Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
Keynote Lectures (KL)

25 November 2017

KL 1
Chlorhexidine bathing and nasal decolonization to prevent infection and reduce antibiotic resistant pathogens
Susan S. Huang. Division of Infectious Diseases, University of California Irvine School of Medicine, United States

Chlorhexidine antiseptic bathing soap and nasal decolonization have been successfully used in large clinical trials to reduce multi-drug resistant organisms and prevent infection. Clinical trials have involved ICUs, non-ICUs, and post-hospitalization settings to reduce pathogens such as methicillin-resistant Staphylococcus aureus and bloodstream infections.

This presentation will present the evidence from recent large clinical trials on the value of decolonization. Specifically, it will describe the results of the REDUCE MRSA Trial that propelled the use of chlorhexidine antiseptic bathing as standard of care in U.S. ICUs. In addition, results of the ABATE Infection Trial in non-critical care units and the Project CLEAR Trial evaluating decolonization in recently hospitalized MRSA carriers will be discussed. Finally, implementation pearls related to proper use of chlorhexidine and nasal decolonization products will be shared.

KL 2
Risk stratification and treatment of chronic hepatitis B: towards the eradication of hepatitis B virus infection
Jia-Horng Kao. Graduate Institute of Clinical Medicine, National Taiwan University, College of Medicine, Taipei, Taiwan; Department of Internal Medicine, Hepatitis Research Center, and Department of Medical Research, National Taiwan University Hospital, Taipei, Taiwan

Hepatitis B virus (HBV) infection is the major cause of chronic hepatitis, cirrhosis and hepatocellular carcinoma (HCC) worldwide, especially in the Asia-Pacific region. Several hepatitis B viral factors predictive of clinical outcomes in HBV carriers have been identified. The REVEAL-HBV study from Taiwan illustrated the strong association between HBV DNA level at study entry and risk of HCC overtime.

In this community-based cohort study, male gender, older age, high serum alanineaminotransferase (ALT) level, positive HBeAg, higher HBV DNA level, HBV genotype C infection and core promoter mutationare independently associated with a higher risk of HCC. Another large hospital-based ERADICATE-B cohort of Taiwanese patients further validated the findings of REVEAL-HBV. The risk of HCC started to increase when HBV DNA level was higher than 2000 IU/mL. Both HBV DNA and HBsAg levels were shown to be associated with HCC development. While HBV DNA level had better predictive accuracy than HBsAg level when investigating the overall cohort, in patients with HBV DNA level <2000 IU/mL, HBsAg level ≥1000 IU/mL was identified as a new independent risk factor for HCC. With the results from REVEAL-HBV, a risk calculation for predicting HCC in non-cirrhotic patients has been developed and validated by independent cohorts (REACH-B). Current antiviral therapies, interferon and nucleos(t)ide analogues, have been proven to reduce the progression of chronic hepatitis B (CHB). However, covalently closed circular DNA (cccDNA) of HBV persists, resulting in viral relapse after the discontinuation of treatment. Several novel agents through viral and host targets approaches are under investigations towards functional cure of HBV. On one hand, direct acting antivirals (DAA) targeting virus itself, such as HBV new polymerase inhibitor, entry inhibitor, engineered site-specific nucleases and RNA interference, could inhibit amplification of cccDNA as well as intrahepatic HBV infection and eliminate or silence cccDNA transcription. Inhibitors of HBV nucleocapsid assembly suppress capsid formation and prevent synthesis of HBV DNA. On the other hand, host targeting agents (HTA) include lymphotxin-β receptor agonist, toll-like receptor agonist, immune checkpoint inhibitors and adenovirus-based therapeutic vaccine. Through enhancing innate and adaptive immune responses, these agents could induce non-cytolytic destruction of cccDNA or attack HBV-infected hepatocytes. With the implementation of universal hepatitis B vaccination and these promising therapeutic approaches, we hope to reach global HBV control in the middle of this century.

