin pen needle incidents. A review was also undertaken on several products with the potential to assist with the safe removal of a pen needle for both staff and clients.

This presentation will share with you the outcomes of our investigation into this issue and the strategies we have identified to ensure staff and client safety.

Management of the first reported case of polio in Australia for 25 years – the Infection Control Teams experience

Vanessa Sach • Eastern Health
Martin R. Cutter • Eastern Health

Objective: To describe the experiences of the Infection Control Team in managing a case of polio including staff and patient contact follow up processes.

Methods: The index case presented to the emergency department, a provisional diagnosis of polio was made before admission to the ward, contact isolation precautions were instigated and the Department of Human Services notified. Confirmation of the diagnosis was received 7 days after admission at which point follow up of patient and staff contacts was instigated.

Results: A total of 171 staff were contacted to ascertain if they had been in contact with the index case, 105 staff were subsequently vaccinated against polio. 11 admitted patients were found to have shared toilet facilities with the index case and were therefore offered vaccination – all 11 patients accepted vaccination. Potential patient contacts in the Emergency Department that had not been admitted to the hospital or who had been admitted but subsequently discharged were contacted by the Department of Human Services. One staff contact was excluded from work as a precaution following the onset of a viral illness however no evidence of transmission or further cases was reported.

Conclusion: The infection control measures instigated were largely successful in that there was no evidence of transmission however lessons can be learned and some practices could be improved. Discussion of these issues will inform infection control personnel and may assist infection control personel in managing such cases in future.

Screening following exposure to congenital tuberculosis in a neonatal nursery

Jennifer M. Bradford • Southern Health, Victoria
Elizabeth Gillespie • Southern Health, Victoria
Rhonda Stuart • Southern Health, Victoria

Background: In January 2008, Infection Control were notified that an endotracheal aspirate collected from a neonate who had been in Monash Newborn since November 2007 was smear positive for *Mycobacterium tuberculosis*. Further investigation revealed the neonate had congenital tuberculosis most likely acquired in utero.

Methods: Although the risk of transmission of tuberculosis was considered low, screening using QuantiFERON-TB Gold (QFN) was offered to persons in 'at-risk' groups. This included all neonates, families and staff who had significant or prolonged contact with the neonate, as well as staff who were concerned and requested screening. Screening was performed at baseline and again at 12 weeks. Individuals who had a positive test were sent for a chest X-ray and referred for appropriate management by an Infectious Diseases physician.

Results: Chest X-rays performed on the parents of the index case showed no evidence of active disease. Overall 163 staff and 20 neonates and families were considered 'potentially exposed'. Follow-up of those with positive baseline tests revealed no evidence of active tuberculosis. Repeat testing at 12 weeks revealed no evidence of transmission of tuberculosis.

Conclusion: More than 220 QFN tests and many chest X-rays were performed. Following review of all completed tests, it was concluded that there had been no transmission of tuberculosis as a result of exposure to this case. We conclude that the risk of tuberculosis transmission following contact with a case of congenital tuberculosis is minimal.

Leptospermum petersonii essential oil volatiles as a treatment for invasive pulmonary aspergillosis

Jennie R. Hood • Charles Sturt University
Jenny M. Wilkinson • Charles Sturt University
Debbie L. Burton • Charles Sturt University
Heather M. A. Cavanagh • Charles Sturt University

Objectives: The number of patients at risk for invasive pulmonary aspergillosis (IPA) continues to expand, due to the increase in the occurrence of immunosuppressive diseases and an increasing use of immunosuppressive regimes. Simultaneously fungal resistance to current therapeutics is also increasing. Treatment success rate remains low regardless of the drug used, with the mortality rate of treated IPA approaching 80%; untreated, the mortality rate approaches 100%. *L. petersonii* essential oil has been demonstrated to have strong antifungal activity against *Aspergillus fumigatus*, *A. niger*, *A. terreus*, *A. nidulans* and *A. flavus*.

Methods: A mouse model of IPA infection was utilised to evaluate the activity of *L. petersonii* essential oil volatiles *in vivo*. Both Aspergillus infected and uninfected mice were treated with *L. petersonii* essential oil volatiles for 1 h/day using a novel delivery system.

Results: Colony forming unit counts, chitin analysis and histology all demonstrated that the treatment successfully cleared or significantly reduced an established aspergillosis infection. The treatment displayed little or no toxic effect.

Conclusion: Results obtained to date suggest that *L. petersonii* essential oil volatiles have the potential to be a novel, effective, broad spectrum, non toxic treatment for aspergillosis.

Microbiology content in the undergraduate nursing programme: how much is enough?

Jennifer L. Cox • Charles Sturt University
Heather M. Cavanagh • Charles Sturt University
Maree D. Simpson • Charles Sturt University
Will Letts • Charles Sturt University

Objectives: Microbiology is the fundamental basis of infection control education and practice and an integral part of any health professional education. The minimum acceptable standard or placement of microbiology within undergraduate nursing curricula to ensure adequate retention and application of this knowledge in professional practice remains undefined. Furthermore, the extent to which this knowledge is retained over the duration of an undergraduate nursing course is unknown. A pilot study assessing the comprehension and short-term retention of basic microbiology knowledge and training is being undertaken.

Methods: A pilot-study 26-point knowledge-based questionnaire survey has been administrated to first-year undergraduate Nursing, Pharmacy and Education students ($n = 136$). Both the Nursing and Pharmacy cohorts have just completed their introductory microbiology/infection control course. Survey questions focused on knowledge of clinically important microorganisms, modes of disease transmission and use of universal precautions. The raw data is currently being analysed using SPSS (Statistical Package for the Social Sciences). Statistically significant differences between cohorts will be used to inform future studies.

Results: Preliminary results will be presented.

Conclusions: The current pilot study will be used to inform the impact of undergraduate education on future professional practice in the area of infection control. Future studies will expand on the current study to include final year students just before graduation and cohorts across the university system in addition to determining the role of microbiology knowledge and understanding of graduates in infection control in the healthcare setting.

The globalisation of infection prevention: reading important warning signs

Cathryn L. Murphy • Faculty of Health Science and Medicine, Bond University, Queensland

In 2008 there are more countries with dedicated local and/or national programs designed to reduce or eliminate healthcare associated infections (HAIs) than at any other time in history. Interestingly the global infection control stage is becoming more crowded as non-traditional players including claim infection control expertise at either individual or organisational level. High level campaigns of global magnitude are becoming more common and regional organisations such as the Asia-Pacific Society of Infection Control (APSIC) continue to grow in membership size and influence. Additionally, the WHO has signalled its intention to establish multiple Infection Control Collaborating Centres. More interestingly, some see US-based organisations such as the Association for Practitioners in Infection Control and Hospital Epidemiology (APIC) and the Centers for Disease Control and Prevention (CDC) as continuing to have substantial influence in shaping our profession. Recent provocative US lead initiatives such as the impending change to reimbursement and the promulgation of the title 'Infection Preventionist' will inevitably also influence the growth and direction of Australian infection control. These are important warning signs for Australia and could potentially threaten our previous position as Southern hemisphere and arguably global infection control leaders. This presentation will succinctly summarise recent, critical global infection prevention trends and initiatives as well as make predictions regarding the extent to and speed with which they will impact AICA members.

The road to zero BSIs: how performance improvement methods can serve as your road map

Amy Richmong • Barnes-Jewish Hospital, USA

In this session, Amy Richmond will share how performance improvement methods such as Lean Engineering and Six Sigma can be applied to preventing bloodstream infections. She will tell the story of how one hospital used these techniques to understand and redefine the processes that surround the care of a patient with a central venous catheter, leading to a reduction of risk factors and safer patient care.

AICA future directions

Claire Boardman • AICA President

It has been and exceptionally busy period for the AICA Executive as we continue to engage with external bodies and raise the profile of Infection Control Professionals throughout Australia. We are at an important juncture with respect to our ability to make some crucial advances for our profession.

Credentialling: Recently all members were advised of some important issues regarding the purpose and importance of credentialing and hope that this has stimulated some debate amongst ICP's. The AICA Executive seeks full endorsement and support from all members for this important professional process and encourages ICP's to undertake this vital process.

Launch of national Infection Prevention Awareness Week: In line with the APIC tradition and promotion of International Infection Prevention Week (IIPW) this year 20th–25th October will be the inaugural IPW and the AICA Executive has chosen the theme 'It's in your Hands'. To facilitate IPW activities and programs an IPW page has been added to the AICA website and will grow in future years.

Who are we and where are we going? It is difficult to enter into discussions with external bodies when we lack documented career structure and definitions around the ICP role. We do not use standardised titles, nursing awards and pay structures and there is no consistency in scope of practice across the profession. AICA is exploring several initiatives that will define who we are which will also assist in uniting us as a profession and we watch with great interest the outcomes of Louise Hobbs work regarding Scope of Practice. To articulate the expanding roles of APIC members (USA), the concept of Infection Preventionist has been floated. Perhaps at this point we can debate which collective title is appropriate for use in the Australian healthcare context.

