

wound closure and improved team work among members of the operative team.

Conclusion: The Surgical Safety Checklists do enhance the communication among surgical team if the process is carried out faithfully. Swabs and instrument count remains the most important process before patient leaving Operating Theatre.

SYMPOSIUM 17 (SP 17)

HOSPITAL ACCREDITATION PROGRAM

SP 17-1

WHONET – TRACKING MICROBES FOR PATIENT SAFETY

Thomas F. O'Brien, MD, John Stelling, MD, MPH. *Brigham and Women's Hospital, WHO Collaborating Centre for Surveillance of Antimicrobial Resistance, Boston, United States*

Results generated by routine clinical microbiology laboratories are used to support clinical care decisions and the formulation of local antimicrobial therapy guidelines. Yet these richly detailed data are underutilized for monitoring, understanding, and responding to the evolution and local and regional movements of evolving microbial pathogens. We have developed the WHONET software to aid local staff, national authorities, and research in the capture and use of data generated by the clinical laboratories. Two priority areas of focus are the use of data for:

- Recognizing distinct microbial subpopulations, especially those of evolutionary and public health significance utilizing routine phenotypic data generated in routine work including antimicrobial resistance and biochemical phenotypes. We are currently exploring the use of MALDI-TOF signal spectra for this same purpose; and
- Tracking in real-time the temporal and geographic dissemination of these subpopulations in a healthcare facility, country, and worldwide. We have explored the use of configurable isolate filters and statistical algorithms, especially the SaTScan-supported Space-Time Permutation Model, to provide alerts to pre-designated local and national responders.

We have applied these analysis algorithms to: the national monitoring of community pathogens (for example outbreaks of shigellosis in Argentina), the local detection of outbreaks of healthcare-associated infections in individual facilities (including 45 U.S. facilities), and the transmission of resistance pathogens among facilities of healthcare network (a U.S. network of ten facilities in geographic proximity).

The desktop version of WHONET is primarily used around the world. We are now piloting a web-based version to increase the value of WHONET to all clinical staff in a facility, national authorities, researchers, and the general public.

SP 17-2

ANTIBIOTIC STEWARDSHIP AND HOSPITAL ACCREDITATION

Heiman Wertheim, MD PhD. *Oxford University Clinical Research Unit, Viet Nam*

Antibiotic stewardship (AS) refers to a combined set of activities and policies to improve the rational use of antibiotics in healthcare settings. Elements of an AS policy include a stable and restrictive list of antibiotics that can be used, standard treatment guidelines, audit and feedback of antibiotic prescriptions, surveillance of antibiotic use and resistance, and education at all levels. The combined goals of AS are: improving patient outcomes, containment of antibiotic resistance and increased cost-effectiveness of patient care. Several Northern European countries (e.g. Netherlands, Sweden) have proven that AS can keep antibiotic resistance at relatively low levels. But also countries already experiencing an antibiotic resistance problem can be successful with a targeted national approach. These programs require time and patience to set up. A stepwise approach to implementing AS according to local priorities may be the best way forward for many settings, particularly in low and middle income countries.

There are numerous barriers to implement AS programs in most countries. It can be challenging to create a good AS team with the right expertise and time to contribute. Most healthcare workers see AS as an additional burden to their already heavy workload, while it should be regarded as standard of

care. It would benefit the patient and public health if antibiotic stewardship is considered to be standard of care in all healthcare settings. Active AS teams should be present in any hospital seeking hospital accreditation to improve rational use of antibiotics and patient safety.

Abstract modified from: Laxminarayan R, et al. Antibiotic resistance-the need for global solutions. *Lancet Infect Dis.* 2013 Dec;13(12):1057-98. [http://dx.doi.org/10.1016/S1473-3099\(1370318-9\)](http://dx.doi.org/10.1016/S1473-3099(1370318-9)).

SP 17-3

INFECTION CONTROL ACCREDITATION PROGRAM

Andreas Voss *. *CWZ & RUMC, Nijmegen, The Netherlands*

At the time of the deadline for the abstracts the talk and idea's weren't really thought off. Most certainly, the Dutch Infection Control Accreditation Program will be presented, that is a cooperation of the professional societies; The Dutch Society of Clinical Microbiology (NVvMM, mainly MDs) and the Dutch Society of Infection Control Practitioners (VHIG).

In addition a quick-scan list will be presented on what seems to be the basic requirements for a well-functioning infection control unit.

