The 6th International Congress of the Asia Pacific Society of Infection Control

Strategic Practices for Combating Microbial Resistance

10th – 13th April Shanghai International Conventional Centre Shanghai

The central theme at APSIC 2013 is Strategic Practices for Combating Microbial Resistance

Objectives of the Congress

(a) To provide a forum for infection control nurses from around the world to come together in a stimulating environment to share their expertise and knowledge on latest evidence based advancement in infection prevention and quality improvement strategies.

(b) To keep abreast on science, methods and technology on infection control to which we base our practice and provide new ideas for application and ways to move forward in diverse settings.

(c) To provide an opportunity for infection control nurses worldwide to present papers or projects and showcase their success in reducing Healthcare Associated Infections, Managing Outbreaks, Surveillance Strategies and Emerging Infections in infection prevention and control strategies.

Poster Presentation

DEVELOPING, IMPLEMENTING AND PROGRESS OF AN INFECTION PREVENTION AND CONTROL PROGRAM IN THE AMBULATORY DIALYSIS CARE SETTING: THE NATIONAL KIDNEY FOUNDATION (NKF) EXPERIENCE

C.G Chua[1], RN, BSN; Jamilah Jantan, RN, BSN; Helen Goh[2], RN, B Hlth Sc[Nursing], MPH, MHM.

Background: In April 2007, the Ministry of Health (MOH) in collaboration with the Practice Leader on Infection Control of the Joint Commission International (JCI), conducted training and workshop for the Infection Control Nurses and Nurse Administrators of Dialysis Centers (DCs) in Singapore. Since then the promotion of infection prevention and control became the key focus of the National Kidney Foundation (NKF), Singapore. This paper describes the development, implementation and progress of the infection prevention and control program in the NKF ambulatory dialysis centers.

Objectives: Infections involving vascular access sites are a major cause of morbidity and mortality amongst hemodialysis patients.[1] Hence an effective infection prevention and control program is a critical component of the patient safety programme of DCs.

Methods: To effect the implementation of what was learned during the educational program, the Infection Control Nurse (ICN) in NKF together with an IC consultant facilitated the development of effective infection prevention and control program.

Results: In September 2007, an Infection Control (IC) Unit was formed. This unit developed IC policies and procedures specific to the DCs' setting. Audit tools and checklists were developed and tested in the 25 DCs of the ambulatory setting. Educational sessions on IC were conducted on-site over six months and surveillance activities for access sites infection, sharps related injuries were concurrently developed. A Nursing Infection Control Task Group (NICTG) was formed to continue to inculcate the culture of infection prevention and control through education, communication and research throughout the DCs.

Conclusion: Igniting and promoting a culture for patient safety is vital in improving the safety and quality of care in dialysis settings. The development, implementation and continuous improvement in Infection Prevention and Control in the NKF DCs will instill a culture of quality and safe care to our dialysis patients.

1nfection Control Programme Content

Plenary Session 3-1

Disinfection and Sterilization: Current & New Technologies - William Rutala (USA)

Professor, Division of Infectious Diseases, Department of Medicine, Director, State-wide Program for Infection Control and Epidemiology, University of North Carolina, USA. Director, Hospital Epidemiology, Occupational Health & Safety Program at UNC Health Care System, Carolina, USA Advisor, Centres for Diseases Control & Prevention

When properly used, disinfection and sterilization can ensure the safe use of invasive and non invasive medical devices.

Pof Rutala emphasized the level of disinfection or sterilization is dependent on the intended use of the object:

- Critical items (such as surgical instruments, which contact sterile tissue)
- Semi-critical –(such as endoscopes, which contact with mucous membranes)
- Non-critical – (such as stethoscopes, which contact only with intact skin)

Discussions on new developments & methods of disinfection & sterilization have been introduced in the health care settings.

New issues associate with critical items will reviewed such as low temperature sterilization technology, biological indicators and sterilization technologies effective against prions.

Other special issues associated with reprocessing semi critical items will discuss to include reprocessing endoscopes, newly high-level disinfectants, and concerns with reprocessing other semi critical items.

Current issues on improve hydrogen peroxide; suboptimal cleaning of environmental surfaces and objects, tools to monitor the effectiveness of cleaning and room decontamination units.

Pof Rutala reminded user must consider the advantages & disadvantages of specific products and process when choosing a disinfection or sterilization process.

Key points to note:

1. Adherence to recommendations & implementation of new product s/processes (when evidence base) should improve disinfection & sterilization practices in the healthcare facilities, thereby reducing infectious associated with contaminated patient –care –items.
2. Strict adherence to current guidelines is required as more outbreaks have been linked to inadequately cleaned or disinfected semi critical items (eg endoscopes) undergoing high level disinfection than any other device.

LS5-2 Heat Sealing and Validation of Medical See-though Flexible Packaging - Christian Wolf (Germany)

“Every chain is only as strong as its weak link” Even best sterilizers and thermal disinfectors are useless when the correctly prepared instrument does not maintain sterility until the point of use.

The following things should be considered in your packaging system:

1. Pack your instruments before sterilization in professional packaging system. (eg sealable pouches). Make sure that the bag carries the Certification number or ISO Number
2. Ensure that the sealer monitors the critical process parameters (at least sealing temperature and contact pressure)
3. Have the manufacture certify that the devices conforms to the new standard ISO
4. Use a compatible documentation system (eg daily use of SEAL CHECK indicators)
5. Regularly maintained your device professionally

SY9-1 MDROs Infections in Japan & Decontamination of Them on the Environmental Surfaces by Hydrogen Peroxide Vaporised. - Rika Yoshida (Japan)

The environmental surface decontamination by hydrogen peroxide vaporised (HPV), it was revaluated in many European countries and US as terminal disinfection of microorganisms which may cause cross-infections in patient rooms. He shared his study done in Japan, concluded that HPV environment surface decontamination is an effective and safe procedure as a terminal disinfection of patient rooms.

ME2-2 New Sight for Environmental Decontamination - Jen-hsien Wang (Taiwan)

Gaseous hydrogen peroxide has now been well studies. It is active against many pathogens and has also been shown to reduce infection rates due to C diffiiles when used as part of a hospital decontamination programme.

