INVITED SPEAKERS

KEYNOTE ADDRESS

New Frontiers in the Study of Emerging and Re-emerging Infectious Diseases
Prof. Dr. Roberto Bruzzone
Co-Director of HKU-Pasteur Research Pole, The University of Hong Kong, Hong Kong SAR.

Recent epidemics (avian and H1N1 influenza, chikungunya, MERS coronavirus, Ebola, Zika virus etc.) have underscored not only the growing globalization of health issues, but also the evolving interrelationships among human health, animal health and our ecosystems. It is estimated that 60% of infectious diseases are of animal origin and that 75% of emerging infectious diseases are zoonoses. Climate change, deforestation, uncontrolled urbanization, and changes in farming methods have encouraged the interspecies transmission of pathogens and have deeply modified the impact of the environment on our health. This changing international landscape, of increased coordination, collaboration and investment, requires an equal response from the international clinical research community. It is time to adopt a new integrative approach, combining the fields of animal and human health, to generate the evidence to improve clinical care and public health responses, and to support the development and evaluation of new diagnostics, drugs and vaccines. I will discuss how major international networks, such as the Institute Pasteur International Network (IPIN) and International Severe Acute Respiratory and Emerging Infection Consortium (ISARIC) are tackling emerging, remerging, and “traditional” infectious diseases, which remain a clear and present threat to health and equity for which we are not adequately prepared. The shared goals are to reduce the risk and impact of epidemics requires a stable, agile, and proficient network of research partners. The role of local investigators and research networks is therefore more critical than ever. This strategy defines the role that IPIN and ISARIC aspire to have, by its members and for its members.

PLENARY

PLENARY 1

Emerging and Re-emerging Infectious Diseases – Future Scenarios
Dr. Vincent Cheng
MBBS (HK), MD (HK), PDipID (HK), MRCP (UK), FRCPath, Chief of Service, Department of Microbiology, Queen Mary Hospital, Hong Kong, Infection Control Officer, Queen Mary Hospital, Hong Kong, Hon Professor, Department of Microbiology, The University of Hong Kong.

Most of the emerging infections are classically caused by viruses, which adapt continually to the environment by mutation, recombination or gene re-assortment, as exemplified by influenza A. There has been four major influenza, a pandemics from 1918 to 2009, intercalated by sporadic occurrence of human infections due to avian influenza A H5N1, H9N2, H7N9, and H10N8. All avian influenza viruses were first reported in mainland China, where wet markets with caged live poultry served to amplify viruses and they serve as a convenient environment with close human and poultry interactions.
An unprecedented outbreak of SARS-coronavirus in 2003 was also epidemiologically linked with civet cats from wet markets, although the virus was eventually traced to the Chinese horseshoe bats which are prevalent in Southern China. Research has focused on the discovery of novel viruses from bats, of which coronavirus-HKU4 is phylogenetically closely related with the MERS-coronavirus in the Middle East. In addition to the viral infections, emerging of multi-drug resistance bacteria such as carbapenemase-producing Enterobacteriaceae is anticipated to pose a great challenge to healthcare system in the future. Healthcare facilities become important epicenters for human-to-human transmission for emerging infectious diseases. Proactive infection control bundle including active surveillance of high risk cases, early isolation of index patients with standard and transmission-based precautions, rapid molecular diagnostics, and directly observed hand hygiene are important measures to combat against nosocomial outbreaks due to emerging and re-emerging infectious diseases in the hospitals. International travel facilitates dissemination of emerging and re-emerging infectious diseases. Global warming also increases the risk of transmission of mosquito-borne arboviruses.

PLENARY 2

The Antibiotic Apocalypse: Is This the End?

Datuk Dr. Christopher Lee
Consultant Infectious Disease Physician, Sungai Buloh Hospital, Malaysia.

PLENARY 3

Infectious Diseases in Cuba and Its Management

Prof. Dr. Jorge Fraga Nodarse
Head, Department of Science & Innovation and Unit of Molecular Parasitology, Institute of Tropical Medicine Pedro Kouri, Havana, Cuba.