SYMPOSIUM 18 (SP 18)

INFECTION AND INFECTION CONTROL IN LONG TERM CARE FACILITIES

SP 18-1

INFECTION CONTROL IN LONG TERM CARE FACILITY IN SINGAPORE

Lee Shu Lay, RN, RM, BHSN, MPH. *Thomson Medical Centre, Singapore*

The aging population in Singapore is rapidly increasing. Greater attention to manpower development for ILTC is expected, to meet growing demands and expectations from Singaporeans for higher standards of care. Agency for Integrated Care (AIC) was formed as an independent corporate entity under MOH Holdings (MOHH) in 2009 to look into the enhancement and integration of Long-Term Care sector.

Residential ILTC facilities are community hospitals, chronic sick hospitals and nursing home for the elderly. These facilities are all managed by the private sector, including Voluntary Welfare Organisations (VWOs). To enhance skills and professionalism across ILTC workforce, AIC extend training support for short courses in infection control. This is a one day course for registered nurses, enrolled nurses and nursing aides from ILTC institutions.

Another source of support for ILTC is the guideline for Intermediate Long Term care Facilities developed by the Infection Control Association (Singapore). This guideline is meant to assist health care providers to develop an effective infection control program with infection control policies that is applicable to their respective intermediate long term care setting, community care setting, sheltered home, behavioural health facilities, rehabilitation centres, and home care setting. The aim is to prevent and control healthcare associated infections. The contents include Transmission of Infection and Precautions, Multidrug Resistant Organisms, Infectious Diseases, Infectious Disease Outbreak, Cleaning and Disinfection, Waste Management, Kitchen, Laundry Management, Staff Welfare and components of an Infection Control Program in ILTC.

SP 18-2

INFECTION CONTROL IN JAPANESE LONG TERM CARE FACILITIES

Minori Tokui. *Himeji St. Mary's Hospital, Japan*

Our country is facing an unexampled aging society in recent years.

In 2014, 24.1% of total population in Japan was elderly people. Moreover, it is estimated that over 65 years old people will be one third of the population in 2035.

Healthy and safety aging is the important issue among the Japanese society. The present "Long Term Care insurance" in Japan was introduced in 2000, and it has tried to divide the systems of health, medical and welfare services to be independent, so as to provide a variety of services which clients would receive by their health status and other conditions.

Elderly persons exposed to the risk of infectious disease by aging, such as pneumonia, UTI, and the outbreaks of influenza and gastroenteritis are always scaring not only the other elderly but the caregivers.

According to the financial problem, cost-effective, safety and simple infection control is highly needed in long term care facilities in Japan, and the nurses are struggling to find the appropriate methods and systems. In this symposium, I would like to introduce the types of long term care facilities in Japan, and present some infection control trials in the long term care facilities.

SP 18-3**LONG TERM CARE FACILITIES SYSTEM IN TAIWAN**

Shyh-Dye Lee, M.D., M.P.H. *Graduate Institute of Long-Term Care, National Taipei University of Nursing and Health Sciences (NTUNHS), Taiwan; Department of Family I, Community Medicine, National Taiwan University Hospital (NTUH), Bei-Hu, Taiwan*

Long-term care (LTC) in Taiwan is grossly under developing and processing. Policy making and financing arrangements for LTC are now important and hot in Taiwan. In Taiwan, formulation of policy (and related programmes) objectives has progressed considerably ever since two decades before. The necessary social value system, working model, service scheme, delivery system, legal framework, and LTC worker & manager repositioning and nurturing, even establishing related certificate/licensure of the new discipline of care worker/management have been still under developing, but well focusing on related administrative supervising and accreditation on some related practices or delivery. Newly LTC Service Act and LTC Insurance Act legislation are still under-going in the congress (Legislative Yen) contemporarily. The basis of financing arrangements, pension system besides, LTC Insurance(LTCI) taskforce has been under planning at present. LTC demands/needs will exceed supply tremendously as expected, the resource deficit gap will be expected to deepen after LTCI launching then. Developing LTCI scheme is now a central headline for policy formulation, and government continues to take a leading role in consolidating financing and integrating the service systems. Now, people have only taken the rough message about LTC insurance launching in 2016(hopefully). For the processing of LTC globally, LTC facility is originally a place/site of collective accommodation & living where care on the activities even participations of those in needs is provided as a package. It refers to a specially designed setting where the services are provided for people with functional limitations/restrictions, mostly for those with moderately to severely impaired/dependent. In Taiwan, those with LTC needs have been well set in facility or non-facility scheme whatever still low relatively. LTC in facility (institutionalized care) has taken majority of LTC needs initially; current measures are concerned to facilitate the expansion of home-based or community-based rather than institutionalized care, rather, organizing the specific patterns of LTC, such as dementia care.