KN4-2: How Clean Is Your Hospital - Dr Ling Moi Lin (Singapore)

1. Close collaboration with the environmental staff will help towards a better compliance to cleaning standards.
2. A system of monitoring and audits are adjunct measures of their performance.
3. Multi-prong interventions of enhanced understanding of housekeeping staff, improved methods in cleaning and immediate concurrent feedback on performance have shown to lead to an improved process that will yield a higher chance of adequate cleaning of the environment.

Plenary Session 3-3

Translating Surveillance to Quality Improvement -William R Jarvis (USA)

President, CFO, Jarvis and Jason Associates, USA. Chairman, Food and Drug Administration. General Hospital and Personal Use Committee, USA. Member, Infectious Diseases Society of America

Surveillance is one of the cornerstones of healthcare associated infection (HAI) prevention & control.HAI surveillance without implementing control measures has little impact on HAI infection. It is imperative that HAI surveillance activities be strongly linked to implementation HAI prevention interventions in order to improve patient safety & quality.

The Institute of Healthcare Improvement (IHI) and the World Health Organisation (WHO) have emphasized the importance of insuring that all patients receive the intervention thorough quality improvement initiatives included: Toyota Production System, Six Sigma, Positive Deviance etc.

Example of the 4 Es (Engage, Educate, Execute, and Evaluate) approached:

1. Using this processes the ICN bring a team of clinicians & administrators together *(Engage)* to identify a HIA problem needing to be address.
2. Issue on elevated CLA-BSI rate, and the *evaluate* of the published evidence, identify the best practices, established a "BUNDLE"
3. Practices is implemented (*executed*) and *evaluated*
4. *Education* provided to the clinicians

Cycle of improvement should occur. Example of how this process has been translate HAI surveillance data into quality improvement and improved patient safety will be provided.

KN19-2 Do Care Bundle Work? - Chun- Ming Lee (Taiwan)

The speaker mentioned bundle care concept is not without controversy. Several strategies can be used to evaluate and implement bundle care. These include forming a committee to review bundle care recommendation and compare them to current practices, generating a timeline for implementation, providing education and communication to staff regarding bundle components, conducting audits to assess compliance with bundle care components, and regularly reporting the results back to staff.

KN9-1 Sentinel Event Reporting and Root Cause Analysis (RCA) – Patricia Ching (Hong Kong)

Patricia stated RCA is expected to uncover the contributing factors in the organisation system and processes that can be altered to reduce the likelihood of such recurrence in the future. Infection related deaths or permanent disabilities are sentinel events because they are unanticipated but many are preventable. A very important component of a RCA is thorough review of the literature to ensure those action plans are based on appropriate standards and best practices. The IP are the most appropriate team members to performing RCA to integrate sentinel event analysis into infection prevention and quality improvement.

PL1-1: Challenge of Antimicrobial Resistance : A Worldwide Opportunity for Infection Control – Carmem Lucia Pessoa Da Silva (Switzerland)

Antimicrobial Resistance (AMR) challenges the control of Infectious diseases, jeopardizes progress of health outcomes by increasing mobility and mortality, and imposes huge costs on societies. The speaker had identified specific actions in the Global containment Strategy and World Health Day 2011 (WHD policy package 2011). These include the strengthening of interventions based on core public health principles and values such as surveillance, access to medicines, infection prevention and control, health system strengthening, fostering innovations, civil society engagement, comprehensive planning and accountability in order to contain AMR. Good hygiene is the basic for preventing infectious and for brings diseases spread under control. Therefore strengthening of Infection prevention and control programs is one of the main pillars proposed by WHD 2011 policy package.

Critical Appraisal of the Strengths and Areas for Improvement of the Conference

a) The conference offers good platform for novice to expert to learn on infection control

b) The conference promotes better insights on Infection Control Program and strategies implemented in their own hospitals, unfortunately some of the interesting topics were in mandarin versions, and is difficult for most of us to understand. Thought the presentations by the delegates in mandarin were very interesting.

c) Some of the delegates were talking loudly and with loud ear phones hanging on their ears, and caused a lot of distraction to others.

Personal Achievements :

1. The experience at the conference was enriching. There was a lot to learn from delegates of other countries and I gained even more knowledge in the process.
2. Gain networking session with other international delegates had given me a wider scope and perspective of what was done in other countries.
3. The poster presentation requires a lot, of patience, perseverance to explain in Mandarin, which is a big challenge for me, but it also helps me to improve in my Mandarin.
4. The experience and exposure to the international level had helped me to understand the work done by infection control practitioners in raising the awareness about infection prevention and control strategies for their respective organizations. The responsibilities of an infection control practitioner is multi-dimensional and their dedication to work earned them the status of role models for infection control nurses to follow

Report submitted by:
Ms Chua Chor Guek

6th International Congress Of The Asia Pacific Society of Infection Control

Strategic Practices for Combating Microbial Resistance

11th to 13th April 2013

Shanghai International Convention Centre, Shanghai, China

Learning objectives

To broaden knowledge, gain updates and learn the latest advances in infection control practices.

Sharing of knowledge from the Congress

Plenary Session: Lessons Learnt from the Last Pandemic (Wing-Hong Seto, Hong Kong China)

Prof Seto highlighted 4 focuses of lesson learnt during Influenza A/H1N1 2009 pandemic:

- Mass gathering – There was some evidence on restricting mass gathering together with isolation measures may reduce the spread of disease but not possible to determine the effectiveness of restriction on its own. However, the influence of the disease seemed to be greater on the athletes, musicians and support staff associated with the mass gatherings rather than the attendees. Mass gathering is not homogenous and there is no common terminology to describe mass gathering. Hence it is important to adopt common terminology and develop hierarchy for decision making based on risk assessment factors. There is a need for tools and resources to measure and evaluate the effectiveness of interventions; a specific methodology for estimating the economic costs of interventions conducted during and cancellation of mass gathering events; and to know how more about respiratory infection risks associated with different types of mass gatherings.
- Travel & Trade – During the SARs period, Hong Kong temperature screened more than 200 million of passengers and 707 passengers were transported to hospital but there was zero SARs detected. 460 out of 120 million passengers did self-declaration were transported to hospital and 2 were detected with SARS. Taiwan screened 2.8 million passengers and detected 4 probable SARS. Beijing screened 13.8 million passengers and detected 12 passengers with SARS

without laboratory confirmation. Singapore screened about 440 000 air passengers but detected zero SARS. Hence, point of entry temperature screening was the most controversial intervention with significant on human resources implications and variable effectiveness evaluation.