KL 3
In CAST we trust: but in which of several?
Gunnar Kahlmeter. The European Committee on Antimicrobial Susceptibility Testing (EUCAST), The EUCAST Development Laboratory, Clinical Microbiology, Central Hospital, 351 85 Växjö, Sweden

In 1996, there were seven different breakpoint systems in use in Europe. A microorganism could be considered susceptible in France, intermediate in Germany and resistant in Sweden. The systems were from France, Germany, Norway, Sweden, the Netherlands, the United Kingdom and the USA.
Pneumonia is the third leading cause of death in Japan and a huge burden on our healthcare system. To improve the quality of pneumonia treatment, new Japanese Respiratory Society (JRS) guidelines for the management of adult pneumonia have been updated in April 2017. One of the most important parts of new guidelines are about pneumonia in the elderly, especially the management of aspiration pneumonia. Among the fatal pneumonia cases in Japan, more than 97% were elderly patients (aged 65 and older). Because Japan is a super-aged society (the ratio of the population aged 65 and older to the total population is over 21%; Japan now has a ratio of 26%), we aim to establish our own new guidelines for better management of pneumonia in the elderly. For the first step of management of pneumonia, the guidelines recommend determining the type of pneumonia such as community-acquired pneumonia (CAP), nursing and health care-associated pneumonia (NHCAP) and hospital-acquired pneumonia (HAP). The CAP recommendations are to evaluate whether patients are in the status of sepsis, and assess the severity of pneumonia to determine the need for admission, and to choose optimal empiric therapy. The NHCAP and HAP recommendations are to evaluate patients whether they are in the end stage of some disease, decrepitude or high risk of recurrent aspiration pneumonia. Palliative care will be more suitable than intensive care for these patients. If NHCAP/HAP patients do not have these conditions, the recommendations are to evaluate whether patients are in the status of sepsis, the severity of pneumonia and the risk factors for drug-resistant pathogens to choose optimal empiric therapy. In contrast to our strategies, healthcare-associated pneumonia (HCAP) is excluded from HAP in the updated American Thoracic Society (ATS) guidelines for HAP. HCAP will be integrated into CAP as a part of community-onset pneumonia in the next ATS guidelines for CAP. So many countries, so many clinical issues. I would like to stress the importance of establishing regional best guidelines for the management of pneumonia.
Previous guidance came from expert opinion, a biased method yielding unreliable and often competing recommendations. The importance of these two new guidelines is the confidence in and strength of the recommendations because of use of techniques of systematic review, meta-analysis and the GRADE system of evaluating data. This approach provides the level of evidence and the guideline panel provides the strength of the recommendation. The strength of the two guidelines is reinforced by this, and is sufficient for government regulatory use. The strong recommendations are provided below, and provide the background for the next step, appropriate implementation programs.

| Recommendation Area                        | WHO  | CDC  |
|-------------------------------------------|------|------|
| Timing of antibiotic prophylaxis           | Strong | Strong |
| No antibiotic prophylaxis prolongation     | Strong | Strong |
| Mechanical bowel prep and oral antibiotics | Strong | Not addressed |
| Hair removal (not done or clippers)        | Strong | Strong |
| Surgical hand preparation                  | Strong | Strong |
| Surgical site preparation with             | Strong | Strong |
|   alcohol/antiseptic                       | (CHG + alcohol) | (CHG or PI either + alcohol) |
| Perioperative oxygenation                  | Strong | Strong |
| Perioperative normothermia                 | Conditional | Strong | Global |
| Glycemic control                           | Conditional | Strong |

Current implementation recommendations center upon SUSP and bundles, and are critical to improving patient care.

**KL 7**

**Donor-derived infections in transplantation**

Michael G Ison. *Northwestern University, United States*

Abstract not supplied

**KL 8**

**Emerging zoonotic MERS-CoV disease**

Ziad A Memish. *College of Medicine, Alfaisal University, Riyadh, Kingdom of Saudi Arabia*

Middle East Respiratory Syndrome-Coronavirus (MERS-CoV) is a novel coronavirus discovered in 2012 and is responsible for acute respiratory syndrome in humans. Since then, multiple outbreaks have been reported in or been epidemiologically linked to the Arabian Peninsula. Up to March, 2017, the Saudi authorities reported a total of 1931 laboratory-confirmed cases and at least 741 related-deaths.