Infectious diseases are considered as a global health threat with a death toll of 13.4 million per year. In Cuba the infectious diseases are not a health problem. In 2018, the mortality from infectious diseases was only 8.6% of total death, with most of them due to influenza and pneumonia (fourth cause of death). If we excluded, the number of fatal cases for the rest of infectious diseases represent only 1.3% of total mortality. Fourteen infectious diseases, severe clinical forms or complications remain eliminated (yellow fever, polio, TB meningitis in children under 1 year, malaria, neonatal tetanus, diphtheria, congenital rubella syndrome, post-mumps meningococcal meningitis, measles, rubella, mumps, whooping cough and congenital HIV and syphilis), while others no longer represent health problems (< 0.1 per 100,000 population) they are meningococcal disease BC, typhoid fever, Haemophilus influenza type b meningitis, hepatitis B and tetanus. Leprosy and Tuberculosis had and incidence rate of 2.0 and 6.3 per 100,000 populations, respectively. HIV prevalence in the population aged 15-19 was 0.29%. An active search for fever cases, border surveillance, and environmental sanitation have been important factors in controlling dengue, chikungunya, Zika, and yellow fever, while control of the Aedes aegypti mosquito is the key element for interrupting transmission. These results is due to that Cuba has maintained its commitment to a compressive system of health care, oriented to primary care and prevention, accessible, free of charge, universal and regionalized. Also have robust and well organized infectious diseases surveillance systems based on a network of clinics, hospitals, municipal and
provincial level laboratories and the national reference center for diagnosis, clinical, epidemiological and laboratory surveillance, the Institute of Tropical Medicine Pedro Kouri (IPK). IPK conducts, within a coherent academic triad, fundamental, translational and applied scientific research; delivers advanced education and training; and provides medical and scientific expert services. Cuba works permanent for the control and elimination of infectious diseases even when the world risk of the introduction has increased to contribute to public health responses locally and globally. Examples drawn from this experience will be discussed.

PLENARY 4
One Health
Prof. Dr. Latiffah Hassan
Head, Veterinary Laboratory Diagnosis, Faculty of Veterinary Medicine, Universiti Putra Malaysia, Malaysia.

SYMPOSIUM 1 - VACCINATION

Speaker 1
The Crown Jewel in Preventing Infectious Disease
Dr. Faridah Abu Bakar
Director, Family Health Development Division, Ministry of Health, Malaysia.

Despite advances in sanitation and immunization initiatives, infectious diseases remain a significant cause of mortality and morbidity worldwide. Infectious diseases are caused by bacteria, viruses, parasites or fungi. Zoonotic diseases are also infectious diseases which is transmitted from animals to humans. Vaccine preventable diseases (VPD) are diseases that can be prevented through vaccination. Vaccination is the administration of agent-specific, but relatively harmless, antigenic components that in vaccinated individuals can induce protective immunity against the corresponding infectious agent. A vaccination programme is not solely the introduction of the vaccine into an individual but encompasses a complex system which includes immunisation policies, governance, standards to ensure vaccine quality and efficient service delivery, monitoring and evaluation, VPD surveillance, adequate resources and an enabling environment. Failure of any of the above elements will affect the success of the vaccination programme. Hence the vaccination programme is the crown jewel in preventing VPD and not all infectious diseases.

Speaker 2
Breaking Down the Barriers in Vaccination
AP. Dr. Muhammad Hadhrami Mohd Hussain
Medicine Based Department, Universiti Kuala Lumpur Royal College of Medicine Perak, Malaysia.

The benefits of vaccination are clearly demonstrated by the eradication or massive decline in the incidence of many vaccine-preventable diseases. Unfortunately the coverage of many highly recommended vaccines is still alarmingly inadequate. This is due to a wide range of factors including the increasing numbers of vaccine refusal groups. Children continue to suffer from diseases that could have been prevented. The
lecture will discuss the recognize barriers to the vaccination of children and adolescents, confronting national health systems, providers and parents, and the way in which they can be overcome. Examples of barriers are inadequate vaccine supply, vaccine misdistribution, poor understanding on the part of healthcare providers regarding immunisation practice, cultural or religious misinformation about vaccines, simple ignorance of parents, and many others. Among the approaches that can be undertaken to overcome the barriers may include the use of legislation, incentives in education or medical benefit for those who got vaccinated, creative way in implementing the vaccination programme like out of hours dedicated clinic sessions or mobile programme, greater and more intensive awareness programme for the public and regular healthcare providers retraining programme.