- School measures – Early school closure for children could reduce transmission of disease, however, there was not enough evidence that it had impact in other age group. Reactive school closure extending the schedule holiday absence period was considered more effective and accepted because it was less disruptive. The easier decision making for school closure was triggered by when there was child death in the community. This was due to the need and desire to protect the children.
- Behavioural intervention – A central coordinating body is needed to maintain dialogue and planning among partners to sustain community preparedness. Involvement of persons and organizations that have high credibility with communities and are aligned with strategic plans contributed to stronger public awareness effort. There is a need to studies and document the effectiveness of hand washing and the impact of hand hygiene program to prevent the spread of disease. Prof Seto highlighted that hand hygiene is not just in healthcare settings but should be started from home. He shared a Hong Kong study on household members without hand hygiene had high risk of getting the influenza. There was no significant difference between household members who did hand hygiene alone and hand hygiene with surgical mask. The study highlighted the importance of hand hygiene and must be started from home to prevent the spread of influenza.

The lesson learnt from the last pandemic concluded that influenza is not airborne. H1N1 transmission occurs like seasonal flu via droplet spread. Negative pressure room and N95mask are not recommended for routine care.

Pandemic strain requires very complex mutation. Base on the history of previous periodic presence of influenza, it suggests that the reassortment of pandemic strain is a rare event.

Keynote lecture: New Directions in Prevention of Respiratory Tract Infections

Defining and Dealing with Aerosol Generating Procedures (Wing-Hong Seto, Hong Kong China)

WHO guideline on “Infection Prevention and Control of Epidemic and Pandemic prone Acute Respiratory Diseases in Healthcare” was recently updated with systematic review

on the procedures that lead to aerosol spread of infections. The recent classification for airborne transmission is:

- Obligate airborne transmission is solely via aerosols, eg. Pulmonary TB.
- Preferential airborne transmission is via multiple routes but predominately by aerosols, eg. Measles and Chickenpox.
- Opportunistic airborne transmission is via other routes but can be transmitted via aerosol in favourable conditions classify as high risk procedures such as intubation, eg. Influenza and SARS.

The systematic review on the aerosol generating procedures and risk of transmission of respiratory infections concluded that endotracheal intubation is aerosol-generating procedures. Prof Seto given a guide that any procedures that go beyond the larynx assume to cause aerosol-generating. He gave example of throat swab that does not go beyond the larynx and will not generate aerosol; lung suctioning does go beyond the larynx, hence is an aerosol-generating procedure. Non-invasive ventilation, mechanical ventilation, manual ventilation and nebulizer are not classified as aerosol-generating procedures. WHO defines aerosol-generating procedures include intubation, bronchoscopy, autopsies, cardiopulmonary resuscitation, open suction of airways and collection of lower respiratory tract specimens.

WHO recommended that healthcare workers to wear N95mask, eye protection, gown, gloves and adhere to hand hygiene for aerosol producing procedures. It is recommended that such procedure is to be performed in an adequately ventilated single room with 6 to 12 air exchange per hour and does not need a negative pressure room. It is recommended to practice standard and droplet precautions for non-invasive ventilation procedure and nebulizer treatment. Nebulizer treatment is to be given in an area that is physically separated from other patients, such as in a treatment room or use screen enclosure.

Lunch Symposium: Sterrilization Packaging for Medical Instruments in Healthcare Facilities

Evaluating Sterilization Wrap : What you need to know (Wava Truscott, USA)

Sterilization wrap plays an important role in the prevention of surgical site infections. The desired performance attributes for sterilization wrap include:

- Allow for sterilant and air penetration so that content is sterilized without ruining barrier protection and allow adequate aeration. Fabric with too little porosity

increase risk of wet pack and decrease ability to aerate. Fabric with too much porosity result loss of barrier protection.

- Resist microbial and water penetration for barrier efficacy and infection prevention.
- Low linting wrap reduces infections and surgical complications. Sterile gown and drapes should as lint free as possible. Lint particles are disseminated into the environment. Bacteria could cling to the lint and may settle down to contaminate the surgery resulting in post-surgical complications. Post-surgical complications associated with lint are blood clots, amplified inflammation, poor quality healing, granulomas, adhesion, band formation and surgical wound infections.
- Resist tears, puncture and abrasion to prevent entry of bacteria, dust and debris that may have contaminated the outer wrap surface.

Quality control of woven textile wrap includes:

- Launder the woven textile wrap after each use
- De-lint after washing
- Inspect for defects before each use
- Use heat patch on both sides for repairs
- Do not use needle and thread for patching as it creates holes
- Limit patches as steam cannot penetrate the wrap
- Develop an inspection system and document

Sterilization wrap should prevent entry of contaminants and allows aseptic presentation of the product at the point of use.

Keynote Lecture: New Technologies and Products in Infection Control

New Development and Efficacy of Alcohol Based Handrubs: Types and Concentration (William Jarvis, USA)

There were studies being done to determine factors influencing the efficacy of alcohol-based handrub. Data showed that:

- Alcohol type – Iso-propanol was more effective than ethanol
- Alcohol concentration- there was no relationship between the efficacy of alcohol-based hand rub and its concentration. Result showed that alcohol concentration is not critical determinant of the efficacy.
- Formulation – total formulation of the alcohol-based handrub had the greater influence on the efficacy. The ingredients of the formulation creates specific

attributes that include skin tolerance, skin moisturization, aesthetic properties, and enable specific delivery formats such as gel or foam.

- Product form – analysis showed that there was no significant difference based on alcohol-based handrub form (gel and foam) in term of the log reduction.
- Application form – application of small volume of alcohol-based handrub resulted in lower efficacy of alcohol-based handrub. Higher volume achieved greater log reductions, thus showed to have higher alcohol-based handrub efficacy.

The data analysis concluded that formulation and application volume of alcohol-based handrub were determinant of efficacy. The clinical effectiveness of alcohol-based handrub is dependent upon its efficacy and hand hygiene compliance. Therefore the "best" alcohol-based handrub is to achieve at least the threshold of antimicrobial efficacy while optimizing product acceptance elements to ensure maximum product usage.