Why do they do it – bad habits are hard to break

Deborough MacBeth • Gold Coast Hospital

The results of numerous studies have identified poor adherence with infection control principles amongst health care providers. Poor practice is a significant factor contributing to healthcare-associated infection which continues to challenge healthcare providers and patients alike with outbreaks regularly reported in the infection control literature. Various strategies have been used alone, and in combination, to improve practice including surveillance and feedback, education and engineering controls. However to date, the impact of clinical culture on infection control practice has not been explored. This presentation will outline the results of an ethnographic study that used participant observation and interviews to explore the influence of clinical culture on infection control practice. The results of the study indicate that sustained practice change is more likely to be achieved if the motivation and impetus for change is culturally based.

Top 5 papers affecting IC work practice

Glenys Harrington • The Alfred

As infection control in developed and developing countries moves into an era of mandatory reporting it is important for Infection Control Practitioners (ICPs) to keep pace with and incorporate the most up to date evidence based information into their infection control programs. The application of such evidence based practices offers opportunities to improve patient safety, reduce the risk of hospital

associated infections and ensure the high performance of an organisation.

Ideally peer review scientific journals should be the primary source of up to date evidence based practice, however Murphy *et al*. in a 1996 survey of Australian ICPs noted at the time that 31.4% of respondents reported not regularly reading any infection control publications and of those who did the majority were reading non peer review publications. A more recent survey of ICPs in the US in 2004 undertaken by Olmsted *et al*. noted that 50% of ICPs were only reading the abstracts of articles published in peer review journals.

Critical appraisal of peer review literature should be a core activity of both the experienced and novice ICPs. Without such appraisal their infection control programs are likely to fall behind. In order to learn from peer review publications the full article should be read paying particular attention to the design of the study in the methods section of these publications.

In this presentation recent peer review publications that are relevant to current infection control clinical practice including research questions relating to why doctors don't wash their hands, influenza vaccination amongst registered nurses and the perioperative antiseptic shower will be discussed.

Infection control in correctional health

John Greenough • St. Vincent's Health

Correctional Health is a unique setting for the Infection Control Practitioner. The scope of practice includes issues common to other settings such as building design, occupational exposure management, hand hygiene, food safety, linen and laundry and outbreak management to name a few.

Some issues in correctional health are more specific namely peer education program for prisoners to educate risk of blood borne virus transmission.

St. Vincent's Health has provided an acute care secure ward for prisoners for many years at the Fitzroy site. John has provided Infection Control Consultancy to St. Vincent's Correctional Health Service at Port Phillip Prison for the past 10 years.

St. Vincent's also have health services at Marngoneet prison in Lara and the Metropolitan Remand Centre in Deer Park.

- Blood born virus issues
- Incidence
- Peer Education Program
- Sexual transmission of Infections
- Tattooing and body piercing in Jails
- Communication with Correctional staff.

Many issues are the same as in other Infection Control Settings:

- Building design
- Hand Hygiene
- Occupational Exposure Management
- Waste management
- Linen and laundry
- Food safety issues
- Outbreak management
- Food borne pathogens?
- Aged care.

Infection control guidelines for dental health practice

Vin Amerena

A varying number of critical and semi-critical procedures are carried out daily in dental surgeries.

Infection control guidelines are designed to prevent the transmission of disease-producing microorganisms from patient to patient, from dental care providers to patients and from patients to dental care providers and their staff.

Protocols and procedures have been developed to minimize the risk of transmission of blood borne and other infectious agents specifically in office based dental practice.

Dr Roseman's presentation will provide a brief overview of the specific requirements for infection control in dental surgeries.

Point prevalence survey of infections in residential aged care facilities in regional Victoria

Pauline Woodburn • Hume Region infection control resource and consultancy service

Australians now have one of the world's longest life expectancy rates and it is predicted that within 40 years the number of people aged over 65 years will almost triple from 2.8 million now to around 7.2 million in 2047.

These unprecedented increases in the number of older people as a proportion of the total Australian population and shifts in the focus and delivery of health and aged care services have led to new challenges.

Infection Prevention and Control will play a major role in long-term care facilities and may require additional resources for prevention and surveillance programs to keep residents out of acute care. Targeted prevention and effective surveillance of infections in residents of such facilities is needed to ensure the quality of resident care. This is mandated by criteria under standard 4.7 of the Commonwealth Aged Care Accreditation standards.

It is recognised that residents in long-term care facilities are at a risk of infection due to multiple co-morbidities, high prevalence of multi antibiotic resistance, high utilisation of antimicrobials and use of indwelling devices.

Facilities all collect various surveillance data on infections but have no way of comparing their infection rates against other like facilities. Unlike acute hospitals in Victoria there is no structure to coordinate a state wide long-term care surveillance system. There is very little published data on infections in Australian long-term care facilities.

Organisations that have more than one campus can compare against each other while some organisations use trend analysis.

In 2007 and 2008 The Rural Infection Control Professionals Group (RICPRAC) collaborated to perform point prevalence surveillance of infections in public long-term care facilities in the five rural DHS Health Regions of Victoria (Barwon, Gippsland, Grampians, Hume and Loddon Mallee Region).

To ensure consistency of data, standard definitions of nosocomial infections were collected using tools produced from McGeer *et al*. as recommended by the DoHA 2004 38.2.2. Results from the 2007 and 2008 prevalence survey will be presented.

Influenza A outbreak in a residential care facility

Megan Reilly • Hands-on IC

Influenza is a frequent cause of epidemic and endemic respiratory illness in residential care facilities (RCFs) which can result in considerable morbidity and mortality in the elderly, and can adversely affect health care delivery due to increased care requirements, staff illness and absenteeism.

In mid June 2007 an outbreak of influenza A occurred in a 107 bed residential aged care facility in Perth Western Australia. A total of 51 (25% attack rate) residents and staff met the case definition for influenza; 37 residents (34.5%) and 14 staff (15%). An active facility-wide infection prevention and control program was in place which included mandatory annual education for all staff, annual influenza vaccination for staff (61% uptake rate) and residents (71%), ongoing respiratory hygiene/cough etiquette campaign, hand hygiene at the point of care and discouraging ill visitors and restricting staff with acute respiratory disease (ARD). It is suggested the high uptake of vaccination amongst staff together with effective infection prevention and control strategies implemented as soon as the ARD outbreak was suspected contributed to the lower attack rate. No deaths or secondary complications occurred as a result of the outbreak, only two residents required hospitalisation and all residents and staff recovered.

The outbreak created several challenges and as a result lessons were learnt. These included that multidisciplinary teamwork and communication are essential elements in the investigation and management of outbreaks; that mutual understanding and respect of public health and residential aged care roles, responsibilities and requirements is necessary; that correct specimen collection equipment hastens confirmatory diagnosis; that resident influenza and pneumococcal vaccine coverage is maximised; and that the impact of physical/social isolation on residents and their families is realised.

Endoscopes and outbreaks: the good, the bad and the ugly

Trish M. Perl, MD, MSc • Professor of Medicine, Pathology and Epidemiology, Johns Hopkins University, Baltimore, MD, USA

Medical devices are being used increasingly in medicine for both diagnostic and therapeutic uses. In this session we will review selected outbreaks that have been associated with both gastrointestinal endoscopy and bronchoscopy. We will review the organisms that have been isolated in these outbreaks and consider these in relation to the problems that have been identified. We will review the problems (disinfection, defective equipment, contaminated cleaning solutions) discovered that led to the outbreak and then consider the lessons learned from these selected episodes. We will identify gaps in knowledge and practice and discuss opportunities for the infection prevention and control community to impact with guidelines and other important policies.

Session objectives:

- Define problems that have led to infections among humans.
- Review common and rare organisms that have been associated with outbreaks.
- Determine considerations for the infection prevention and control practitioner when investigating an outbreak related to these types of medical devices.

Traceability and standards

Jeanette McGibbony • Austmel

The requirement of traceability within a quality management framework has long been used in many industries to ensure safety, product identification and continuous improvement. The Traceability of reprocessed surgical instrument and Medical devices has been developing in response to medico legal issues that may occur due to incorrect processing of these items. The use of Traceability with a quality management system provides the organisation with evidence to show that items were correctly processed before use and which patient received them.

Following the introduction of traceability and accountability systems in the early 1990s implementation in Australian hospitals is now on a wide scale. Standards and Health department guidelines are now being introduced worldwide that reflect minimum tracking requirements. Current traceability systems used in Australian Hospitals fall into three main categories. Batch level, Set level and unique instrument level. The level of traceability implemented by the Hospital should be relative to the level of risk posed to the organisation by the surgery undertaken.

Traceability is being used as a risk mitigation activity and with CJD (Creutzfeld Jacob Disease) incidences occurring at several sites around Australia, traceability is seen as a method of segregating only those patients that are at risk.

Standards requiring of Traceability of sterilised items to patient records at least at a batch level are now in print in the USA, UK, Europe and Australia. The introduction of ISO13485 quality requirements for Medical device manufacturers is now being seen in UK/Europe for some Hospitals. This is not required in Australia but could not necessarily be ruled out in the future. It is anticipated that standards will evolve further in the future as the risks posed to healthcare facilities are constantly changing.