A limited number of coronaviruses is known to cause human disease. Most of known coronaviruses infect and circulate in animals, mainly bats. So when it comes to a new novel coronavirus with limited geographic distribution, one would think of a zoonotic disease with animal reservoir. This proved to be true with SARS and seems to be the case with MERS-CoV. The origin of the virus and the extent of its involvement in both human and animal populations remain hot topics that are being explored with phylogenicity and surveillance studies.

Our experience with MERS-CoV is of zoonotic nature, transmitted to humans from infected dromedary camels. The origin of MERS-CoV viral infection is not very well understood. It could have originated in bats and transmitted to dromedary camels at some unknown time in the past. The virus seems to be well maintained in dromedaries, which serve as a reservoir with a spill over human infections. Sporadic human cases in areas where MERS-CoV is endemic in dromedary camels are likely to continue to happen. The awareness of the disease and the easy access to a more developed health care system could explain the higher incidence of MERS-CoV diagnosis in Saudi Arabia compared to other countries in Africa where the disease is likely to be overlooked.

Larger scale serological screening of human populations in areas where MERS-CoV is endemic in dromedary camels should be considered. More extensive screening of bats in Saudi Arabia and East Africa, especially the Egyptian tomb bat, needs to be considered. Screening dromedary camel populations in Africa (Sahara desert and surrounding areas), and East Asia (Pakistan, Afghanistan, and Iran) will help better delineate the geographical distribution of dromedaries involvement.

Experimental MERS-CoV inoculation of other domestic animals will help define predisposed groups and should be considered so as to guide screening efforts for other potential reservoirs.

26 November 2017

**KL 9**

**Vaccines for HPV: first 10 years**

Mario Poljak. *University of Ljubljana, Faculty of Medicine, Ljubljana, Slovenia*

Prophylactic human papillomavirus (HPV) vaccination programs constitute major public health initiatives worldwide. Following extensive evaluations in clinical trials, the first decade of routine HPV vaccine use provides overwhelming evidence of the vaccines’ safety and their real-life effectiveness. The impact of HPV vaccination in real-world settings has become increasingly evident, especially among girls vaccinated before HPV exposure in countries with high vaccine uptake. Maximal reductions of approximately 90% for HPV infection with vaccine-targeted types, approximately 90% for genital warts, approximately 45% for low-grade cytological cervical abnormalities, and approximately 85% for high-grade histologically proven cervical abnormalities have been reported. These declines were evident not only in vaccinated females, but also in unvaccinated females and males, strongly suggesting herd protection. Despite an excellent safety profile consistently demonstrated in clinical trials and confirmed in real-life settings, recently invented controversial syndromes allegedly linked to HPV vaccines temporarily compromised some previously very successful vaccination programs and significantly contributed to the failure of HPV vaccine implementation in some countries with the highest prevalence of cervical cancer. However, several safety studies failed to confirm any association of these syndromes with HPV vaccination in various settings and geographic locations. The main challenges remain implementing HPV vaccination in national vaccination programs, especially in low-and middle-income countries with the highest burden of cervical cancer, and achieving and sustaining high vaccine coverage rates.
KL 10
Infection prevention & quality
Moi Lin Ling. Singapore General Hospital, Singapore

Healthcare-associated infections (HAIs) are a major patient safety problem. Overall, an estimated 5–10% of hospitalized patients still experience a HAI every year, resulting in significant morbidity and mortality. Considerable progress has been made in identifying evidence based, preventive interventions to reduce these HAIs. Successful implementation of these interventions will usually require organizational and behaviour change. Emphasis is given to a focus on systems with attention made to engagement of local multidisciplinary teams to assume ownership of the improvement initiative, creation of centralised support for the technical work, encouraging local adaptation of evidence based interventions and creating a collaborative culture within the local unit and larger system. These are more likely to succeed in an environment of institutional safety culture led by leadership.

Measurement of the performance is critical to evaluate these initiatives. Achieving high value for patients has become the overarching goal of health care delivery, with value defined as the health outcomes achieved per dollar spent. Measuring, reporting, and comparing outcomes are important steps toward rapidly improving outcomes and making good choices about reducing costs. This is very much in line with the objectives of any Infection Prevention and Control program where we aim to protect the patient and staff in the most cost-effective manner.