Acknowledgement

I would like to thank Infection Control Association, Singapore (ICAS) for the

sponsorship.

Report submitted by:

Ms Chua Gek Hong

Chief Infection Control Officer

Parkway Pantai

The 6th International Congress of the Asia Pacific Society of Infection Control –

Strategic Practices for Combating Microbial Resistance 10th-13th April, 2013

Introduction

The 6th International Congress of the Asia Pacific Society of Infection Control was held in Shanghai International Convention Centre from 11-13th April 2013. Infection Control Association, Singapore (ICAS) sponsored 4 members to represent Singapore in this conference.

The theme for the congress was "Strategic Practices for Combating Microbial Resistances" and Dr Hu Bijie, chairman for the APSIC, highlighted that it offers a platform to share the latest advances in infection control practices and strategies.

Plenary Session 1: Challenge of Antimicrobial Resistance- A Worldwide Opportunity for Infection Control

Carmen Lucia Pessoa Da Silva

Associate Professor, Infectious Diseases, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

The challenge of increase antimicrobial resistance (AMR) is detected at the faster pace. Survey of over 10,000 patients had shown that 15% of patients had NDM-1 producing intestinal bacteria. This is because 90% of food had been contaminated with antibiotic. The consequence would cause an impact on public health, vulnerable group and specific group like surgical site infection. Hence it is important to engage governments, health care sector, communities, agriculture and industry. AMR challenges the control of infectious diseases, jeopardizes progress on health outcomes by increasing morbidity and mortality. Actions are needed for surveillance, access to medicines, rational use of medicines, infection and prevention, health system strengthening, fostering innovations and civil society engagement with comprehensive planning and accountability.

World Health Day 2011 had proposed to strengthen infection prevention and control programs as one of the main pillars. Additionally, it is important to foster innovation, research and development in: 1) new infectious disease diagnostics, treatment alternatives and vaccines, 2) new regulatory and business models to encourage and reward development of new tools, 3) Operational research on effectiveness of intervention with implementation strategies and 4) global public health research goals.

Plenary Session 2: Effective Infection Control Strategies in Europe

Didier Pittet (Switzerland)

Director, Infection Control Programme and WHO collaborating Centre on patient Safety, University of Geneva Hospitals and Faculty of Medicine, Geneva, Switzerland. Lead of the World Health Organization First Global Patient Safety Challenge "Clean Care is Safe Care". Commander of the British Empire (CBE)

The disparities for differences on epidemiology of nosocomial infections and multiresistant bacteria in USA and Europe was due to differences in 1) surveillance methods, including diagnostic practices and laboratory recognition, 2) infection control practices, 3) antibiotic prescribing practices, 4) population characteristics and patient case-mix, 5) cultural factors (e.g. human behavior), 6) factors related to the health-care systems and available resources and 7) political commitment.

It is important to learn from the US on teaching and training, surveillance and outbreak investigations, research, novel technologies can help improve infection control. Similary from Europe, to learn that system change is possible from political support and funding, alcohol-based hand rubs are key, upkeep of environment hygiene, surveillance and control of antibiotic resistance and safety net from public health.

Sharing of "SIGHT"- project from Zingg W, Pittet D listed 10 key components:

1) Infection infection control programme in acute care hospital should comprise of trained one full-time IC-nurse ≤ 250 beds, dedicated physician trained infection control, microbiological support and data management support.

2) Ward occupancy does not exceed capacity for staffing and workload is not compromise to acuity of care. Number of pool/agency nurses and physicians minimized.

3) Accessibility and sufficient material and equipment and optimized ergonomics.

4) Use of guidelines in combination with practical education and training.

5) Education and training involves frontline staff, and is team and task oriented.

6) Organizing audit as a standardized (scored) and systematic review of practice with timely feedback.

7) Participating in prospective surveillance and offering active feedback, preferably as part of a network.

8) Implementing infection control programmed follow a multimodel strategy including tools such as bundles and checklist developed by multidisciplinary teams and taking into account local conditions.

9) Identifying and engaging champions in the promotion of a multimodal intervention strategy.

10) A positive organizational culture by fostering working relationships and communicating across units and staff groups.

Plenary Session 2: Key Changes in Isolation Through the Years

Bryan Simmons (USA)

Medical Director, Infection Prevention for Methodist Le Bonheur Healthcare, Memphis, Tennesse, USA. Former president, the Society for Healthcare Epidemiology of America, SHEA

Vertical methods to prevent transmission can be utilized with colonization cultures, isolation based on colonization, efforts to eliminate colonization and cohorting of infected/ colonized patients/ same pathogen. While on the other hand, horizontal methods to prevent transmission by setting up antibiotix stewardship, hand hygiene, standard precautions, chlorhexidine disinfection and having private rooms for patients.

Some hospitals give "lifelong" isolation for VRE as it stays in bowel and ready to reappear when antibiotic given. Hence disinfection is important to prevent remove bacteria and virus that survived well in the environment. E.g Acinetobacter, VRE, MRSA, Clostridium Difficile and Norovirus. 16% pf all hospital acquired infection (HAI) are associated with multidrug resistant pathogens with MRSA (8% of HAI) and VRE (4%).

Plenary Session 2: Antibiotic Stewardship in China- Can it work in a large nation?

Hu Bi-Jie

Director, Department of Infection Control, Zhongshan Hospital of Fudan University, Shanghai, China. President, Chinese Society for Infection Control, CPMA

Multi-drug pathogens cannot be treated successfully with various antimicrobial agents. Other than hand hygiene and environment decontamination, antibiotic stewardship is another approach to prevent rise of multi-drug pathogens. In China year 2011, the China MOH has implemented strict regulation and checklist for prescribing antibiotic. Practical indicators such as antibiotic usage rate, DDD per 100 patient-days, ways and days for perioperative prophylaxis in various surgeries, were required and expressed clearly.

Plenary Session 3: Disinfection and Sterilization: Current Issues and New Technologies

William Rutala (USA)

Professor, Division of Infectious Diseases, Department of Medicine, Director, Statewide Program for Infection Control and Epidemiology, University of North Carolina. School of Medicine, Carolina, USA. Director, Hospital Epidemiology, Occupational Health, and Safety Program at UNC Health Care System, Carolina, USA. Advisor, Centers for Disease Control and Prevention.