Transporting processed instruments and equipment within area health services

Kerry Crossie • Greater Western Area Health Service

Over the last ten years there have been many changes in Area Health Services within N.S.W and each change has brought it own special challenges. None more challenging than for SSD to meet organisational expectations through standardisation and rationalisation of service delivery. One of the most frequently asked question is 'How do we set up a transport system – where do we start?' Below is a map of the latest change to our Area Health Service within this area there are only seven SSD.

Aim: To ensure the transport systems meet all customer's needs and requirements in a timely fashion while ensuring compliance with all relevant Australian Standards and Health Directives.

Planning and Implementation

- Establish who are all customers both public and private, requiring the services of the Sterilization Unit
- Establish what transport system both public and private, already within the area that could be utilised
- Establish what transport systems can be utilised on short-term, long-term or *ad hoc* basis
- Ensure that customers are no bigger than Ward/Unit size, each facility may have as many as ten customers requiring the service
- Ensure 'Service Contracts' are developed, reviewed and renewed annually
- Establish systems to encouraging customers to offer both formal and informal feedback
- Develop accurate Instrument Procedure Manuals, ensure you fully understand the type and quantities of instruments and equipment that will be required to be transported
- Have a range of transport containers size and shape
- Ensure tracking system will track all customers individual instruments and equipment through the Sterilizing Unit
- Develop simple user friendly pathways for documentation and communication
- Always be flexible, 'the customer is always right', remember you are the service provider
- If there is a break down in the transport system follow the pathways, talk to and lessen to all key stakeholders that has a role in the transport system.

Summary: There are key five elements required for a successfully transport system:

(i) Know your customer, find out what each customers expectations and requirements are.
(ii) Keep transport systems simple and flexible for all key stakeholders.
(iii) Keep accurate documentation, the importance of documentation cannot be underestimated.
(iv) Willingness and commitment by all staff to achieve best outcomes takes time, trust and needs to be worked on daily.
(v) All the systems required to successfully deliver sterile items in a timely fashion is heavily dependent on the human factor. Sterilising Service Managers not only have to totally support all staff within the system but have to be seen to do so.

Medical device regulations and the new AS/NZS4187

Ms Terry McAuley • Sterilisation & Infection Control Consultant, STEAM Consulting Australia

As a result of the Global Harmonization Task Force (GHTF) initiative, Australia has adopted a regulatory framework for medical devices similar to that in place in Europe.

In 2006, the International Organization for Standardization (ISO) joined the GHTF as a liaison body. This furthered an already established process of harmonizing existing European and other pertinent Standards that have been determined to have global relevance, in order to remove technical barriers to trade.

ISO Standards are written as performance or outcome based standards. Therefore in order to reflect many of the significant changes occurring at both an international and local level in regulation of medical devices and the publication of a multitude of ISO standards pertaining to aspects of medical device reprocessing, Committee HE-023 responsible for AS/NZS4187 took a decision to try and create a new edition of AS/NZS4187 written in an ISO framework.

This presentation will examine what a revised edition of AS/NZS4187 may encompass.

Achieving zero VAP rate in an acute tertiary care hospital in Singapore

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H. C. Chew • Department of Respiratory and Critical Care Medicine, Singapore General Hospital, Singapore
Rahman • Nursing Division, Medical Intensive Care Unit, Singapore General Hospital, Singapore
H. L. Tan • Nursing Division, Medical Intensive Care Unit, Singapore General Hospital, Singapore
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S. Taiwanai • Nursing Division, Medical Intensive Care Unit, Singapore General Hospital, Singapore
C. M. Loo • Department of Respiratory and Critical Care Medicine, Singapore General Hospital, Singapore
P. W. Chan • Department of Respiratory and Critical Care Medicine, Singapore General Hospital, Singapore

Aim: Ventilator-associated pneumonia (VAP) is a condition that is associated with high rate of morbidity and mortality, length of stay and healthcare costs. It has been shown that semi-recumbent position for critically ill ventilated patients is the most cost-effective strategy to reduce the possibility of development of VAP. However, the compliance of such practice is a challenge for all health care workers in our unit, an 8-bedded medical intensive care unit in an acute tertiary hospital. In July 2007, a multi-disciplinary team was formed to improve the compliance rate of semi-recumbent positioning for ventilated patients.

Methods: Team members consisted of two intensivists, a nurse clinician, two critical care nurses and a medical student. Rapid PDCA cycles were utilised throughout this quality improvement project. Team members brainstormed the barriers to semi-recumbent position and this was plotted on a cause-and-effect diagram before prioritization using the Pareto Chart. Compliance rate was monitored using a self-designed tool and evaluated after each implementation of each intervention. Ongoing feedback and evaluation results were shared with the staffs in the Medical ICU.

Result: We note an improvement from a baseline of 59.5% to 100% of patients in semi-recumbent position in 3 months. Zero VAP rate was also achieved and maintained since Oct. 2007.

Conclusion: A multidisciplinary approach in quality improvement is effective in implementing and sustaining interventions to reach zero VAP rate in the medical ICU.

Decreasing BSIs – the introduction of the positive displacement valve

Marija J. Juraja • The Queen Elizabeth Hospital

Issue: It was noted in 2004/2005 that there was an increasing trend in hospital acquired Blood Stream Infections (BSI) amongst haematology/oncology patients. This required further investigation as the population group affected were one of several groups that are at high risk for blood stream infections.

Project: A working party was formed to explore problems with line insertion, line management post insertion and patient discharge. The working party believed that issues would quickly be highlighted and that changes could be implemented to reduce or prevent BSIs from occurring.

Results: Inconsistency in the management of PICCs and CVCs was identified across the hospital through auditing the number of follow up calls through Radiology for line management issues (post insertion and on discharge). Post this audit the working party adopted a multi pronged approach.

First, all lines had a positive displacement device added to the catheter end as opposed to a split septum device. Second, all lines inserted utilised the IHA CVC Bundle approach. Third, the introduction of a new skin prep solution for insertion – Chlorhexidine 2% with alcohol 70% replaced Povidone – Iodine for insertion. A new occlusive dressing was used for post insertion line care. Lastly, a one day workshop in the management of peripherally inserted Vascular Devices was offered to all staff across the hospital.

Interestingly nationally and internationally there have been issues identified with positive displacement devices. What we have seen is an overall decrease in BSIs across the hospital from 2.02% in January 2005 to 0.41% in June 2008.

Outcome: The most important impact that these changes have had is the overall reduction in BSIs hospital wide with staff that are more knowledgeable in regards to intravascular line management.

Developing a pathway reduces the need for vascular catheters in CKD

Jayne Amy • North West Dialysis Service, Melbourne Health
Julie Owen • North West Dialysis Service, Melbourne Health

The optimal vascular access for haemodialysis in chronic kidney disease (CKD) has long been recognised as the internally constructed arterio-venous fistula (AVF) with a preference for native vessels[1]. However, maturation of an AVF requires timely pre-dialysis referral to a nephrologist, an appropriately qualified surgeon and suitable

blood vessels. Where this combination fails, a vascular catheter may be inserted to accommodate commencement of haemodialysis. Such catheters are well documented as having a higher incidence of infection, functional failure and morbid complications than AVF and are often accompanied by increased hospitalisation days and higher mortality[2].

In 2000, a review of North West Dialysis Service (NWDS) CKD patients indicated that an unacceptably high proportion were inadequately prepared for dialysis, primarily due to late referral. In response, a major process redesign project was undertaken with broad stakeholder and multidisciplinary participation, resulting in the establishment of a formal pre-dialysis pathway to promote timely registration, education and AVF access creation, thus enabling more patients to be fully prepared for dialysis commencement.

As a result of this project, the proportion of patients registered 'late' decreased from 29% in July–Sept. 2000 (pre-implementation) to 6% in Jan.–Mar. 2004 ($P < 0.01$) with the corresponding median time from registration to commencement of dialysis increasing from <1 month to 14 months ($P < 0.01$). Patients not registered with the service decreased from 57% to 0% ($P < 0.001$). Eighty three percent of patients commenced dialysis with a permanent vascular access in Jan.–Mar. 2004 compared with 24% in Jul.–Sept. 2000 ($P < 0.001$)[3]. When benchmarked nationally, NWDS continues to demonstrate a higher than average dialysis start with AVF as access[4].

In conclusion, through process redesign, more of our CKD patients are known to us before commencement of dialysis, resulting in increased AVF and reduced catheter utilisation.