SYMPOSIUM 2

Emerging and Re-emerging Diseases: The Indian Experience
Prof. S. P. Thyagarajan
Professor of Eminence & Dean (Research),
Sri Ramachandra Institute of Higher Education & Research, India.

Over the past 30 years, about 30 new infectious diseases have emerged to threaten the health of millions of people across the globe. Outbreaks due to majority of them have occurred in India. Among the global “hotspots” for Emerging Infectious diseases (EIDs) are countries related to the Indo-Gangetic Plain and the Mekong River Basin. To review the the Indian experience on Emerging and Re-emerging Infectious disease since 1990 till date and the present preparedness. Outbreaks/epidemics due to Nipah virus (NiV), Crimean-Congo hemorrhagic fever (CCHF), Avian Influenza-I (H5N1), Influenza A (H1N1), Chandipura virus (CV), Human Immunodeficiency virus (HIV), Vibrio cholera O139 among the EIDs and Plague, Diphtheria, Dengue, Chikungunya, Acute Encephalitis Syndrome including Japanese Encephalitis etc., among the Re-emerging Infectious Diseases (RIDs) were investigated and reported by various investigators. Over 10 million people were affected in India by these diseases from the 1990 till date with mortality figure of 0.58-15.21%. India responded by establishing a State-based Surveillance system for diagnosis of epidemic-prone diseases. The Integrated Disease Surveillance Programme (IDSP) was launched with World Bank assistance in November, 2004. Under IDSP, surveillance units were established in all 35 States/districts and integrated into the National Centre for Disease Control (NCDC), New Delhi. Information technology network connecting 776 sites has been established. In October, 2007, Government of India created Department of Health Research to bring research with the activity of the health development and provide support for dealing with epidemics and investigation of outbreaks due to new and exotic agents and for their prevention. The Indian Council of Medical Research (ICMR) in 2008 launched the “Viral Research Diagnostic Laboratories (VRDLs)” programme. There are 62 VRDLs across 24 States investigating outbreaks/disease clusters with added research components. The details will be presented and discussed in the presentation.

SYMPOSIUM 3 - ANTIMICROBIAL DRUG RESISTANCE

Speaker 1

Nosocomial Infections: A Doctor’s Nightmare
AP. Dr. Sasheela
Consultant Infectious Disease Physician, University of Malaya, Malaysia
Nosocomial infections (NI) also referred to as Health care-associated infections (HAI), is an infection occurring in a patient during the process of care in a hospital or other health care facility which was not present or incubating at the time of admission. HAI can affect patients in any type of setting where they receive care and can also appear after discharge. HAI are the most frequent adverse event in health-care delivery worldwide. Hundreds of millions of patients are affected by health care-associated infections worldwide each year, leading to significant mortality and financial losses for health systems. The burden of HAI is several fold higher in low- and middle-income countries than in high-income ones.

Speaker 2

The Art of Prescribing: Navigating Antibiotics

**Dr. V. Paranthaman**

Family Medicine Specialist, Greentown Health Clinic Ipoh, Malaysia.

Antibiotic resistance is an emerging global health threat and is likely to have major economic impact. The emergence of antibiotic resistance in bacteria is directly linked to selective pressure exerted by the overuse of antibiotics. Indiscriminate antibiotic prescribing is defined both by excessive prescribing and by prescribing an inappropriate antibiotic. Although there has been a focus on antibiotic stewardship in the hospital setting, outpatient prescribing accounts for the majority of antibiotic consumption and is an important factor in the emergence of resistance in both the community and hospitals. Thus, preventing unnecessary antibiotic use in the primary care setting is essential for overall stewardship efforts. Over prescription of antibiotics is a continuing problem in primary care. To combat these, there is a need to use antibiotic appropriately and wisely, based on evidence based guidelines, avoiding unnecessary and sub therapeutic antibiotic usage, besides educating patients regarding antibiotics. Algorithms and guidelines on managing common outpatient conditions, example acute rhinosinusitis, acute tonsillo-pharyngitis, acute otitis media, pneumonia/acute bronchitis, urinary tract infection, skin and soft tissue infection and acute gastroenteritis are available. These algorithms will assist primary care providers to decide whether antibiotics are needed or not, what antibiotics to use, the correct dose and duration of antibiotics and when to escalate antibiotics in cases not responding to current treatment. The choices of antibiotics are based on current national antibiotic guidelines. By implementing clinical pathways for common outpatient infections on antibiotics prescribing, declining prescriptions for non-pneumonia acute respiratory infections and the use of broad spectrum antibiotics over the first year was found in one study. Strategies on dealing with possible patient driven demands are also crucial to synergize these approaches for antibiotic stewardship.

