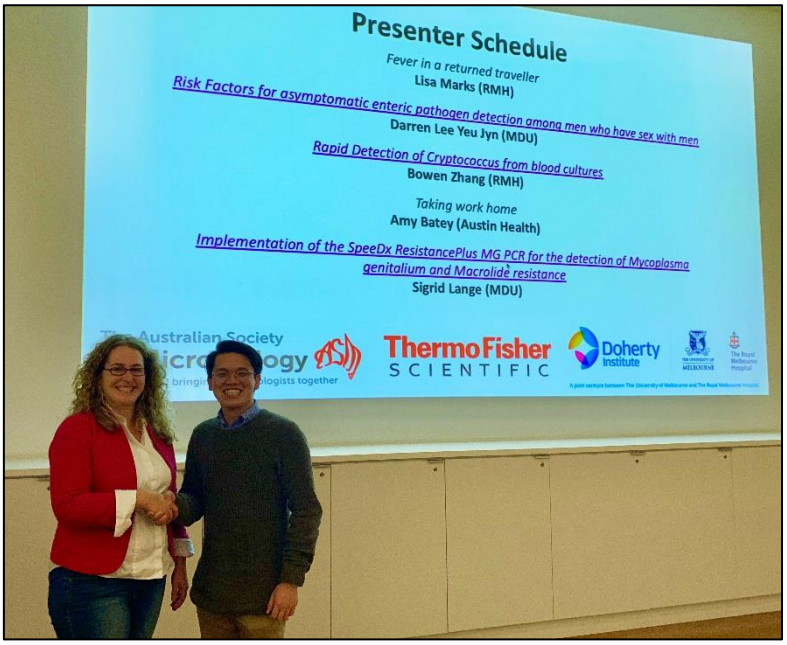
News from the Hospitals Event Report
23rd May 2019

Proudly sponsored by ThermoFisher

News from the Hospitals was presented by the Australian Society for Microbiology (ASM) Victorian Branch, held at the Peter Doherty Institute for Infection and Immunity. The evening began with the VIC Branch Annual General Meeting (AGM) conducted by Victorian Chair Catherine Satzke. The AGM was followed by five excellent presentations chaired by Dr. Susan Ballard, Principle Scientist at the Microbiological Diagnostic Unit Public Health Laboratory (MDU PHL). Speakers ranged from the Royal Melbourne Hospital, MDU PHL, and Austin Health. Presentations featured a range of fascinating case studies encountered in the medical microbiology laboratory and the research being conducted to improve diagnosis and management of infectious disease. With nearly 100 attendees, it was an enjoyable and scientifically stimulating meeting.

Congratulations to Darren Lee (MDU PHL) who was the winner of the ASM membership prize for a medical scientist up to Grade 1 Year 4 or equivalent, for his presentation on "Risk Factors for asymptomatic enteric pathogen detection among men who have sex with men".



Pictured: Catherine Satzke and Darren Lee

A special thank you to Dr Ballard for chairing the event and to all the speakers for their informative talks. A warm thank you is extended to ThermoFisher for their generous sponsorship of the evening, and to the Doherty Institute for use of their lecture theatre, and to the organisers of the event.

Abstracts submitted by each of the presenters can be found on the following pages in order of appearance on the night.

Report contributed by the Medical Microbiology Working Group

Lisa Marks (RMH)
Fever in a returned traveller

A male patient was recently transferred to The Royal Melbourne hospital intensive care unit (ICU) from Thialand with confirmed melioidosis. After multiple samples were collected over a period of time *Burkholderia pseudomallei* was isolate from a sample of prostate chips. Laboratory recautions had to be adhered to too limit risk to laboratory staff handling the samples. Melioidosis is caused by the bacteria *Burkholderia pseudomallei*. It is a small gram negative aerobic rod. It is found in the soil and water in tropical regions of northern Australia and South-east Asia. Infection is acquired through percutaneous inoculation, inhalation or ingestion of the bacterium. It is very rarely transmitted from person to person. The incubation period of *B.pseudomallei* is 1-21 days. However, the infection can be latent for up to 62 years. Pneumonia is the most common presentation of melioidosis. Other presentations include skin abscesses or ulcers, internal abscesses of the prostate, kidney, spleen and liver and neurological illnesses. Melioidosis has a mortality rate of more than 50%. Diagnosis of melioidosis can only be made by the isolation of *B. pseudomallei*. *B. pseudomallei* will grow on standard laboratory media such as horse blood agar (HBA) or maconkey agar (MAC). Selective media such as Ashdown's media (ASA) can be used to increase the likelihood of isolating *B. pseudomallei*. *Burkholderia pseudomallei* has been identified as a potential bioterrorism agent due to it being found in nature in only certain parts of the world, its ability to cause disease that can make people very sick and possibly die.