1. Allon M. Current Management of Vascular Access. *Clin J Am Soc Nephrol* 2007: 2:786–800.
2. Wasse H. *et al.* Arteriovenous Fistula Use is associated with Lower Cardiovascular Mortality Compared with Catheter Use among ESRD Patients. Sem Dial Aug. 29 (ahead of print); 2008.
3. Owen *et al.* Implementation of a pre-dialysis clinical pathway for patient with chronic kidney disease. *Int J Qual Health Care* 2006; 18(2):145–51.
4. ANZDATA Registry Report 2007. ANZ Dialysis & Transplant Registry. Sth Aust. www.anzdata.org.au/ANZDATA/AnzdataReport.htm

Infection control in Indigenous communities

Tom Snelling • Royal Darwin Hospital

What infection control? The infant mortality rate for Indigenous children in the Northern Territory is 3 times the rate for other Australian children. Much of the excess mortality and morbidity is due to communicable diseases. Vaccines have had an important effect in reducing morbidity and mortality for many of these diseases. For other important diseases like endemic diarrhoea, scabies, rheumatic fever and suppurative ear diseases it is unlikely that vaccines will appreciably 'close the gap' of disease burden in the near future and other preventive measures are needed. The link between household crowding and disease will be discussed as well the evidence for non-vaccine measures for disease control amongst remote Indigenous children.

Paediatric respiratory viral epidemics need not cost the earth

Gabby M. Irvine • Princess Margaret Hospital

Each winter paediatric hospitals world-wide experience increased admissions as a result of epidemics of babies & children infected with one or more of eight known respiratory viruses. With an escalated number of infected inpatients the risk of health care associated (HAI) infection is increased. Over the last 15 years the number of paediatric viral respiratory infections admitted to a 200 bed Perth paediatric hospital has varied between 379 and 870 over a five month period. Rates of HAI over this period have ranged from 0.3% to 3.6%.

Successful management of infected patients is dependent upon rapid identification of the causative virus. This enables effective placement of infected patients by single room isolation or cohorting same infections utilising additional respiratory droplet precautions.

This paper will describe a successful program that is dependent on:

- Availability of single rooms;
- An extensive specimen collection service by the virology laboratory;
- Rapid virus detection;
- Testing patients in the emergency department before admission;
- Scrupulous attention to hand hygiene by health care workers and visitors;
- Strict attention to decontamination of shared medical equipment;
- Adequate environmental cleaning;
- Effective cough etiquette by health care workers and visitors;
- An extensive health care worker influenza vaccination program.

The effectiveness of this management program has been measured by the overall HAI rate of these respiratory viruses. Benchmarking with another larger paediatric hospital has demonstrated a significantly lower HAI and subsequent cost saving with the implementation of this program.

TB control issues for children

Tom Snelling • Royal Darwin Hospital

The incidence of tuberculosis amongst young children is a marker of recent disease transmission. While the incidence of TB for most Australian children remains low, overseas-born children, children born to overseas-born parents, and Indigenous children remain at greater risk. The particular risk of young children to the rapid development of life-threatening disease mandates the urgent investigation of exposed infants and the timely provision of preventive isoniazid or multidrug therapy. Guidelines for the investigation and management of TB-exposed children will be discussed.

Managing an outbreak of necrotising enterocolitis in a neonatal nursery – a team effort

Jennifer M. Bradford • Southern Health, Victoria
R. Doherty • Southern Health, Victoria
A. Ramsden • Southern Health, Victoria
D. Kotsanas • Southern Health, Victoria
A. Medhurst • Southern Health, Victoria
J. Courtot • Southern Health, Victoria
Elizabeth Gillespie • Southern Health, Victoria
Rhonda Stuart • Southern Health, Victoria

Background: In May 2008, Infection Control were advised that Monash Newborn were experiencing more cases of severe and fulminant Necrotising Enterocolitis (NEC) than would normally be expected. Eight neonates had been affected since December 2007. As the aetiology of NEC is multifactorial, it was unclear whether these were sporadic cases or a nosocomial outbreak. Over the previous ten years, the incidence of NEC in Monash Newborn had been between 1–8 cases per year with no reason to suspect nosocomial transmission, but when three new cases occurred three weeks later, an outbreak of a preventable infection became a real possibility.

Methods: A multidisciplinary team with representation from Monash Newborn, Infection Control, Infectious Diseases, Microbiology, Hospital Executive and Public Relations was established and met frequently.

Working criteria for cases and contacts were defined and an epidemic curve was developed. Additional contact precautions and cleaning regimes were instituted and a strict cohorting process introduced.

A strategy for investigation of suspected cases through consistent specimen collection and referral of samples to specialised laboratories was implemented. Multiple microbiological investigations, including environmental swabs, blood cultures, nose and throat swabs, gastric aspirates, CSF, urine and stool samples and rectal swabs, were collected.

Outcome: In total, fourteen cases of NEC were identified over a six month period. There have been no further cases since implementation of the most stringent Infection Control measures. To date, following review of all completed tests, no single causative agent has been identified however microbiological testing has identified two potential infectious causes. Confirmatory testing is still pending.

Future plans include the completion of a case control study.

Reaping the benefits of a locally grown safety initiative

Deidre G. Edmonds • Austin Health

In 2004 the question was asked by our Executive, 'how do our occupational exposure rates compare to other hospitals in Victoria.' We subsequently identified that many hospitals were collecting data using different methodology and reporting criteria. Infection control and staff health practitioners were keen to set up a collaborative to enable benchmarking and share improvement initiatives. Austin Health responded and acting as the coordinating centre sought expressions of interest from participants to form the Victorian Blood Exposure Surveillance group (ViBES).

During the first 12 months participants reached consensus on standardised definitions, data management and reporting systems.

ViBES has since evolved from the original 8 pilot sites to a voluntary, non-funded membership of 16 Health Care Services across Victoria. Criteria for participation includes > 100 acute beds and Executive approval.

The power of data.

ViBES data has provided a solid platform to improve safety systems in our health service. The data is valued by staff and the Executive. It is not only used as a performance indicator but is used to support purchasing decisions for safety devices and to educate staff with the aim of reducing exposure incidents. In this presentation we will discuss how Austin Health has used ViBES data to influence change.

From little things big things grow.

Sharps including needlestick injuries in NSW nurses: results from the NSW SIN Study

Ashley Kable • University of Newcastle
Maya Guest • University of Newcastle
Mary McLeod • NSW Nurses Association
Trish Butrej • NSW Nurses' Association

Objectives: To determine nurse reported point prevalence of Sharps Injuries including Needlesticks (SIN) in the past 12 months, factors associated with SIN in NSW and compare data across workplace categories and geographic regions.

Methods: A cross sectional survey was conducted of a representative sample of nurses from the NSW Nurses' Association membership in 2007. The sample ($n = 7423$) was selected representing nurses from five workplace categories.

Results: The reported point prevalence of one or more SIN involving a used sharp by respondents in the sample group ($n = 1301$) was 6.5%. This study suggests that SIN rates in the respondent group were higher in the clinical areas of emergency room, operating theatres, medical and surgical wards, mental health and aged care. No differences were found between workplace or nursing award categories, however a significant increase was observed in remote areas. For participants with SIN, a high proportion reported the injury and less than half believed they were at risk for contracting a bloodborne disease. Overall, participants reported that policies were followed in the event

of an SIN incident; however, some respondents reported recapping after drawing up medications and after administering medications or obtaining blood samples.

Conclusion: This study suggests that SIN prevalence remains a significant OH&S issue for the profession; some clinical areas may have a higher risk. Reporting of SIN incidents is high but less than desired. Policies for following up SIN incidents have high reported compliance, however respondents reported a less than desirable compliance with the no recapping (NSW Health: PD2007_036).

Perceptions of sharps including needlestick injuries and related practices among NSW nurses: results from the NSW SIN Study

Maya Guest • University of Newcastle
Ashley Kable • University of Newcastle
Mary McLeod • NSW Nurses Association
Trish Butrej • NSW Nurses' Association

Objectives: To determine nurses' perceptions of SIN (sharps injuries including needlesticks) and related practices in the workplace.

Methods: A cross sectional survey was conducted of a representative sample of the membership of the NSW Nurses' Association membership in 2007. The sample ($n = 7423$) was selected representing five workplace categories.

Results: The respondents ($n = 1301$) reported a range of organisational practices related to working with sharps including: working in sharps safety oriented organisations, routine Hepatitis B vaccination, and provision of sharps disposal containers at point-of-use locations.

Safety Engineered Devices (SEDs) were reported to be available and perceived to be effective by respondents and reported they preferred to use these devices. Overall, just over half reported that nurses were involved in selecting and evaluating SEDs however, executive nurse managers were more likely to have this opinion than nurses.

The study suggests that the major reasons influencing nurses to report an SIN were: fear of acquiring hepatitis B, C or HIV, need to have risk assessed, and being informed about blood test results. Less than half reported that SIN data was routinely provided to staff however, nurses' views of this practice were significantly different to the views of executive managers.

Conclusion: Overall, nurses' reported practices and perceptions are consistent with NSW Health Policy Directives for provision of sharps disposal containers, use of SEDs, product evaluation, reporting of injury data (PD2007_052); hepatitis B vaccination, reporting of SIN (PD2005_311). There is scope for some of these practices to be improved.

Effect of mandatory HCW policy implementation – friend or foe

Smollen • Paul, St Vincents Hospital, Sydney, Australia

In February 2007 the NSW Health Department released Policy Directive 2007_006 'Occupational Assessment, Screening & Vaccination Against Specific Diseases'. This policy now made certain vaccinations and disease screening mandatory for employment within NSW public hospitals. This policy modification has been the largest single change to the recruitment process in NSW since the introduction of criminal record checks. This paper will outline those policy changes and discuss the implications and limitations of implementing the policy within a tertiary referral hospital. The paper will also explore the impact the policy changes have had on the recruitment process. The author will also offer some thoughts as to what future directions are required to sustain this policy.