Speaker 3

**Molecular Mechanisms of Antibiotic Resistance: An Overview**

**AP. Dr. V. Gopalakrishnan**

Preclinical Department, University Kuala Lumpur Royal College of Medicine Perak, Ipoh, Malaysia.

Antibiotic-resistance in bacteria is becoming a major health concern for treating physicians. They are becoming more and more common and are causing a global health catastrophe in the way of unresponsiveness of pathogens to available antibiotics,
transmission of antibiotic resistance among the bacteria and increasing treatment costs and also an increase in number of multidrug resistant pathogens throughout the world. The pace of spread of antibiotic resistance is more rapid than the discovery of newer antibiotics, which makes it more necessary to look for measures to control antibiotic resistance. Several genes encode for antibiotic resistance and are transferred between bacteria of same or different species. These resistance mechanisms increase the tolerance of the bacteria that harbor these mechanisms and allow them to survive and actively grow in the presence of a given antimicrobial agent. In the recent decades, new resistance mechanisms are being regularly described, and new genes and vectors of transmission are being identified. Studying the development and mechanisms of resistance should be carried out at the early stage of drug development to enhance the accessibility of antibiotics to their sites of action. This deliverance envisages to touch upon the recent advances, molecular mechanisms involved in antibiotic resistance, which are intrinsically present or acquired by the bacteria and molecular methods of detection antimicrobial resistance of the bacteria.

SYMPOSIUM 4 - VIRAL DISEASES

Speaker 1
Public Health Confronts Dengue: Developing Sustainable Actions

Dr. B. Venugopalan
Deputy State Health Director (Public Health), Selangor State Health Department, Malaysia.

The dengue situation in Malaysia continues to remain a major public health challenge despite the national dengue control programme being established for more than 40 years. Various control strategies had been implemented with varying success and usually of limited duration. In a recent study, it had been estimated that in Malaysia (for 2010), about United States Dollars (USD) 74 million was allocated for dengue control activities in the country with the estimated cost of USD 1,600 per notified dengue case. The Aedes mosquito has been described as the perfect ‘urban terrorist’ in view of its robust capability to adapt to the urban environment. The current national dengue control programme mainly focuses on outbreak control measures when cases had been notified. However, this strategy is ineffective in the long term due to the sub clinical nature of almost 70% of dengue infections and the presence of transovarial virus transmission in the mosquitoes. A paradigm shift in the national dengue control programme is required with the emphasis on Aedes Breeding Prevention based on the concept of ‘Zero Aedes Breeding At All Times’, even if no cases had been notified from a locality. This will have to be taken as an everyday mantra by government agencies, government linked corporations, private sector, non-governmental organisations and community organisations. Effective dengue control in Malaysia will only be realised when the community accepts that ‘Dengue Control is Everybody’s Business’ and not solely the responsibility of the health personnel in the local authorities and district health offices.
Speaker 2

Recurring Dengue Outbreaks – Time To Look at the Real Issue

*Prof. Dr. Sazaly Abu Bakar*

Director, Tropical Infectious Diseases & Research Education Centre (TIDREC), University of Malaya, Malaysia.

Tropical Infectious Diseases Research and Education Center (TIDREC)/WHO Collaborating Center for Arbovirus Reference and Research (Dengue/Severe dengue) MAA-12 University of Malaya

Malaysia experienced its worst dengue outbreak in 2015, where over 125,836 cases and 336 of deaths were reported. The number of dengue cases steadily dropped in the subsequent 3 years, reaching to only 80,615 cases with 147 of deaths in 2018. The number of cases, however, reached over 3000 per week during the first few weeks of 2019, reaching 36,738 cases and 59 deaths in just 13 weeks. It is worth noting that the similar pattern of outbreaks with a high number of cases followed by a few years of lull period has been repeated several times over the last three decades. These recurring outbreaks occurred regardless of the various efforts taken to mitigate dengue, especially those that focused on ‘eradication’ of the vector – *Aedes aegypti* mosquitoes, declared public enemy number one. It is time perhaps effort to tackle recurring dengue outbreaks look at the actual data, focusing on the causal agent, dengue virus and the human host. Using the full genome sequences of all dengue virus isolates available, we noted that over the last three decades, there was a sequential pattern of outbreaks involving the different dengue virus serotypes and genotypes. Using available geospatial and clinical data, we propose that host immunity plays an important role in shaping dengue outbreaks.