Invasive and noninvasive medical devices must be properly disinfected and sterilized to endure safety use on patient. Level of disinfection is dependent on the intended use of the object. Critical items (such as surgical instruments which contact sterile tissue), semicritical items (such as endoscopes, which contact only mucous membrances) and noncritical items (such as stethoscope, which contact only intact skin). Cleaning must always precede high-level disinfection and sterilization. It is important to adhere to recommendations and implementation of new products and processes.

Low critical surface cleaning could use at least 4-7 of wipes. It is highly encouraged to use the microfiber for environment cleaning. However one must remember, after cleaning the room, there is 2/3 of chances been contaminated by the hands of HCWs.

Plenary Session 3: Lessons Learnt From The Last Pandemic

Wing-Hong Seto

Director, WHO Collaborating Centre for Infection Control, Hospital Authority, Hong Kong, China. Member, Emergency Committee of the IHR of the WHO

Public Health measures during the influenza A (H1N1) 2009 Pandemic can be retrieved. Controversy of whether the wearing of N95 mask is over done when surgical mask is sufficient. It was brought up on whether self-declaration for visitor screening is better as it can detect 2 out of 120.8 million questions.

Plenary Session 3: Translating Surveillance to Quality Improvement

William Jarvis

President, CFO, Jarvis and Jason Associates, USA. Chairman, Food and Drug Administration. General Hospital and Personal Use Committee, USA. Member, Infectious Diseases Society of America.

HAI surveillance without implementing control measures has little impact on HAI prevention. This is vital to improve patient safety and quality. It is critical to translate HAI surveillance into HAI prevention . There are tools to guide like Toyota Production System (TPS), Siz Sigma, Positive Deviance etc. Infection preventionists can help collaborate with a team of clinicians and administrators to prevent HAI.

Conclusion

With this, I wish to express my appreciation for ICAs funding my attendance for the 6th International APSIC congress. It has been an enriching experience to listen to the updates from the renowned speakers. And it is enlightened to see that oral translation is provided for the Chinese audiences. It is only with regrets that not all of the power points have English translation hence it is difficult to understand from the Chinese speakers.

Report submitted by:
Ms Foo Meow Ling

The 6th International Congress of the Asia Pacific Society of Infection Control 10 – 13 April, 2013

Introduction

The Asia Pacific Society of Infection Control (APSIC) was established in 1998 and is a multi-national, voluntary, organization dedicated to the advancement of infection control practice to reduce hospital associated infections, monitor and control emerging and re-emerging infectious diseases and improved patient outcomes.

APSIC aims to bring together multidisciplinary infection control professionals in the region to share their knowledge, experience, skills, and quality improvement and research findings by facilitating the exchange of information through training courses, seminars, congresses and conferences in the Asia Pacific region.

The theme for 2012 congress was "Strategic Practices for Combating Microbial Resistance" Controlling Infection.

The topics presented consist of:

1. Infection Control and Accreditation
2. New Bundles that actually works
3. The updated WHO Acute Respiratory Disease Infection Control
4. Environment Cleaning or Decontamination – A Systematic Review of Chemical Disinfectants and Environmental Cleaning
5. Prioritization of Isolation Measures
6. New developments in using IT for surveillance
7. New procedures for Infection Control in Renal Dialysis
8. Hand Hygiene and Healthcare Associated Infection – Cause and Effect
9. Environmental Leaning or Decontamination – When? How? And How Well?
10. Concern of Blood-borne Infections – Injection Safety: HCV, HBV, HEVV

Below are 4 of the presented lectures and learning points.

1) Effective Infection Control Strategies in Europe (PL 2-1)

Didier Pittet (Switzerland)
Director, Infection Control Programme and WHO Collaborating Centre on Patient Safety, University of Geneva Hospitals.

Health-care associated infections and the uneven distribution of infection rates.

Health-care associated infections have become a world-wide problem. However, the reasons for uneven geographic distribution of infection rates are not fully understood. For instance, there are striking differences in the epidemiology of nosocomial infections and multi-resistant bacteria between USA and Europe.

2007 ORION guidelines to standardise reporting rates and intervention

Speaker mentioned intervention in health-care–associated infection and quality of outbreak descriptions in medical literature should consort with ORION (Outbreak Reports and Intervention Studies of Nosocomial infection) guidelines 2007.

Orion states the quality of research in hospital epidemiology (infection control) must be improved to be robust enough to influence policy and practice. The Orion Statement: Guidelines for transparent reporting of outbreak reports & intervention studies of nosocomial infection requires any submitted study to fulfil the 22 item checklist, and a summary table. The emphasis is on transparency to improve the quality of reporting and on the use of appropriate statistical techniques.

Disparities between USA & Europe

In spite of Orion guidelines, there are disparities between USA & Europe. The disparities may be explained by several determinants:-

1. Surveillance methods, including diagnostic practices and laboratory practices
2. Infection control practices
3. Antibiotics prescribing practices
4. Population characteristics and patient case-mix
5. Cultural factors
6. Factors related to the health-care systems and available resources
7. Political commitment

Post SENIC Project

40 years after SENIC project which was undertaken by Center for Disease Control. What was the conclusion for an effective infection control programme? The findings from the initial project still remain, it is a coordinated interplay between

- Infrastructure
- Hospital policies
- The presence of qualified professionals in adequate number
- Administrative support
- A positive organisational culture

Both US & Europe have their strong points in preventing and controlling infectious diseases.

What can we learn from the US?

1. Teaching and Training: Epidemiology and Public Health; Clinical Infectious Diseases
2. Surveillance and outbreak investigations: Systematic approach with epidemiologic methods and adequate skills.
3. Research: Evidence-and patient-orientated.

What can our US colleagues learn from Europe?

1. Great progress & system change is possible (political support & funding)
2. Hand hygiene with alcohol-based hand rubs and worldwide promotion campaign
3. Surveillance and control of antibiotic resistance
4. Novel epidemiologic methods for infection control
5. Not everything should be market-driven…
6. Public health is important!

2) Antibiotic Stewardship in China- Can It Work In A Large Nation? (PL 2-3)

Bi-jie Hu (China)
Zhongshan Hospital of Fudan University
Shanghai, China

Combating Resistance (infection control +antibiotic control)

- Bacteria resistance has been becoming a severe problem during past 20 years.
- More strict infection control procedures such as hand hygiene and environmental decontamination are needed.
- Meanwhile antibiotic stewardship is another imperative way on combating resistance.