Results of a statewide respiratory mask fit testing project

Irene Wilkinson • Department of Health, South Australia

Background: An essential item of personal protective equipment for protection against infectious respiratory diseases is a disposable high filtration respiratory mask (P2 or N95 classification or better). These masks require individual fit testing to ensure effective protection.

Objective: As part of South Australia's pandemic preparedness planning, funding was made available to achieve successful fit testing of the maximum number of health care workers deemed to be at highest risk of exposure during a pandemic. The project ran from December 2006 to July 2007.

Methods: Quantitative fit testing was performed using several PortaCountU instruments by project officers who received training through a program coordinated by the Infection Control Service. Concurrently an evaluation survey was completed by both the operator and the subject at the conclusion of each fit testing session. This survey gathered information on occupational category, facial characteristics, previous respirator experience and training, previous qualitative fit testing results. Three brands of mask in two sizes were supplied for testing.

Results: A total of 6970 staff were successfully fit tested by July 2007, representing ~68% of the highest risk category staff. There were ~5000 pairs of questionnaires available for analysis (5099 operator and 4928 subject). The majority tested were nurses (52%), 12.8% were doctors, 7% allied health and 28.2% other categories. Overall, 89% of staff were successfully fitted, 79% on the first attempt, 13% requiring a second attempt, and 8% requiring three or more attempts with a different size or brand of mask. There was no association between a successful fit and prior experience in using a mask. There was some evidence of learning over time for the operators.

Conclusions: Using a multivariate Poisson regression model, the best predictors of a successful fit were: nose shape, gender, occupational category, work area and mask brand and size.

Healthcare Associated Infection Implementation Advisory Committee

Marilyn Cruickshank • Australian Commission on Safety and Quality in Health Care

Over the next two years several of the Commission's initiatives involving surveillance, hand hygiene, and education of health workers in relation to the Infection Control Guidelines will be implemented across Australia. After extensive consultation with a wide range of stakeholders from the Australian infection control community the Commission recognised that achievement of its overall HAI program goal is almost entirely dependent on the ability of Infection Control Practitioners (ICPs) to implement the Committee's recommended strategies. Surveys and workshops of ICPs undertaken by the Commission have shown that there is disparity in skills and resources between experienced and beginning ICPs and between larger metropolitan hospitals and rural centres. There is a paucity of information about the skills and resources of ICPs in the private sector, in aged care and in residential health care settings. After consultation with AICA, the Commission decided to actively engage with the AICA membership at a facilitated workshop in Hobart on 26 September 2007. As a result, the HAI Implementation Committee was formed. It brings together clinical, academic, professional, research and government expertise with geographical representation across Australia to provide technical input and expert advice to the Commission from the perspective of implementation. A series of initiatives have been developed by the HAI Implementation Committee to provide ICPs with skills and resources to engage and educate clinicians, administrators and healthcare consumers in adopting a collective HAI-prevention mindset. The initiatives are inter-linked, generic and for the most part designed to be implemented at the organisational level. Two pieces of work on the scope of practice have been commissioned that will lay the foundation for the development of resource and/or training packages for those who undertake infection control and prevention outside major hospitals.

Antibiotic stewardship

Celia Cooper • Children, Youth & Womens Health Service

The Australian Commission on Safety and Quality (ACSQ) in Health Care has established the Healthcare Associated Infection (HAI) program with the aim of '. . . achiev(ing) a measurable reduction in healthcare associated infection' by taking a national and systematic approach to infection control, hand hygiene, healthcare associated infections and antimicrobial resistance including antibiotic stewardship.

Antibiotic stewardship is one of the five key initiatives developed by ACSQ to reduce the rates of HAIs. The Antibiotic Stewardship Committee is the most recently established HAI committee having its first meeting on 20th August 2008. The committee has 12 members including infectious diseases physicians, pharmacists and ACSQ staff members. Terms of reference have been established. At the first meeting, the committee agreed on a work plan identifying 10 areas to be targeted to improve national stewardship outcomes. Individual committee members have taken responsibility for one or more key areas.

On 11th September, the committee hosted an Antibiotic Stewardship forum attended by the key note speaker Dr Ian Gould, a medical microbiologist from the Aberdeen Royal Infirmary, who spoke on antibiotic stewardship from the European perspective. The workshop was attended by ~50 jurisdictional representatives from all Australian states.

The committee will next meet towards the end of November.

Brave new world-antimicrobial resistance

Trish M. Perl, MD, MSc • Professor of Medicine, Pathology and Epidemiology, Johns Hopkins University, Baltimore, MD, USA

In this session we will discuss the increasing prevalence and incidence of organisms resistant to multiple antibiotics that are emerging in healthcare. We will focus on bacterial agents that are emerging as problem pathogens in healthcare settings. We will discuss concepts of transmission and then focus on options and considerations for prevention and control. While the data supporting individual prevention strategies will be reviewed, I will promote the idea that prevention and control requires multidisciplinary approaches. Finally, I will close with a call for research. I will identify areas where there is a desparate need for the infection prevention and control community to design studies to answer these questions.

Session objectives:

- Describe emerging antibiotic resistant bacterial organisms in healthcare.
- Review incidence and prevalence data worldwide.
- Provide a review of infection prevention and antibiotic management practices that should be considered to prevent transmission of these problematic organisms.

Spreading the word—diffusion theory in infection prevention and control

Trish M. Perl, MD, MSc • Professor of Medicine, Pathology and Epidemiology, Johns Hopkins University, Baltimore, MD, USA

In this session, we will discuss how ideas spread throughout social networks and what that means for infection prevention and control strategies. Concepts such as innovation, take off point (tipping point),

diffusion will be defined. Then, we will discuss examples of how quickly or slowly ideas can spread and what are the characteristics of spread. We will also look at the personality characteristics of innovators, early adopters, laggards and others. Finally, we will review examples of how this social theory construct applies to infection prevention more and more.

Session objectives:

- Define concepts pertinent to diffusion theory such as innovation, diffusion, takeoff point, etc.
- Review examples of how ideas/innovations diffuse through social networks.
- Describe the characteristics of organizations and how they adopt innovation.

Medical waste management in hospitals in China: a case study in Shandong Province

Ruoyan Gai • Department of Health Policy & Planning, Graduate School of Medicine, The University of Tokyo, Japan
Lingzhong Xu • Institute of Social Medicine and Health Services Management, School of Public Health, Shandong University, China
Huijuan Li • Institute of Social Medicine and Health Services Management, School of Public Health, Shandong University, China
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Jiangjiang He • Institute of Social Medicine and Health Services Management, School of Public Health, Shandong University, China
Wei Tang • The University of Tokyo Hospital, Japan
Chushi Kuroiwa • Department of Health Policy & Planning, Graduate School of Medicine, the University of Tokyo, Japan

Medical waste management is an important issue of infection control in hospitals. In China, the information on the implementation of the management system in hospitals based on the national regulatory framework was inadequate. This study is carried out by cooperation between the University of Tokyo, Japan and Shandong University, China. Our study is the first systematic study to investigate the current situation in different levels of hospitals since 2003, when the national regulations and standards for medical waste management have been implemented, in order to reduce risks of inappropriate medical waste handling to occupational safety and public health. We visited 23 general hospitals in both urban and rural areas of Shandong Province, China and interviewed infection control officers by a semi-structured questionnaire, designed based on the national regulations and WHO's rapid assessment tool. The medical waste generation rate was 0.744 kg/bed/day, 0.558 kg/bed/day, and 1.534 kg/bed/day, in tertiary hospitals, urban secondary hospitals and county hospitals, respectively. Most urban hospitals established the management system based on the national regulatory framework, in terms of handling practices, occupational safety, and internal policy & administration. On the other hands, there remained several problems in county hospitals, such uncompleted segregation, insufficient equipment, unsanitary storage place, lack of records, deficient protective measures, unsafe on-site disposal, etc., which could be mainly attributable to deficient financial capacity. The study revealed the need of administrative monitoring and financial subsidy to county hospitals.

MRSA – what sites should we screen?

Brett Mitchell • Tasmanian Infection Prevention & Control Unit

A review of positive MRSA body screen's over a 12 month period in a Trust in the United Kingdom (Nth Glamorgan NHS Trust) was undertaken. The aim was to determine the most common site of colonization and to investigate any correlation between various body sites screened for MRSA.

Nth Glamorgan NHS Trust previously used five body sites to screen for MRSA colonization whereas the majority of NHS Trust's in the UK screen three sites. Current MRSA guidance from the Hospital Infection Society, also supports this notion. Nth Glamorgan NHS was in a unique position to review its current procedure to look at incident, trends and any correlation between sites.

The aims of the study were to:

- Identify rates of colonisation from the five sites previously used for the screening of MRSA.
- Identify any correlation between colonized sites.
- Identify any further trends of colonisation including the location of the patient.