Cost-effectiveness studies on these improvement initiatives are limited, especially in the Asia Pacific region. However, lessons may be drawn from the few limited studies to help IPC teams develop cost-effective strategies to reduce HAIs in settings with limited resources.

KL 11
Clostridium difficile: epidemiology, diversity and evolution in Asia
Thomas V. Riley, School of Veterinary & Life Sciences, Murdoch University; School of Medical & Health Sciences, Edith Cowan University; Department of Microbiology, PathWest Laboratory Medicine, Perth, Western Australia

Clostridium difficile causes a significant number of healthcare-related infections in the western world. Its highly resistant spores allow it to persist in healthcare facilities, causing diarrhea primarily in patients who have recently been treated with antimicrobials. C. difficile infection (CDI) has been studied in detail in North America and Europe, where large outbreaks have occurred since the early 2000s. However, the epidemiology of CDI in Asia is largely unknown due to a lack of local awareness and testing. Indeed, little is known about the strains of C. difficile circulating in this region of the World. In a recent survey of CDI performed in 13 countries in the Asia-Pacific region, the most common C. difficile strains isolated were ribotype (RT) 017 (16.7%) followed by RTs 014/020 (11.1%), 018 (9.9%), 002 (9.2%), 012 (4.8%) and 369 (4.1%), with wide variation between countries. Binary toxin-positive strains of C. difficile were detected rarely. Overall disease severity appeared milder, and mortality and recurrence were lower than in North America and Europe, however, the focus of the study was toxigenic strains. Our laboratory has studied CDI and C. difficile carriage extensively in Indonesia, Malaysia and Thailand. The most common strains isolated were non-toxigenic strains belonging to RTs not previously described, and there was great diversity. RT 017 was again often found. Taken together, what do these studies suggest? First, it is likely that the predominant molecular types of C. difficile in Asia differ from other regions of the World. The diversity of RTs found suggests that Asia has its own clade of C. difficile, most likely clade 4. Clade 4 gained its pathogenicity locus quite late in evolutionary history, about 500 years ago, and RTs such as 017 only acquired a tcdB gene. It is possible that these non-toxigenic strains are currently fulfilling a protective role in Asia. Continued education about, and surveillance of, CDI in Asia are required to monitor the burden of disease and prevent the emergence of virulent antimicrobial-resistant strains.

KL 12
Global patterns of multidrug-resistant tuberculosis evolution
Keira A. Cohen1,2, Abigail L. Manson3, Thomas Abeel1,3, Christopher A. Desjardins2, Bruce W. Birren2, Ashlee M. Earl2. 1Johns Hopkins School of Medicine, Baltimore, United States, 2Broad Institute of MIT and Harvard, Cambridge, United States, 3University of Delft, Netherlands

Molecular diagnostic tests have revolutionized the diagnosis of drug-resistant Mycobacterium tuberculosis (M. tb). One such test, GeneXpert, enables identification of patients harboring rifampin-resistant strains; however, this test may not identify drug-resistant M. tb at the earliest available opportunity. Elucidation of the routes through which drug-resistant M. tb emerges will allow for improved design of front-line molecular diagnostics.

We constructed a global dataset of 5310 whole genome sequences of M. tb strains that derived from 14 published studies and 8 newly sequenced projects. The majority of strains were isolated from patients in Africa, Europe and Asia, with lesser representation from the Americas. We utilized an array of whole genome comparative techniques to assess relatedness among strains and to establish the order and timing of acquisition of drug resistance mutations. Our strain set represented all seven known global lineages of M. tb. Forty-one percent of strains contained at least one known drug resistance-conferring mutation; 26% and 5%, respectively, were classified as genotypic multidrug resistant (MDR) and extensively drug resistant (XDR). Using a parsimony-based phylogenetic reconstruction, we determined that isoniazid resistance overwhelmingly arose before rifampin resistance. For phylogenetic loci at which a GeneXpert-detectable rifampin resistance-conferring mutation arose, additional resistances to isoniazid,
streptomycin and ethambutol had been previously acquired or co-occurred in a majority of cases. In a large global dataset of M. tb genomes, consistent patterns of drug-resistance emergence were observed. In particular, isoniazid resistance overwhelmingly arose before rifampin resistance across all lineages, geographic regions, and time periods. While GeneXpert allows for earlier clinical initiation of MDR TB regimens, by the time a rifampin-resistant strain is detected by this assay, in a majority of cases additional drug resistances are already present. Knowledge of mutations that occur early in the path toward multiple drug resistances should be used to improve the design of first-line molecular diagnostics for drug-resistant M. tb.