Speaker 3

Epidemiological Trend of HIV among MSM in Southern Vietnam

*Dr. Khuu Van Nghia*

Head of the HIV Prevention and Control Program, Disease Control and Prevention Department, Pasteur Institute of Ho Chi Minh City, Vietnam.

Vietnam has included men who have sex with men (MSM) into its national HIV sentinel surveillance (HSS) system since 2009 and implemented among 6/20 southern provinces with high HIV burden. The aim of this presentation is to share the HSS data among MSM collected during 2012-2018 for a better understanding of HIV trend in southern Vietnam. We used the standard operating procedure (SOP) for implementing HSS for MSM across six provinces (Ho Chi Minh City, Can Tho, An Giang, Kien Giang, Baria-Vungtau, & Dong Nai) between 2012 and 2018. The target sample size varied from 150 to 300 in each surveillance province each year. Community-based sampling was based on random selection of hotspots listed in the sampling frame. Eligibility criteria were males 16 years of age or older, reporting having anal sex with another male within the past 12 months, and appearing in the selected area. In each selected hotspot, all eligible MSM were invited to voluntarily participate in the survey including an interview using a standardized questionnaire and blood drawn for HIV testing. The overall prevalence of HIV (95% CI) among MSM in southern Vietnam in during 2012-2018 were 2.7% (1.8-3.8%), 5.4% (4.1-7.0%), 9.5% (7.2-12.2%), 7.3% (5.6-9.3%), 10.3% (8.4-12.5%), 15.3% (13.0-17.9%), and 13.3% (11.5-15.3%), respectively. The region observed an upward
trend of HIV infection during the 2012-2018 period (nP\text{trend} < 0.001). The prevalences in Ho Chi Minh City, Can Tho and Baria-Vungtau were higher than that in An Giang, Kien Giang, and Dong Nai. The high and increasing prevalence of HIV among MSM in southern Vietnam during 2012-2018 suggest larger investments on HIV prevention and control programs targeting MSM to minimize HIV transmission within MSM population and reduce its spread to the general public.

SYMPOSIUM 5

One Health Concept in Control of Zoonotic Diseases

*Professor Roberto Bruzzone*

Co-Director of HKU-Pasteur Research Pole, The University of Hong Kong, Hong Kong SAR.

The concept of emerging infectious diseases was defined in the nineties by the late Joshua Lederberg, Nobel laureate, as threats to health and national security (Lederberg J, Shope RE, Oaks SC Jr, 1992). Following the HIV pandemic, human pathogenic viruses are constantly emerging and re-emerging, as highlighted by the 21st century outbreaks of coronaviruses, avian influenza, Ebola and Zika viruses, etc. All available data highlight the impact of research and education in providing evidence-based findings to inform the public, international and national policy makers, private global health stakeholders and drive the research-training agenda, between and during outbreak situations. Being a travel-hub situated at an epicenter of zoonotic and pandemic emergence, Hong Kong is particularly challenged by this emerging and re-emerging infectious disease. Over the past decade, through the integration of basic, clinical and epidemiological research, spanning the animal-human interface, the School of Public Health at HKU has established a multi-disciplinary influenza research program which has contributed to public health responses locally and globally. Examples drawn from this experience will be discussed.

SYMPOSIUM 6

Deployable Molecular Diagnostics for Infectious Diseases: An Update

*Prof. Abdul Karim Russ Hassan*

Preclinical Department, Universiti Kuala Lumpur Royal College of Medicine Perak, Malaysia.