A total of 667 patients were initially included in the study and after exclusion criteria applied 297 patients (Group B) remained. In both group A & B, the most common site of colonisation was the nose (32%).

The results of the second aim found a significant correlation between the perineum and groin ($P = 0.0005$).

The third aim was to identify any other trends associated with colonisation of MRSA. There is a statistically significant association between one hosptial and throat colonisation ($P = 0.019$) and there is a statistically significant reduced incidence of groin colonisation in the community ($P = 0.011$).

Reducing MSSA/MRSA bacteraemia rates

Brett Mitchell • Tasmanian Infection Prevention & Control Unit

In Wales (United Kingdom), the Welsh Healthcare Associated Infection Programme (WHAIP) team are responsible for

implementing the Wales Healthcare Associated Infection Strategy (2004). One aspect of the strategy is surveillance which includes Staphylococcus aureus bacteraemia (including MRSA). MSSA & MRSA are publicly report on a named hospital (Trust) basis.

This poster aims to demonstrate a multidisciplinary, multi faceted approach to reducing MRSA/MSSA bacteraemia rates, using the Wales Healthcare Associated Infection Strategy as the catalyst for such an approach.

Four interventions at North Glamorgan NHS Trust were instigated, namely a review of the MRSA policy, review of the insertion and maintenance of peripheral cannulas, new cleaning procedures and the introduction of a scorecard/reporting system for infection control in all clinical areas. The implementation was supported by work being undertaken by the Director of Nursing & CEO.

The number of cases of MRSA/MRSA bacteraemia fell after the introduction of the interventions. The poster demonstrates a reduction in SAB (including MRSA)in both actual numbers and as a rate (per OBD). One result demonstrated is a reduction of SAB from 30 per 100 000 OBD's to 13 as a direct comparison (per quarter).

ViBES 3 years on . . . and counting

Sue M. King • Victorian Blood Exposure Surveillance (ViBES)

The Victorian Blood Exposure Surveillance (ViBES) has now been operational for over three years. It currently totals 17 Health Care Services (HCS), comprising of 11 metropolitan and 6 regional.

ViBES currently only accepts hospitals with 100 acute beds or more. The group was borne out of interest in establishing a working group to explore options for benchmarking reported occupational exposures to blood and body fluid.

The aim of this group was to facilitate standardised methods for exposure reporting, to benchmark occupational exposure rates and to share information relating to post exposure management, high-risk activities, exposure prevention and use of safety devices.

There is now 3 years of data which is about to be published and the group would like to present this data collected and analysed from 2005 to 2008.

Data is collected via our individually designed Access Database. Each HCS is responsible for collecting their own data on Occupational Exposures and fowarding it quarterly to the Data Manager. The DM collates and generates the de-identified data into graphic form.

Meetings are held quarterly where reports are discussed and information shared amongst participants.

A survey of nurses' perceptions and product choices of the infected wound

Ann Marie Dunk • Research Centre for Nursing and Midwifery Practice, ACT Health
Judith Barker • Community Health, ACT Health
Wendy Beckingham • Infection Prevention and Control, Canberra Hospital
Di Dreimanis • Infection Prevention and Control, Canberra Hospital
Liz McNally • Staff Development Unit, ACT Health
Jan Taylor • University of Canberra

Little is known with regard to how clinical nurses use clinical descriptors to diagnose infected wounds. The aim of this research was to investigate the language nurses use to describe four infected wound types using descriptors known as 'clinical indicators', the products to manage these specific wounds and the educational resourses used to inform their wound management and infection prevention and control practices. The 'clinical indicators' were based on the European Wound Management Association Position Statement (2005).

A descriptive exploratory study was used to investigate this question in the form of an anonymous voluntary survey. Ethical approval was given from ACT Human Research Ethics Committee. Nurses from 22 clinical areas within Canberra Hospital completed the survey. Data was exploratory in nature and generated nomimal data, therefore non-parametric statistical techniques were used for analysis.

Response rate was 17% ($n = 178$), with a spread from all clinical areas with a range of nurse classifications. Years of experience ranged from less than one year to 35 years with an adverage of 13 years. Clinical nurses are failing to clearly describe infected wound types using appropriate terminology or descriptors as determined by wound experts. Nurses are more likely to use peer discussion when making decisions regarding managing infected wounds and have even more difficulty choosing the appropriate wound dressing types.

Best practice in both wound management and infection prevention and control requires the use of assessment tools, documentation and communication through education for improving patient outcomes when faced with an infected wound.

An Aussie adaption of a WHO hand Hygiene Initiative

Kaye E. Bellis • Hand Hygiene Victoria
Kelvin Heard • Hand Hygiene Victoria

Objective: To capitalise on the momentum gained from the Victorian Quality Council (VQC) Hand Hygiene (HH) project and to participate in the World Health Organisation (WHO) Mutlimodal Hand Hygiene Improvement Strategy, Hand Hygiene Victoria adapted and introduced the new 'Aussie 5 Moments' tool. This presentation describes the new 'Aussie 5 Moments' tool.

Method: A modified tool was adapted from the previously used VQC audit tool and the newly published WHO audit tool to become user friendly in Australia. The adaptation to the 'Aussie 5 Moments' audit tool has been designed so that the previously collected data can still be compared where possible.

Results: The 'Aussie 5 Moments' audit tool has been designed with fewer data fields, but still maintaining the same outcome of hand hygiene compliance rates. The new tool allows for easier data entry, timely local feedback, and simple, effective reports.

Conclusions: The tool is currently being used for the latest audit by the 86 participating Victorian public health services. The feedback thus far has been positive as the hospitals finalise their 3rd audit for 2008. Sustainability is an ongoing issue and maintaining or heightening hand hygiene awareness and compliance rates is our biggest challenge. The development and introduction of the 'Aussie 5 Moments' into a statewide user friendly package enabling benchmarking with affiliated WHO countries should help HH become a permanent key performance indicator for all Victorian public health services.

Developing infection control competencies for newly graduating nurses in Australia and Taiwan

Lesley L. M. Liu • University of Wollongong/Chang Gung Institute of Technology, Taiwan
Patrick A. Crookes • University of Wollongong
Janette Curtis • University of Wollongong

Nurses hold a major responsibility for infection control as part of their daily health care activities with their patients. In order to ensure that safe practice is provided in the care of patients, it is imperative to develop competencies of infection control during the training of graduate nurses. However, little research has been undertaken to identify the essential infection control competencies that novice registered nurses require. The study aims to establish the essential competencies required for the new graduate nurses in Australia and Taiwan by using a Delphi survey based on a consensus of expert opinion. The study draws on the experiences of infection control experts and nurse educators. It is expected that by the time of this presentation, ~100 participants will be recommended by the Heads of Schools of Nursing and the presidents of infection control professional bodies in both countries. Three rounds of questionnaires together with controlled feedback will be used in this study. Participants will be asked to provide their opinions regarding the development of competencies, in accordance to its applicability and importance as essential infection control competencies for newly graduating nurses. After completing survey, we will have obtained a consensus of experts' opinions on infection control competencies for newly graduating nurses in Australia and Taiwan (and, indeed, in other countries). The results of this study are expected to make a contribution to the further development in international health care. The benefits for nursing/nurse education as well as other healthcare practitioners are hopefully observed.

Culturally appropriate isolation signage in central Australia

Melinda L. Griffiths • Alice Springs Hospital

Approximately 85% of patients at the Alice Springs Hospital are Indigenous. Many languages are spoken throughout Central Australia and English is often a second or third language. The isolation signage traditionally used at the Alice Springs Hospital, requires careful reading in order to understand what personal protective equipment needs to be used in order to comply with Isolation Room protocols.

There is no doubt that Isolation Room signage should give clear instruction to anybody that may enter the room. A practical way to achieve this is by using pictures to identify the type of personal protective equipment that is needed. Whilst many facilities already use this type of system, it was decided that a culturally appropriate and generic Isolation sign would be 'user friendly for all'.

Objective: To improve compliance to Isolation Room protocols through the use of signage using pictures of personal protective equipment with a dot painting background.

Method: After discussions and using specifications given, a basic sign was developed with the assistance of a Medical student undertaking a clinical placement. Alterations to the original work have been made to enhance its effectiveness in the workplace.

Results: After the initial trial period feedback will be sought from Aboriginal Health Workers, Aboriginal Liaison Officers, other Alice Springs Hospital staff members, and patient visitors.

Conclusion: the sign will continue to be a work in progress. Product changes and any other changes deemed necessary will result in new signs being printed for a minimal cost.

Incidence of nosocomial infections in the picu

Gentian Kasmi • Laboratory Department, Service of Microbiology, University Hospital Center 'Mother Tereza Tirana, Albania, Albania
Irena Kasmi • Pediatric Intensive Care Unit Hospital Mother Tereza Tirana, Albania, Albania

Objective: To describe epidemiologic profile of NI in PICU and relationship with extrinsic risk factors.

Methods: A prospective surveillance study was performed in PICU at UHC in TIRANA during one year period 2007–2008.CDC criteria was used as standard definitions for NI.