Darren YJ Lee (MDU PHL)
Risk factors for asymptomatic enteric pathogen detection among men who have sex with men

Over the past decade, there have been increasing reports of outbreaks of enteric pathogens largely occurring in men who have sex with men (MSM). In particular, shigellosis has emerged as a major public health concern, mainly due to the high rates of resistance to clinically relevant antimicrobials. In this study, we detected *Shigella* spp. in 1% of asymptomatic MSM attending the Melbourne Sexual Health Centre (MSHC) for routine sexually transmitted infections (STI) screening. Interestingly, anal swabs from 57/519 men (11%; 95% CI: 8.4-14.0%) also tested positive for an enteric pathogen such as *Campylobacter* spp., astrovirus, *Yersinia* spp. and Shiga-toxin-producing *E. coli* (STEC) using the Faecal Pathogen M panel (AusDiagnostics). There was no difference in the prevalence of enteric pathogen carriage between different age groups, HIV status, or PrEP and non-Prep users. However, an association between the detection of an enteric pathogen and the behavioural factors of oro-anal sex (aOR 3.32, 95% CI 1.38-7.97) and group sex (aOR 2.00, 95% CI 1.11-3.60) was observed demonstrating a link between asymptomatic enteric pathogen carriage and specific behavioural risk factors. Our findings have significant public health implications for the prevention of gastrointestinal infections particularly in relationship to the role of asymptomatic carriage. Improved knowledge of factors that promote outbreaks of enteric pathogens among MSM could enable targeted public health interventions.

Bowen Zhang (RMH)
Rapid Detection of *Cryptococcus* from blood cultures

Amy Batey (Austin)
Taking work home

A 34 year old previously well man presented to ED with a 2/52 history of fevers, a dry cough and red eyes followed by 3/7 loose stools with no associated abdominal pain. He had emigrated from the Philippines 3 years earlier but had no recent overseas travel. There was a febrile contact with his 4 year old daughter with a presumed viral URTI. Investigations revealed increased LFT's and small polyps in the gall bladder but no positive results from blood/stool. The patient's symptoms began to improve and were thought to be nothing more than a resolving viral illness. He was discharged with a plan to attend ID follow up clinic with convalescent serology and to represent if unwell. As an outpatient he failed to improve and developed marked constitutional symptoms and worsening diarrhoea. He presented to the ID clinic very unwell with a distended abdomen, resting tachycardia and abdominal tenderness. Investigations showed abnormalities including markedly deranged LFT's, rhabdomyolysis and acute renal failure. Imaging by a CT abdomen and pelvis revealed Ileocaecal enterocolitis and prominent retroperitoneal lymphadenopathy. Over his admission he required haemodialysis and a massive gastrointestinal haemorrhage required embolization. Further Microbiology testing was performed which revealed positive blood cultures and a positive stool result. This presentation will discuss the difficulties of the diagnosis, the origins of the patient's infection, the implications of the diagnosis, the pathophysiology of the illness and optimal management.

Sigrid Lange (MDU PHL)
Implementation of the SpeeDx ResistancePlus MG PCR for the detection of *Mycoplasma genitalium* and Macrolide resistance

Mycoplasma genitalium is a common sexually transmitted infection (STI) associated with prostatitis, epididymitis, and balanoposthitis in men, and cervicitis, pelvic inflammatory disease (PID), endometritis, and salpingitis in women. The Australian STI management guidelines recommend that infections known or suspected to be macrolide susceptible be treated with doxycycline 100mg twice daily for 7 days, followed immediately by azithromycin 1g stat, then 500mg daily for another three days (2.5g total). However, infections known or suspected to be macrolide resistant are treated with doxycycline 100mg twice daily for 7 days, followed immediately by moxifloxacin 400mg daily for seven days. In cases of PID caused by *Mycoplasma genitalium*, a treatment of moxifloxacin 400mg daily for 14 days is recommended. As such, the identification of macrolide-resistant and susceptible infections is crucial for administration of appropriate treatment, as well as in preventing the spread of antimicrobial resistance. The SpeeDx ResistancePlus MG PCR test is an ARTG registered IVD used to detect the Mycoplasma ganitalium-specific adhesion protein MgPa gene and azithromycin resistance-associated mutations in the 23s rRNA gene. Implementation of this test at the Microbiological Diagnostic Unit Public Health Laboratory (MDU-PHL) required validation of the QIAsymphony DNA extraction platform and verification of the manufacturers test performance data to enable registration of the test as an in-house IVD and accreditation under ISO15189 by NATA. The manufacturer's acceptance criteria were able to be satisfied though the assessment of performance characteristics including specificity, sensitivity, accuracy and limit of detection; allowing the test to be successfully registered as an in-house IVD and NATA accredited.