What is Antibiotic (AB) Stewardship?

Antibiotic stewardship involves the:

- Optimal selection, route, dose and duration of an antibiotic resulting in the cure or prevention of infection with
- Minimal unintended consequences to the patient including emergence of resistance, adverse drug events, and cost.

Antibiotics guideline has little effect on proper use of AB

- Due to the great diversity of antibiotics and complexity of clinical manifestation of infectious diseases, proper and wise application of antibiotics is not easy for many doctors.
- National guideline (principle) for antibiotics usage issued by MOH of China in 2004.

The guidelines include the following strategies:

- Auditing and feedback
- Prescriber education
- Guideline implementation
- Application of information technology

The speaker said that the situation of antibiotic overuse, misuse and abuse did not change with national guidelines.

In 2011, Ministry of Health China set the following targets for various hospitals. The Ministry follows through with audit and hospitals' inspection to ensure hospitals meet the targeted reduction in antibiotics usage as stated.

Limited AB number in hospitals	Target for General Hospital
Tertiary hospital: < 50 District hospital: < 35 Women's hospital: < 40 Children's hospital: < 50 Stomatological hospital: < 35 Tumor hospital :< 35 Mental health center: < 10	AB prescription rate for inpatients: < 60% AB prescription rate for outpatients: <20% AB prescription rate for emergency patients:<40% AB utilization for inpatients: <40DDDs/100 Microbiological examination rate for AB therapy patients:≥ 50%/ 80%

The Ministry inspects the antimicrobial stewardship in the hospitals targeting at

- Right drug/dose/duration
- Obtain cultures/avoid empiric prescribing if possible
- Adjust empiric prescribing/stop antibiotic based on lab results
- Prophylaxis in surgery

Conclusion

The speaker mentioned that the "so-called most strict" administration regulation of antibiotics use by the Ministry of Health and the inspection checklist manage to contains antibiotics overuse or abuse in many hospitals in China finally. The checklist consists of proper indications, such as antibiotic usage rate, number of defined daily doses (DDD) per 100 patient-days, ways and days for perioperative prophylaxis in various surgeries were useful and effective.

3) Strategies to improve Influenza immunization in healthcare workers (KN12-3)

Michael L. Tapper (USA)
Hospital Epidemiologist
Director, Division of Infectious Diseases, New York USA

The speaker started by asking questions on why do we still need to discuss the issue on healthcare workers immunization?

Reasons are:

1. Rates of influenza immunization of healthcare workers still inadequate globally.
2. Education campaigns to encourage voluntary participation remain ineffective, but mandate work.

3. Recent data regarding vaccine efficacy (especially in the elderly) may confuse the public and healthcare workers. This makes voluntary campaigns more difficult.
4. Challenge of newly emerging and potentially pandemic viral strains (e.g. H5N1, H1N1, H7N9).

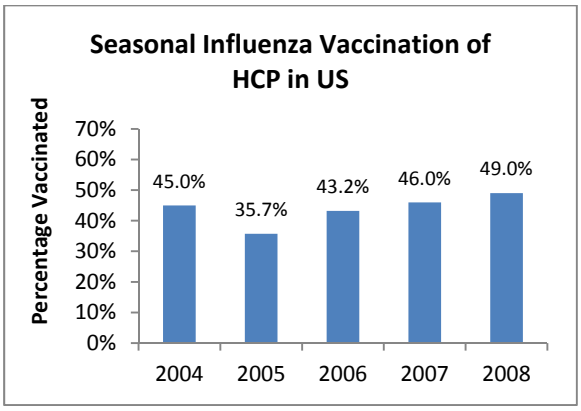
Why do we have healthcare-associated Influenza?

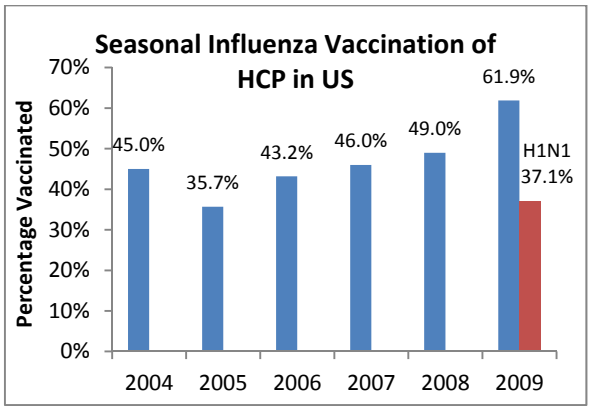
- Outbreaks of Influenza were reported in many care areas.
- The reason for these outbreaks was 25% of healthcare workers who were infected by influenza showed minimal or no symptoms.
- Such infected workers still shed (and spread) virus in their work place.
- It is reported that 76.6% healthcare workers work while ill with influenza-like illness (ILI).
- The mean duration of work is 2.5 days while HCWs are ill with ILI.

The measures for preventing healthcare-associated influenza are:-

- Early identification/isolation of suspect cases
- Source control/mask patient
- Restrict ill visitors/healthcare personnel
- Hand Hygiene
- Vaccination of patients
- Use PPE
- Antiviral prophylaxis
- Vaccination of healthcare workers

Data from 2004 to 2008 showed that < 50% of healthcare workers are getting annual flu shot in USA. (*CDC unpublished; Source NHIS; MMWR April 2, 2010)*





Healthcare worker could acquire nosocomial influenza infection

A survey published showed that 23% of nurses developed an influenza-like illness despite wearing a mask at work. Suboptimal adherence to standard precautions and failure to receive influenza vaccination were independent risk factors, adjusted for house-hold contacts. (*Infection Control Hosp Epidemiol 2009; 30:292-295*)

Yet, why are HCWs not receiving vaccinations? Reported reasons for low healthcare workers vaccination rates are:

Reason	% (Range)
Inconvenient	15- 83
Concerned for vaccine adverse events	27- 66
Perception of low risk for influenza	15- 23
Cost	1- 5
Fear of needles/Vaccine-adverse	8- 18
Vaccine not effective	8- 24
Egg allergy	1- 7

What is the target for Herd immunity?