Results: 484 patients were admitted with mean age of 30.4 months (0–168 months) 405 nonsurgical and 79 surgical. The incidence rate of NI during the study period was 10.5%. The total number of NI was 52. 42

patients had 1 episode of NI and 5 had 2 episodes. 19 surgical patients (36.52%) and 33 nonsurgical (63.48%) had NI. NI were most encountered in urinary, respiratory tract, blood stream, with a rate of 4%, 3%, 1.4% respectively. The etiologic profile was: gram negative 71.15%, gram positive 23.1%, fungi 5.75%. *E. coli* and Pseudomonas were the most frequent among gram (−) and Enteroccocus and *Stafilococcus epidermitis* among gram (+). 30% of *E. coli* were resistant to aminopenicillines and bactrim and 30% of Pseudomonas to quinolons and aminoglukozides. Mortality was not influenced by NI. Both urinary and respiratory tract infections were strongly associated with the use of urinary catheters, nasogastric end endotracheal tubes. The length of hospital stay in NI patients was longer than in noninfected (19.5 and 3.6 days, $P < 0.01$).The severity of illness could account for part of this delay.On the other hand with the increasing length of hospital stay the infection ratio increases.

Conclusions: This study highlights NI influence in hospital stay, morbidity and mortality in the PICU.

Wash, wipe cover . . . don't infect another! The genesis of a Statewide Hand & Respiratory Hydience Campaign

Linda Henderson • Department of Health, South Australia
Neil Charter • Department of Health, South Australia
Christine Hunt • Eldercare, South Australia
Irene Wilkinson • Department of Health, South Australia

Background: Hand hygiene has long been recognised as one of the most important ways to prevent the spread of infectious disease. Despite this, compliance with the relatively simple act of hand decontamination is poor.

The World Health Organisation (WHO) recommends that Governments should consider provision of funded, coordinated programmes to improve hand hygiene compliance within Health Care facilities, and to also promote hand hygiene at the community level. Accordingly, the Safety & Quality Unit of the South Australian Department of Health have funded a project to develop a statewide hand and respiratory hygiene awareness campaign. This was developed based on the message: 'Wash, Wipe Cover . . . don't infect another' a combined message that focuses on both hand and respiratory hygiene.

Method: Two project positions were created in April 2007 to scope and plan the campaign. It is broad in scope, and is aimed at all levels of community and health care, including key target audiences of schools, business, government agencies, sporting groups, and health care workers in all settings, including Aboriginal Health. The campaign is being delivered in phases, using established distribution networks, with planned evaluation of each phase.

Outcome: A comprehensive communications plan has been developed to assist in achieving the aims of the campaign. A suite of printable materials have been developed and distributed in hard copy and electronically. An evaluation of the effectiveness of the materials is in progress.

Demystifying the disposable vs reusable sharps container debate

Cathryn L Murphy • Faculty of Health Science and Medicine, Bond University, Queensland

Background: One of this year's loudest and as yet unresolved infection prevention debates has been the extent to which disposable *v.* reusable sharps container better prevent needlestick injuries (NSI). Whilst the debate is not new it is both long and enduring. Its conclusion is also becoming more crucial as bodies such as Standards Australia and the National Health and Medical Research Council prepare guiding directives. More importantly failure to resolve this question may be placing Australian healthcare workers (HCW) at unacceptable and unnecessary risk for NSI.

Objective: The purpose of this presentation will be to present a balanced meta analysis of available evidence from both scientific and grey literature in regard to the most important NSI prevention aspects of disposable and reusable sharps containers.

Methods: This presentation will detail the epidemiology of sharps container related injuries and discuss demonstrated prevention strategies. In addition it will highlight user concerns raised in relation to both container types. Possible economic and environmental issues relating to both technologies will be considered and a brief description given regarding processes used to craft global Standards.

Results: Following this presentation the audience will better understand the 'real' issues relating to sharps containers and therefore be better prepared to make well informed scientific and economic evaluations of both types of technology.

Conclusions: The Australian infection control community urgently needs an answer to this debate as prevention of NSI is a fundamental right of every Australian HCW. More importantly it is a fundamental obligation of every Australian infection preventionist.

Intravenous Therapy – expert nurses develop IV therapy assessment tools for improved bedside IV device management

Fiona Stewart • CNC Infusion Management, Westmead Hospital, NSW
Bobby Kemp • CNC IV Access, Sir Charles Gairdner Hospital, WA
Sue Gonelli • Vascular Access nurse, Alfred Hospital, VIC

We are a group of Senior nurses with intravenous (IV) expertise, with representation from 4 different states, who have been meeting annually for the past four years at a dedicated IV forum, (sponsored through Smith & Nephew). In addition we liaise through regular teleconferences and emails. Our key goals were to produce educational materials to improve Australian vascular access practices

as well as increase awareness of associated complications. The product of these meetings has been the development of IV resource tools that will assist nurses with day to day IV management at the bedside.

These tools will assist clinical nurses with peripheral IV cannulation, central venous catheter (CVC) & peripherally inserted central venous catheter (PICC) management.

We would like to present these tools which also include audit, troubleshooting & nursing care plans sections. The audit section may be particularly useful for infection control nurses.

A 'legislated' infection control management plan

David J. Gunderson • Centre for Healthcare Related Infection Surveillance and Prevention

In December 2005 legislation was passed in Queensland, Australia which for the first time provided a regulatory framework for infection prevention and control. The Public Health Act (Queensland) 2005 provides instruction on the new requirements for infection control in health care facilities and imposes a statutory duty on persons involved with the provision of declared health services to take reasonable precautions to minimise the risk of infection.

The duty is reinforced by the requirement that a health care facility have an Infection Control Management Plan for the facility. The Infection Control Management Plan must identify the infection risks at the facility and detail the measures to be taken to prevent or minimise the risks and to train staff in applying the plan.

Facilities requiring an Infection Control Management Plan were required to have one in place within 6 months of the 15 December 2006 commencement date. New facilities were required to have an Infection Control Management Plan in place before providing any declared health services.

The Centre for Healthcare Related Infection Surveillance and Prevention (CHRISP) was delegated the responsibility and legislative authority to implement the act and provide the mechanism for compliance. An online environment was developed to assist health care facilities in assessing their risk of infection and the tools for developing an Infection Control Management Plan in order to minimise and prevent infection incidents.

Promoting safety cannulation

Elizabeth E. Gillespie • Southern Health
Jennifer M. Bradford • Southern Health
Rhonda L. Stuart • Southern Health

Background: Southern Health has promoted safety cannulae since 1996, however there has been resistance in some groups of healthcare workers (HCWs). In 2006, when a patient known to have HIV required cannulation, the HCW went to another area and collected a non-safety device for cannulation. During cannulation, another HCW sustained a needlestick injury. In response to this, Southern Health implemented additional safety measures to minimise a recurrence.

Methods: A working party developed a protocol specific to safety devices – intravenous cannulae. The working party of clinicians reviewed the current safety cannulae for HCW acceptability. They extended their review to other safety devices such as safety needles, safety needle and syringe, safety butterfly needles. Decisions were made about the choice of safety devices to be introduced to replace the non-safety equivalent. A clinical indicator was developed to measure safety device use *v.* non-safety device use against the total occupational exposures reported and the percutaneous occupational exposures reported.

Results: Non-safety cannulae use decreased from 28,000 per quarter in 2005 to 8,000 per quarter in 2008. The number of IV cannulae occupational exposures reduced from 4 incidents or 0.029 per 1000 OBDs in Q4 2005 to 1 incident or 0.006 per 1000 OBDs in Q4 of 2007.

Conclusion: As safety cannulae use increases, associated occupational exposures decrease. Southern Health will continue to replace non-safety devices with safety devices with an expectation that the number of percutaneous occupational exposures will continue to decrease and HCW safety will be enhanced.

Vaccine preventable diseases in a combined Paediatric/ Adult Intensive Care Unit

Anita Lovegrove • Southern Health
Victoria Hamilton • Southern Health
Elizabeth Gillespie • Southern Health, Victoria

Background: Challenges arise in raising staff awareness to the vulnerability of the unvaccinated paediatric patient. This is particularly relevant in the setting of a patient population from the neonate to the elderly in a combined Adult & Paediatric Intensive Care Unit.

The lack of mandatory reporting of healthcare workers immune status pre-employment means considerable resources are required to facilitate contact tracing in the event of transmission.

Method: We compared the staff health database records pre and post education sessions. Education sessions were held on the staff health service of the organisation including free vaccinations, and the role of the healthcare worker in the prevention and transmission of vaccine preventable diseases in their unique environment. A survey was undertaken via questionnaire of staff perceptions of the current service and their expectations of that service.

Results: An increase in the uptake of staff health screenings and vaccinations in both existing and new staff was demonstrated. Details of the improved vaccination uptake will be presented.

Conclusions: There was an increased awareness to the vulnerability of the neonate patient to vaccine preventable diseases in the setting of a combined adult and paediatric ICU. The increase in staff understanding engaged their desire to complete the staff health documentation voluntarily. We concluded that staff awareness of the vulnerability of the neonate/paediatric patient prompted action through a sense of duty of care.