The deployable detection of infectious pathogens that cause an outbreak and the surveillance for disease epidemic are crucial for the control of disease progression and environmental risk. Fatal disease outbreak that cross borders can be controlled through the surveillance of the movement of people, community at risk and the environmental samples collection for detection of the infectious pathogens were determined in the locality. The climate change with increase in rainfall results in flooding has contributed to increase incidence of leptospirosis and melioidosis in Malaysia. The disease occurrence in certain localities in remote location where laboratory support facilities are unavailable or limited requires the need for field and rapid detection of infectious pathogens. There were initial problems of availability of reliable power supply in remote areas and environmental factors hinder the function of the laboratory equipment needed to be overcome. The initial approach for deployment for environmental detection of *Burkholderia pseudomallei* as the cause of melioidosis by culture methods was conducted in remote areas of East Malaysia.
that required several days. Latter improved methods for pathogens detection was conducted by Polymerase Chain Reaction (PCR) from the environment in changing the land use as in logging areas, hydroelectric project, agricultural areas, and residential areas in remote locations. In West Malaysia, an improved method of detection and rapid detection of environmental *B. pseudomallei* for melioidosis risk were conducted by portable smaller version of real time PCR from the school field. The results of the important laboratory finding can be mapped through Geographical Information System (GPS) and reported to the health authority for immediate action with improvement in information technology and the availability of internet access.

**SYMPOSIUM 7 - TUBERCULOSIS**

**Speaker 1**

**Recent Advances in Management: New Solutions for an Old Enemy**  
*Dr. Zamzurina Abu Bakar*  
Respiratory Physician, Institute of Respiratory Medicine, Kuala Lumpur, Malaysia.

Tuberculosis is an ancient human disease can be traced back to egyptian mummies. Until the beginning of the 1990s, tuberculosis was considered a disease under control with decreasing political and industrial interest. Today, TB is a 21st century disease, yet one that is being fought, for the most part, with 19th and 20th century tools. With the resurgence in TB, there has been renewed interest in updating that technology. Since then, both the development of multidrug resistant (mdr) strains and the increasing problem of co-infection with human immunodeficiency virus (hiv), have led to a new exacerbation of disease spread that has restrengthened the urge to develop new strategies and drugs. A major cause of death and one of the most challenging public health problems worldwide. Novel tools from diagnostics and therapeutics as well as prevention program and collaboration with other agencies plays an important role in controlling tuberculosis worldwide.

**Speaker 2**

**TB Diagnostics: Hitherto and Henceforth**  
*Dr. Vignesh Ramachandran*  
Preclinical Department, Universiti Kuala Lumpur Royal College of Medicine Perak, Malaysia.

Tuberculosis (TB) continues to be a global public health emergency, being the leading cause of death worldwide from an infectious disease among adults. Emergence of drug resistant forms of TB are responsible for increased morbidity and mortality rates, complicating treatment options and hindering the progress of TB eradication efforts. According to the World Health Organization (WHO), in 2017, an estimated 10 million new cases of TB were reported and about 1.3 million people are estimated to die from TB each year. Although, TB is curable in almost 85% of cases, there could be an impending global epidemic if MDR- and XDR-TB are not detected and treated in a timely manner, particularly in those co-infected with HIV. Rapid, accurate and early diagnosis of TB is critical for timely initiation of treatment and thereby severing the chain of transmission. However, diagnosing TB is challenging due to various factors including the difficulties in collecting appropriate specimens and limited access to recent rapid diagnostic methods with good sensitivity and specificity. In several countries, diagnosing TB diagnosis is still reliant on sputum microscopy, a primitive
diagnostic method with varying sensitivity. However, with the success and roll out of cartridge-based nucleic acid amplification test (CBNAAT) method like Xpert MTB/RIF, the new diagnostics landscape appears promising with several new tools in pipeline. The TB diagnostics scenario now is slowly shifting focus from microbiological based testing to molecular and immunological testing methods. Biomarkers are the latest addition in the battery of TB diagnostics that have potential role as promising diagnostic tests. Thus, the need of hour is developing rapid, cheap, accurate, accessible and low-tech diagnostic tests that can detect active TB and drug resistance profiles, so that they can be scaled up for maximum impact on health care and efficient TB control measures.

Speaker 3

Community approach in controlling TB

Dr. Punitha Makeswaran
Senior Assistant Director, TB/Leprosy Control Unit, Selangor State Health Department, Malaysia.

Tuberculosis (TB) is known to be an ancient disease, with evidence leading back to 17,000 years. In spite of modern medicine and advanced diagnostic tools, yet the disease still spreads and infects millions yearly. TB has become the no.1 killer among all infectious diseases, superseding HIV. According to the recent Global Tuberculosis Report 2018 by World Health Organization (WHO), TB is one of the world’s top challenges, infecting one third of the world’s population and being the cause of death for 1.5million population in 2018.