To achieve herd coverage, the following should be targeted:

What's the Target?	%
Healthcare Personnel	79
Patients	44
Visitors	38
Other employees	30

a) In nursing home model, studies showed that if we vaccinated 100% healthcare workers, we can reduce patients risk by 60%.
b) In acute care model, if we vaccinated 100% of healthcare workers, we reduced patients risk by 43%.

To improve HCP Vaccination Rates, hospitals used the following strategies.

Make it a priority:

- Strong and visible administrative leadership
- Visible vaccination of key leaders e.g. senior management leading by examples
- Vaccination champions
- Provision of adequate staff and resources
- Train-the-trainer programs that empower unit staff

Make it available:

- Off-hours clinics
- Use of mobile vaccination carts
- Vaccination at staff/departmental meetings
- Provision of vaccine free of charge

Tackle the myths:

- Targeted education
- Assess comprehension of the message

Monitor and feedback progress:

- Tracking of individual & unit-based HCP vaccination compliance
- Surveillance for healthcare-associated influenza

Inspite of the strategies, the rates of influenza immunization of healthcare workers are still inadequate globally although vaccination has been recommended for several decades.

- Voluntary programs overall have not been effective at markedly improving rates.
- Voluntary programs require extensive personal and financial resources to implement successfully.

Mandatory Vaccination

Some Institutions/Healthcare Systems (e.g. Virginia Manson Medical Center, Barnes-Jewish Hospital) have gone on to have Mandated Influenza Vaccination of Healthcare Providers. Common Features among these institutions are**:**

They are dissatisfaction with rates compared to national average

- Strong leadership advocacy -> willing to take brunt of opposition
- Patient and worker safety emphasized

Mandating Vaccination: Challenges

- How to enforce the mandate: easier for new hires, but what about existing workers?
- Resource requirements especially at start-up
- Issues regarding worker autonomy, ethical, and religious beliefs and legal/contractual concerns
- HCWs who refused vaccination will ask to wear a mask throughout the influenza periods. Issue of stigmatization of mandatory use of masks for non-immunized

Make it mandatory/hard to refuse

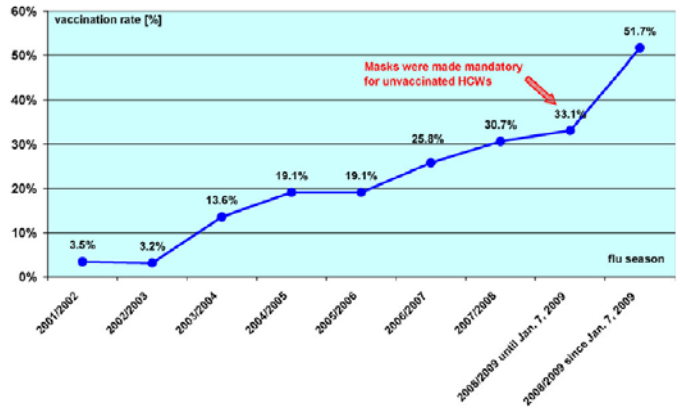
- HCWs who refused vaccination were asked to sign declination statements
- Mandatory vaccination was stated in Condition of Employment for new staff

Outcome of Mandatory Vaccination

- Initial implementation was intense and met by resource and labour/union challenges
- But finally the mandatory vaccination was engrains into culture->”No big deal” (eventually)
- Rates now ≥ 95%

Does Forcing Unvaccinated Healthcare Workers to wear a mask increase vaccination rates?

Improving vaccine uptake in HCWs - Germany



Wicker S Vaccine 27 (2009) 2631–2632

The speaker also highlighted the other side of the coin for HCWs influenza vaccination

An Ongoing Conundrum:

Have we "oversold" the benefits of annual influenza immunization to the public, to healthcare workers, and to ourselves?

Cochrane Collaboration, 2010 states
"We conclude that there is no evidence that only vaccinating healthcare workers prevents laboratory-proven Influenza, pneumonia, and death from pneumonia in elderly residents in long-term care facilities."

"Influenza vaccines can provide moderate protection against virologically confirmed influenza, but such protection is greatly reduced or absent in some seasons."

"Evidence for protections in adults age 65 years or older is lacking."
(*Osterholm et al Efficacy and Effectiveness of Influenza Vaccines Lancet Infection Diseases; 2012:12, 36.*)

Conclusions:

- Healthcare workers influenza vaccination historically has been regarded as a critical tool in preventing healthcare-associated influenza transmission.

- Voluntary influenza immunization programs rarely achieve targeted goals to protect vulnerable patients
- Mandates produce results but legal and ethical challenges to worker autonomy persist.
- Public reporting of vaccination coverage as a patient safety issue may prove helpful in improving rates.
- Persistent questions about vaccine efficacy and the challenge of newly emergent influenza strains promise to make successful immunization programs yet more difficult-hence we must keep the focus on protecting our most vulnerable patients.
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4) Lessons Learnt from The Last Pandemic (PL 3-2)

Wing Hong Seto (Hong Kong, China)
Director, WHO Collaborating Centre for infection, Hospital Authority, Hong Kong, China

Public health measures during the influenza A (H1N1) 2009 pandemic

Prof Seto referred to 2 WHO documents for this presentation

(A) "Public health measures during the influenza A(H1N1) 2009 pandemic" WHO Technical meeting Report

(B) Infection prevention and control of epidemic and pandemic-prone acute respiratory diseases in health care. WHO interim guidelines

From the executive summary of the Public measures meeting Report, it suggests the following 4 items should be considered.

1. The need and usefulness of inter-sectoral collaboration involving all stakeholders during the planning, implementation and evaluation of all intervention activities was stressed.
2. While well-prepared national plans were generally available, sub-national plans were not always available nor linked across sub-national areas, leading to conflicting messages and inconsistent application of measures.

3. The mild nature of the influenza A(H1N1)2009 pandemic and its low mortality rate clearly affected the use of guidance which was designed for response to a more severe disease.
4. A methodology for measuring the economic costs of interventions and the overall pandemic should be taken into account during pandemic preparedness.

Mass gathering

- The definition of a mass gathering is generally accepted to be an organized event of more than 1000 (from 1000 to 25000 or more) people at a specific location for a specific purpose for a defined period of time.