KL 13
Antimicrobial stewardship practice in Taiwan
Yin-Ching Chuang. Chi Mei Medical Center, Liouying, Taiwan

Antimicrobial resistance (AMR), a serious threat to public health, causes major challenges to social and economic issues worldwide. Among countries, Asia is an epicenter of antimicrobial resistance. Taiwan, one of the Asian countries, also plays a crucial role in combating antimicrobial resistance. The introduction including the history of infectious control in Taiwan and Taiwan’s experience of conducting ASP will be firstly presented. In fact, the existence of the practice guidelines on antimicrobial resistance could date back to the implementation of public employee insurance (PEI) and labor insurance (LI). The relevant standard and regulations have become stricter since national health insurance was initiated. Without any enforcement rules being laid down, each hospital took their action actively or passively to perform ASP even when ASP terminology had not been coined. Until 2014, Taiwan CDC officially implemented ASP. Under the guidance of CDC, strategic planning was developed and promoted. The majority of the hospitals started to comply with the policy and executed ASP unanimously ever since. Next, other items including the improvement of healthcare system, drug regulation system, laboratory capacity, surveillance structures and national policy will be further elaborated in details. The overall performance results will also be fully discussed (described). A review of the literature on ASP in Taiwan revealed most hospitals demonstrate an improved outcome including antimicrobial consumption, healthcare-associated infection, laboratory capacity and multidrug-resistant organisms. In conclusion, to address this issue, ASP should be conducted immediately with the use of all available resources even though not all required elements are ready. More importantly, the success of ASP implementation lies in the joint cooperation among the government, medical society, hospital personnel, and society. The overall outcome of the ASP program may be enhanced by all the initiatives and efforts involved.

KL 14
Enterovirus A71 and D68: update
Tzou-Yien Lin. Professor of Pediatrics, Chang Gung University College of Medicine, Chang Gung Memorial Hospital, Linkou, Taiwan

Enterovirus 71 (EV71) usually causes mild infections in children; however, a few of them can develop encephalomyelitis that resulted in fulminant cardiopulmonary collapse. Outbreaks with high mortality continue to threaten health in children in West Pacific and European regions. Early detection and prompt treatment is the mainstay of management. Currently no antiviral is available and the treatment is mainly supportive. We developed a stage-based management program for frontline pediatricians to provide the best of care and improve the clinical outcome. Meanwhile, neurological and respiratory rehabilitation program remains necessary to ensure the quality of life for some survivors with neurologic & psychiatric sequelae. Recently, the enterovirus D68 (EV D68) outbreak led to more than a thousand confirm cases from mid-August 2014 to mid-January 2015 in the United States, of whom around 60% of admitted cases experienced severe respiratory illness and required intensive care. A substantial of severe cases were less than 5 years old and had a history of asthma or reactive airway disease. In addition to causing severe respiratory illness, the EV D68 outbreak is temporally and geographically linked to acute flaccid myelitis clusters during the 2014 outbreak. Although it remains debatable whether the EV D68 infection directly causes acute flaccid myelitis, alarms begin to ring as more and more EV D68–associated neurological cases are reported worldwide. In Taiwan, two EV D68–associated acute flaccid myelitis cases are reported in 2016-2017 and suffer from neurological sequelae. From the experiences gained during several EV71 outbreaks, we have established a national enteroviral surveillance network and developed effective and prompt public health measures and policies against EV71. Importantly we believe the enhancement of international collaboration & information sharing would be important for further control of EV71 and EVD68 in the near feature.