SYMPOSIUM 19 (SP 19)

FUNGAL INFECTIONS AND ENVIRONMENT**SP 19-1****THINK FUNGUS—PREVENTION AND CONTROL OF FUNGAL INFECTIONS**

Tom M. Chiller. *Centers for Disease Control and Prevention, United States*

SP 19-2**THE MOLECULAR EPIDEMIOLOGY OF HUMAN FUNGAL PATHOGENS**

Shu-Ying Li. *Centers for Disease Control, Ministry of Health and Welfare, Taiwan*

SP 19-3**INSIGHTS INTO CRYPTOCOCCAL MENINGITIS IN HIV-UNINFECTED CHINESE PATIENTS**

Liping Zhu. *Department of Infectious Diseases, Huashan Hospital, Fudan University, Shanghai 200040, China*

Cryptococcus neoformans (*C. neoformans*) is the most common cause of fungal infections of the central nervous system in immunocompromised

patients with or without AIDS. However, cryptococcal meningitis in apparently healthy individuals is also increasingly being reported, especially from Asia. This raises the question of whether the so-called healthy hosts are, in fact, accompanied with genetic immune predispositions. Host immune responses are initiated by pattern recognition receptors (PRRs), including Toll-like receptors (TLRs), C-type lectin receptors (CLRs), NOD-like receptors (NLRs), and others. In the last years, several studies have identified genetic polymorphisms in these receptors to be associated with susceptibility to *C. neoformans*. Here, we review the contribution of genetic polymorphisms of the PRRs to susceptibility to *C. neoformans* infection and some of our genetic studies are included.

SYMPOSIUM 20 (SP 20)

ENVIRONMENTAL CLEANING FOR MDRO CONTROL**SP 20-1****CONTROL OF MULTIDRUG RESISTANT GRAM-POSITIVE BACTERIA: LESSONS FROM RECENT INTERVENTIONAL STUDIES IN ICUS**

Stephan Harbarth. *Infection Control Program, Geneva University Hospitals, Geneva, Switzerland*

Several major trials published last year questioned the effectiveness of universal screening and contact precautions in controlling MRSA. These trials generally recommend universal decolonization as part of bundles to control MRSA, especially in ICUs, with some even concluding that universal decolonization should replace active screening and contact precautions. However, emerging resistance to agents used for decolonization, such as mupirocin and chlorhexidine, is a major concern. Several other studies confirmed a combination of hand hygiene enhancement, screening, contact precaution and targeted decolonization as a more viable MRSA infection control strategy for specific population groups.

In summary, universal decolonization is an acceptable MRSA control strategy for intensive care units; however, close monitoring of chlorhexidine and mupirocin resistance is warranted. As a strategy, screening and contact precautions are suitable for hospital-wide MRSA control. Targeted decolonization is a proven measure for patients undergoing clean surgery. Enhancement of hand hygiene is a core measure regardless of the strategy.

SP 20-2**RECENT DEVELOPMENT OF NANOTECHNOLOGY FOR ENVIRONMENTAL CONTROL OF COLONIZATION DUE TO MULTIDRUG-RESISTANT BACTERIA IN HEALTHCARE FACILITIES**

Muh-Yong Yen^{a,*}, Wen-Sen Lee^b, Tai-Chin Hsieh^b, Po-Ren Hsueh^c.

^a*Division of Infectious Disease, Taipei City Hospital, National Yang-Ming University, Taiwan;* ^b*Division of Infect. Disease, Wan Fang Medical Center, Taipei Medical University, Taiwan;* ^c*Departments of Laboratory Medicine and Internal Medicine, National Taiwan University Hospital, National Taiwan University College of Medicine, Taipei, Taiwan*

The 2003 SARS epidemic resulted in a systemic renovation for the strategy of infection control, aiming to approach the goal of zero tolerance instead of 3–5% healthcare-associated infection (HAI) rate. Among those infection control measures and processes, hand hygiene campaign is the most cost-effective and widely accepted practice in HAI prevention. Although hand hygiene campaign has been promoted in Taiwan with limited success, environmental issue was still ignored as insignificant factor of HAIs. However, the cross transmission of pathogens to patients occurred not only result directly from hands of healthcare workers, but also from indirect contact of hospital environment or patient's surroundings. Studies from SARS epidemic and outbreaks of healthcare-associated multidrug-resistant organisms (MDROs), such as carbapenem-resistant *Acinetobacter baumannii* and vancomycin-resistant enterococci, have raised the new scope to examine the importance of environmental impact, that is, fomites transmission, when the goal of infection prevention was set at zero tolerance besides of outbreak control. There were several studies regarding the control of fomites transmission through additional environmental disinfection around patient's beds and surroundings. However, there have always been the questions of quality instability and inconsistency for the manual cleaning and disinfection process. Recent advancements in medical nanotechnology may play a major role in