Lessons learned

- Mass gatherings are not homogenous, so it is important to adopt a common terminology for describing them and to develop a hierarchy for decision-making based on risk assessment factors.
- There is a need for tools and resources for evaluating and measuring the effectiveness of interventions, including appropriate use of existing surveillance systems.
- There also needs to be a specific methodology for estimating the economic costs both of interventions conducted during mass gathering events and of cancelling such events.
- There is a need to know much more about respiratory infection risks associated with different types of mass gatherings.

Travel and Trade

The SARS and Avian A(H5N1) Influenza outbreaks have raised awareness of the effects of infectious disease outbreaks on the travel and tourism industry. Estimates have shown that the economic burden of the influenza A(H1N1)2009 pandemic on this sector has been disproportionately high, representing 50% of the economic burden overall. Travel and tourism has issues specific to it and the economic effects on the industry in countries are widespread.

Lessons Learned

- Evaluating the effectiveness of border health/temperature screening during the pandemic was difficult, especially in the absence of counterfactual analyses; i.e., analyses of what would have happened if the intervention had not occurred.
- Points-of-entry temperature screening was the most controversial intervention, with significant human resource implications and variable effectiveness evaluations ranging from of little usefulness to highly effective.

Transportation screening has very low yield. Infact, self-declaration gave a better yield of detection in the following data.

Hong Kong 03/04 **Temperature screen (38°C): 213.5 million** **Transported to Hospital : 707** **SARS detected = 0** **Self-Declaration: 120.8 million** **Transported to Hospital: 460** **SARS detected = 2**	**Beijing 03** **Total screen: 13.8 million** **SARS detected – 12 (no lab confirmation)** **Taiwan April- July 03** **Total screen: 2.8 million** **SARS detected – 4 probably SARS** **Singapore: Feb to May 03** **Total air passengers screen 442973** **SARS detected= 0**

School Measures

It appeared that public acceptance of school closures was in general very high.

Lessons learned

That school closures can reduce transmission of influenza among children if implemented early enough. However, there is not enough evidence that school closures impact transmission in other age groups. Analyses of impact must consider the effect of measures which was greater during peak periods of disease spread and the context of implementation, including socioeconomic conditions and other factors.

Reactive school closures were frequently implemented by closing schools for a period of time leading up to scheduled holidays, thus extending the holiday absence period. They were considered highly effective by those implementing them, especially early in the pandemic, where closure of schools early, but for a short period only, was less disruptive than closing later in the middle of school term.

Child deaths in a community seem to trigger easier decision-making for closing schools due to the need and desire to protect children.

Behavioural Interventions

Measures addressing behavioural interventions to reduce transmission, including hand hygiene promotion and hand sanitizer installation, cough etiquette, staying at home with fever, social distancing, home disinfection, family care, disinfection of public places, home mask use, mask use in public, business closure and community infection control were implemented with inclusion of a rationale for all interventions.

Lessons learned

To sustain community preparedness, a central coordinating body is needed to maintain dialogue and planning among partners.
Public awareness efforts were stronger when they involved multiple persons and organizations having high credibility with communities and were aligned with a strategic

implementation plan. District plans were often inadequate with deficiencies in coverage at the periphery.

Lessons learned from the AH1N1 pandemic influenza

In 27th April 2009, WHO Emergency Committee meets for the second time. The WHO Director-General issues a statement that containment of the AH1N1 outbreak is not feasible, and **elevates the pandemic alert from Phase 3 to Phase 4.**
The H1N1 pandemic is the first time the world had a pandemic after 40 years of peace.

Risk for healthcare worker acquiring the AH1N1 during Pandemic

A review of the infectious nature of the disease comparing the risk of healthcare workers (clinical and non-clinical) during the AH1N1 pandemic was studied by Hong Kong and published in Clinical Infectious Disease. The study suggests that there is no extra risk for healthcare worker acquiring the infection when compared to the community.

Mode of Transmission for Influenza and the use of N95 mask

There is now consensus that Influenza is not airborne and the use of surgical mask is sufficient for the routine care of patients except during aerosol-generating procedures.

The USA position
SHEA recommendations
"At the start of the 2009 outbreak, there was uncertainty regarding the transmission dynamics of the novel H1N1 virus. While seasonal influenza is spread by large respiratory droplets, a concern at the onset of any potential influenza pandemic is whether the pathogen will have a different dynamics or methods of spread."
Therefore at the start N95 mask was recommended.

But on 23rd July, HICPIC advisory committee vote on the latest recommendation (http://www.cdc.gov/ncidod/dhqp/hicpac_transcript-07-23.html).

- "to endorse the **use of surgical masks for the routine care of patients with confirmed or suspected, novel influenza A (H1N1)"**

- "It is appropriate at this time to **recommend the use of N95 or higher respiratory protection for procedures that are likely to generate small particle aerosols."** The procedures are then listed to include "bronchoscopy, intubation under controlled or emergent situations, cardiopulmonary resuscitation, open airway suctioning and airway induction."

The speaker mentioned on problem of over-reaction to fear.
What is the greatest fear…..?
Be prepared and vigilant- But the facts – reassortment is a rare event.

The view of Peter Palese, Nature 439 :124-125 (Jan 2006)
"…not all AI viruses have the same ability to cross the species barrier and infect humans."

“Some scientists suspect that if H5N1 has not caused a pandemic by now, then it will not, because it must be incapable of making the needed changes.”- ProMED mail 9 Oct 2005;

All these suggest that the reassortment of the pandemic strain is a rare event.

Even if it comes ….
We have experience influenza pandemic before…. Is it all that alarming???

ProMED-mail 9 Oct 2005, Source: The New York Times

The fear “is very much overdone, in my opinion,” said Dr E. Kilbourne, an emeritus professor of immunology at New York Medical College,

- factors that helped increase the flu’s virulence in 1918—the crowding together of millions of WWI troops in ships, barracks, trenches and hospitals—generally do not exist today for humans.
- In addition, more people now live in cities, where they have probably caught more flu, giving them immunity to later ones.
- “In 1918, you had lot of farm boys getting their 1st contact with city folks who’d had these things,” Dr Kilbourne said.

Finally, I would like to thank Infection Control Association, Singapore (ICAS) for the sponsorship.

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31 May 2012

Regards