KL 15
MDR/XDR TB treatment update
Chen-Yuan Chiang. International Union Against Tuberculosis and Lung Disease, Paris, France; Division of Pulmonary Medicine, Department of Internal Medicine, Wan Fang Hospital, Taipei Medical University, Taipei, Taiwan

The WHO guidelines on treatment regimens for multidrug-resistant tuberculosis (MDR-TB) published in 2011 recommend that:
1. four second-line anti-tuberculosis drugs likely to be effective, as well as pyrazinamide, should be included in the intensive phase.
2. an intensive phase of 8 months and a total duration
of 20 months is suggested for most patients newly diagnosed with MDR-TB, and the duration may be modified according to the patient’s response to therapy.

A 9-month MDR-TB regimen piloted in Bangladesh has achieved a high cure rate. The shorter MDR-TB regimen consisting of high dose gatifloxacin (G, Gfx), clofazimine (C, Cfz), pyrazinamide (Z, PZA) and ethambutol (E, EMB) throughout, supplemented by kanamycin (K, Km), prothionamide (P, Pto), and double-dose isoniazid (H, INH) in the intensive phase. The treatment duration of the intensive phase was four months (extended to a maximum of six months until sputum smear conversion), and the duration of the continuation phase was five months. In the most recently reported cohort of 315 consecutive MDR-TB patients receiving this regimen, 435 (84%) had a successful treatment outcome, 29 (6%) died on treatment, 40 (8%) were lost to follow-up, 7 (1%) failed, and 4 (1%) relapsed.

This regimen was introduced in Niger with the modification to prolong the continuation phase to 8 months. Of the 65 MDR-TB patients treated in Niger, 58 (89%) were cured, 6 (9%) died, and 1 (2%) was lost to follow-up. Among the 58 cured, 49 (84%) remained culture-negative at 24 months follow-up, and no relapse was documented. The “Bangladesh regimen” was also used in Cameroon with three modifications, (1) an extension of the continuation phase from 5 to 8 months, (2) a standard dose of gatifloxacin (400 mg), and (3) prothionamide given throughout the treatment course. Of the 150 patients, 134 (89%) had a successful treatment outcome, 1 (1%) failed, 10 (7%) died and 5 (3%) were lost to follow-up. (6) Furthermore, an observational study of a modified Bangladesh regimen that used moxifloxacin 400 mg to replace high dose gatifloxacin was piloted in 9 countries of francophone Africa, namely Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d’Ivoire, DR Congo, Niger, Rwanda. Of the 1006 MDR-TB patients enrolled, 821 (82%) had treatment success. Updated data from Bangladesh reveal that high-level resistance to fluoroquinolones was associated with an unfavourable outcome in MDR-TB patients treated with shorter MDR-TB regimens; the proportion of favourable outcome among MDR-TB patients with high-level resistance to fluoroquinolone decreased to around 50%.

WHO has published treatment guidelines for drug-resistant tuberculosis – 2016 update, in which recommendations for regimens with a long treatment duration are maintained and new recommendations on the introduction of shorter MDR-TB regimens are added: In patients with rifampicin-resistant or multidrug-resistant TB who have not been previously treated with second-line drugs and in whom resistance to fluoroquinolones and second-line injectable agents has been excluded or is considered highly unlikely, a shorter MDR-TB regimen of 9–12 months may be used instead of a conventional regimen.

KL 16
Reactive oxygen therapy, a serious antibiotic alternative?
Matthew Dryden, Hampshire Hospitals and Southampton University, United Kingdom

The main solution to the global antibiotic resistance crisis is reducing the volume of antibiotic use in medicine, agriculture and the environment. However there is also a pressing need for novel antimicrobials. Despite much rhetoric, there are few entirely novel agents in development. The only such therapy to reach clinical use is one using Reactive Oxygen Species (ROS), oxygen radicals, as an antimicrobial mechanism. ROS can be delivered to the site of infection in various formats. ROS is highly antimicrobial against Gram positive and negative bacteria, including multi-resistant strains, viruses and fungi. It prevents and breaks down biofilm. These functions make ROS potentially highly suitable for chronic inflammatory conditions, where antibiotics are frequently over-used and relatively ineffective: chronic wounds, ulcers and burns; chronic rhinosinusitis, chronic bronchitis, bronchiectasis, cystic fibrosis, ventilated airways; recurrent cystitis; and prosthetic device infection. ROS could also have an important role in infection prevention, antimicrobial stewardship and surgical prophylaxis. Much clinical investigation remains to be delivered on ROS therapy but in vitro work on infection models and early clinical evaluations are extremely promising.