Improving infusion management at the bedside

Fiona J. Stewart • Westmead Hospital, Sydney, NSW
Bobby Kemp • Charles Gardiner, Perth, WA
Sue Gonelli • The Alfred Hospital, Melbourne, Vic

Improving infusion management at the bedside was the aim of senior intravenous (IV) nurses when they met each year to develop IV resource tools. Their expert knowledge came from 4 different states, all had in excess of 10 yrs IV therapy experience. The opportunity to meet each year for 4yrs was made possible by Smith & Nephew who also facilitated ongoing teleconferencing to keep the group in direct communication. Teleconferencing across Australia (with up to 3 different time zones) proved an especially useful mechanism to update each other on resource tool evaluations. All drafting & redrafting of documents were done via email.

This poster will highlight the tools developed including peripheral cannulation, central venous catheter & peripherally inserted central venous catheter management. Plus an auditing tool that may be of particular use for infection control nurses.

Beating preventable bloodstream infections

Elizabeth E. Gillespie • Southern Health
Jennifer M. Bradford • Southern Health
Mardi Tempest • Southern Health
Carmel Scott • Suthern Health
Penelope C. Leszkiewicz • Southern Health
Natalie Williams • Southern Health
Elizabeth Orr • Southern Health
Jill M. Wilson • Southern Health

Intravascular devices (IVD) are the most common cause of blood stream infections (BSI). More than 75% of BSI's are preventable with each *S. aureus* BSI estimated to cost A$20,000 in additional healthcare costs.

At Southern Health, we reviewed compliance with our intravascular device protocol. We developed an audit tool and audited every clinical area for compliance with the protocol. The infection control team produced a DVD for inclusion in an interactive inservice education package.

Compliance with the IVD protocol was variable between units and facilities. However, each clinical area now has their own area benchmark, a facility benchmark and a Southern Health wide aggregate to exceed.

IVD auditing is now incorporated into the annual clinical auditing tool and bacteraemia rates are being closely monitored. IVD auditing is part of a multifactorial approach to decreasing hospital acquired bacteraemias.

Healthcare associated *Staphylococcus aureus* BSI – a statewide mandate

Rebecca L. McCann • Healthcare Associated Infection Unit, Communicable Disease Control Directorate, Department of Health Western Australia
Helen Van Gessel • Healthcare Associated Infection Unit, Communicable Disease Control Directorate, Department of Health Western Australia
Allison Peterson • Healthcare Associated Infection Unit, Communicable Disease Control Directorate, Department of Health Western Australia
Leigh Goggin • Healthcare Associated Infection Unit, Communicable Disease Control Directorate, Department of Health Western Australia

Staphylococcus aureus blood stream infection (SABSI) is a common and serious cause of morbidity and mortality worldwide. In addition to adverse outcomes for patients they contribute significantly to the financial burden of healthcare costs. SABSI related to healthcare occur as complications following surgery or insertion of medical devices for both inpatient care and the diverse range of treatments offered by home or outpatient services.

Healthcare associated SABSI has been flagged as a signal or critical event by most Australian jurisdictions. In more recent times there has been discussion in relation to National reporting of SABSI as an indicator of quality of care and as an outcome measure for compliance with hand hygiene initiatives.

During 2007, the Healthcare Associated Infection Unit (HCAIU) proposed that monitoring of specific healthcare associated infection (HCAI) become mandatory for collection, submission and review by each Area Health Service. The mandatory indicators were selected by a process of review and consultation.

Healthcare associated SABSI was one of the indicators mandated and data submission commenced in October 2007 for metropolitan public hospitals and January 2008 for Regional facilities. A further six private hospitals contribute data voluntarily. Both inpatient and non-inpatient events are recorded. Overall *S. aureus* BSI rates are reported as well as rates for MRSA and MSSA.

The results of data obtained over the past nine months for mandatory HCA SABSI reporting will be presented.

MRSA: USA 300 – emergence and follow-up in WA

Allison Peterson • Healthcare Associated Infection Unit, Communicable Disease Control Directorate, Department of Health Western Australia
Helen Van Gessell • Healthcare Associated Infection Unit, Communicable Disease Control Directorate, Department of Health Western Australia
Rebecca McCann • Healthcare Associated Infection Unit, Communicable Disease Control Directorate, Department of Health Western Australia
Leigh Goggin • Healthcare Associated Infection Unit, Communicable Disease Control Directorate, Department of Health Western Australia

In Western Australia (WA) MRSA has been notifiable by legislation since 1982 and the Gram Positive Bacteria Typing and Research Unit (GPBTRU) provides a comprehensive molecular typing function to support MRSA prevention and control programs. In 2007, the GPBTRU reported an increase in CA-MRSA strains that carry a combination of virulence factors including the Panton-Valentine leukocidin (PVL) gene, associated with tissue necrosis and abscess formation. These strains have been documented elsewhere in the world to cause moderate to severe community-associated MRSA (CA-MRSA) infections in otherwise healthy people and anecdotal reports of severe infections due to these virulent CA-MRSA strains were appearing in WA.

USA 300 (ST8-MRSA-IV) is now the predominant cause of community skin and soft tissue infection (SSTI) in the USA and an increasingly common cause of bloodstream infections in their healthcare facilities. An increased prevalence of this strain was noted in WA in 2007. This information resulted in the decision by the Healthcare Associated Infection Unit (HCAIU) to follow-up all USA-300 cases detected in WA since 2004 with the aim of preventing it from becoming endemic in WA. This poster describes the follow-up process and reports the findings.

Viral gastro: put up or shut down

Kathryn L. Williams • Melbourne Health
Vincent Sinickas • Melbourne Health
Louise C. Hobbs • Melbourne Health

Background: In December 2006 the Infection Prevention and Surveillance Service (IPSS) at Melbourne Health (MH) was alerted to an outbreak of viral gastroenteritis. Our outbreak management plan was implemented: contact isolation/cohorting of affected patients for 72 h post symptoms, increased environmental cleaning and active promotion of hand hygiene (HH). Despite these measures the community outbreak continued to escalate with the number of presentations to our Emergency Department (ED) threatening to impact hospital access and available resources.

Objectives: To demonstrate how the implementation of additional containment strategies can have a positive impact on the level of disease transmission during a significant outbreak of viral gastroenteritis.

Methods: A meeting of key stakeholders resulted in the following additional strategies being implemented:

- Designated areas within ED and admitting wards to receive affected patients, each with dedicated HH/bathroom facilities.
- Physical barriers installed to prevent containment breaches.
- HH monitors stationed at ED/ward entry points to enforce HH compliance.
- Daily review of admissions and active cases.
- Extension of the exclusion period for symptomatic staff/visitors to 72 h post symptoms.

Results: Between December 2006 and February 2007:

- 378 patients presented to the ED with gastro-related signs and symptoms; 90 were admitted.
- 30 faecal specimens positive for viral gastro, 26 positive bacterial cultures.
- 78 staff took gastro-related sick leave.
- 11 cases were deemed to be hospital-acquired.

Conclusion: Consensus between key stakeholders and commitment of appropriate resources can have a positive impact on the scope and duration of an infectious outbreak.

Tasmanian Infection Prevention & Control Unit

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The development of the Tasmania Infection Prevention & Control Unit (TIPCU) commenced on the 21st January 2008. The unit is located within Population Health at the Department of Health & Human Services (DHHS) and services all areas of the DHHS including Health and Human Services. The TIPCU provides independent professional advice, leadership and information about healthcare associated infections to health professionals in the DHHS Tasmania. The team also provides representation of the State at a national level.

The Primary roles of the TIPCU include developement & implemenation of a surveillance program(s) for HAI's, training & education, leadship/state representation and supporting the DHHS's emergency planning in respect to any infection control issues.

The poster aims to provide more detail around each of these roles and includes the current planned programmes of work for TIPCU.

Ring Ring – infection control calling (post discharge surgical site surveillance at Canberra Hospital ACT Australia)

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Introduction: The Infection Prevention and Control Unit at Canberra Hospital (TCH) ACT has undertaken prospective targeted surgical site infection (SSI) surveillance since 2002. Components of our surveillance include inhospital and post discharge surveillance. With decreased length of hospital stay and the coexistent requirement for management of the patient in the home, there is the potential problem of an underestimation of infection rates if post discharge surveillance is not included.

Method: An experienced Infection Control Nurse undertakes post discharge surveillance at TCH 30 days post operatively. The methods used include patient record review following an outpatient appointment or contacting the patient via telephone. After phone contact with the patient, probable SSI are discussed at a weekly unit meeting. Patients are deemed non-contactable after three attempts to telephone them.

Results: Our contact success rate varies depending on the surgical speciality and is between 85 to 96%. Our post discharge surveillance has identified both positive and negative issues. On the positive side, patients appreciate the follow up and see the hospital in a more caring light, and our SSI data is more accurate. Negatives include unreliability of some data, resource implications and lack of comparative data.

Conclusion: We recognise that there is a need for further work on improving the validity of post discharge data. Although we have identified some problems, we feel that these are outweighed by the benefits. We would encourage more health care facilities to consider post discharge surveillance.