27 November 2017
KL 17
Antibiotic resistance has a language problem
Marc Mendelson, Division of Infectious Diseases & HIV Medicine, Department of Medicine, Groote Schuur Hospital, University of Cape Town, Cape Town, South Africa

Although not a new problem, the field of antibiotic resistance has seen an unprecedented influx of role players from outside the medical specialties, brought together to address increasing levels of drug resistant infections. These multi-disciplinary role players, which include the public, need to speak the same language and critically, to understand its terminology. A common language is needed to discuss such disparate activities as surveillance, stewardship, infection prevention, environmental and animal health, governance, market pricing, and health-seeking behaviour for antibiotics.

Current evidence from a limited number of studies concerning public understanding of antibiotic resistance, suggests that the most commonly used terms are ill-understood and do not connect with their intended audience. Moreover, the war rhetoric that surrounds the “battle” between humans and resistant microbes fails to deliver important ecological messages such as the role that bacterial populations, which live in and on humans have, in determining health and disease.

This plenary will examine the challenges and barriers that our current language has created, and will explore solutions and expansion of the lexicon to achieve the aims of the international response to this public health crisis.
KL 18
Vaccines for travel, vaccines for adults: moving targets!
E. David G. McIntosh. Imperial College, London, United Kingdom

When it comes to vaccination, there are a number of similarities between travellers and adults in general. They tend to be busy, unaware or inadequately educated about diseases, worried about side effects of vaccination, worried about the costs of vaccination, and sometimes prepared to take the risk of not being vaccinated. From the point of view of the vaccinator, these individuals are “moving targets” because, in many cases, they are healthy and in no need of and/or having no regular contact with healthcare providers. They may only think about the need for vaccination when they hear or read about an individual with a vaccine-preventable disease or do some background reading about a travel destination. And in the event of an outbreak, it becomes the responsibility of the healthcare provider to locate and vaccinate those at risk.

It is important to understand the healthcare needs of travellers and adults, in terms of vaccine-preventable diseases, to raise awareness of disease, to anticipate epidemiology and the need for outbreak control, and to increase vaccination rates. This can be done through social media, wider education, the workplace, the travel agent, the Airlines and public health agencies.

Of particular interest are bacterial diseases such as meningococcal and pneumococcal infection, and pertussis, the mycobacterial disease tuberculosis, and viral diseases such as influenza, yellow fever, hepatitis, human papillomavirus (HPV), poliomyelitis and rabies. The risk of these to the traveller and to the adult in general varies according to factors such as previous and current exposure/immunity, underlying pre-disposing conditions, behaviour and epidemiology. These risks and the role of vaccination will be discussed. There will also be a discussion of the potential role of future vaccines against healthcare-associated infections, antimicrobial resistant organisms and emerging viral infections.

KL 19
Reducing device associated infections: the case of catheter associated urinary tract infections
Paul Anantharajah Tambyah. National University of Singapore, Singapore

Healthcare is increasingly complex with more and more devices being used in older and sicker patients. This has greatly improved the quality of life for millions of people. However, the dark side of these invasive devices has been the risk of infection. These infections are extremely difficult to treat because of the presence of the biofilm which rapidly covers all surfaces both internal and external of all devices. In addition to being difficult to treat, many of these infections are multi-drug resistant and outbreaks have been associated with invasive devices most notably recently endoscopes. Catheter associated urinary tract infections are the most common healthcare associated infections in hospitals and nursing homes and they are a major reservoir of resistant pathogens. There have been a number of attempts to reduce device associated infections over the last few decades but few have been successful. Recent advances in materials science are promising but new approaches need to be developed to take advantage of better understanding of the microbiome in both the host and the biofilm on the device.

KL 20
Viral and host factors involved in enterovirus 71 infection: potential applications in therapy and prophylaxis
Shin-Ru Shih. Chang Gung University, Taiwan

Abstract not supplied