As alarming as it may sound, it is high time to engage and strengthen the community and networking with all other stakeholders in tuberculosis care and prevention programmes. A well trained community-based TB care and control programme reaps better outcomes in terms of improvement in health and well-being, treatment outcome, lower defaulter rates and eventually mortality rates. The National Strategic Plan for Tuberculosis 2016-2020 also highlights on indicators targeting supportive environment and systems for effective TB control. Through a structured community-oriented efforts not only can it help to prevent the spread of TB in the community but also educate the community thus increasing their awareness and reducing stigma which eventually contributes to the effectiveness and responsiveness of both prevention and control of TB. Community approach is the way forward in combatting Tuberculosis.
OP1-01
Role of Polymerase Chain Reaction for the Detection of Common Bacterial Pathogens in Acute Childhood Meningitis.
Roy CK*, Paul D
Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh Islam SMS, Combined Military Hospital, Dhaka, Bangladesh Ahmed MK,

Introduction: Higher rate of morbidity and mortality among the children in developing countries are due to bacterial meningitis. Early identification of causative pathogens is important for timely treatment of meningitis and thereby to prevent loss of life. Recently, PCR-based assays have become available to provide an early and specific diagnosis of bacterial meningitis

Objectives: In the present study, we evaluated the value of the Seeplex Meningitis ACE Detection kit (Seegene Inc., Korea), a newly developed multiplex PCR kit employing dual priming oligonucleotide methods, for the detection of Streptococcus pneumoniae, Haemophilus influenzae type b, Neisseria meningitidis, Group B Streptococcus and Listeria monocytogenes in CSF specimen.

Methodology: The study was conducted in the molecular diagnostic laboratory of the department of microbiology of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh. Total 68 clinically suspected meningitis cases were included in this study from pediatric wards of BSMMU during November 2017 to October 2018. CSF was collected aseptically and send for Gram staining, bacterial culture and PCR.

Results: Gram stain for any bacteria was positive in 08 (11.76%) cases. Bacterial culture was found positive in 25 (36.76%) CSF specimens and significant number of the bacterial culture isolates were Streptococcus pneumoniae in 18 (72%) cases. Multiplex PCR was positive in 39 (57.35%) specimens and most bacteria detected was Streptococcus pneumoniae in 26 (66.6%) cases, followed by Haemophilus influenzae type b in 7 (17.94%) and Neisseria meningitidis 05 (12.82%) cases.

Discussion: The PCR of CSF is a rapid, sensitive, and specific diagnostic test for acute bacterial meningitis in children, especially in the Gram stain and culture negative cases. PCR based detection may be considered as an adjunct to bacterial culture and antimicrobial susceptibility testing.

OP1-02
Parental Awareness, Approach and Use of Antibiotic among Children.
Giriyanpanavar. C R*; Ida Yasmin
UniKL-Royal College of Medicine Perak.

Introduction: Most common infection among the children is upper respiratory tract infections (URTI). Viral infection is the most frequent cause of URTI, even then antibiotics are prescribed. Antibiotic resistance is a grave concern and one of the important factor is due to inappropriate use antibiotics in children with URTI. Factors leading to antimicrobial overuse in children are complex but possibly both doctor and parents contribute to it. Aim of the study is assess the parental knowledge, approach
and use antibiotic among their children with URTI.

**Methods:** A cross-sectional survey was conducted among 200 parents at an outpatient department in a health centre, Ipoh using a validated questionnaire. All data were analysed using SPSS program and the influence of demographic characteristics on knowledge and attitude was tested by Chi-Square test.

**Results:** Majority of the respondents were females (64.5%) and Malays (76.5%). Among the respondents 48% had secondary schooling and 36.5% had college education. Almost 70.5% of respondents had good knowledge of antibiotic except 91% said antibiotics were effective in viral infections. With regard to approach 47.3% believed that antibiotics to be prescribed for common cold, while 33% seek antibiotics if doctors did not prescribe. Statistical significance was seen with higher educational level with antimicrobial resistance and completion of antibiotic course. In connection with use 70% did not keep the left over antibiotics for future use. Much of the information (49%) got from the health professionals.

**Conclusion:** Establishing a robust evidence based clinical practice guidelines for URTI ensure a quality care with fewer antibiotic prescription. Enhancing the trust of a doctor and educational awareness among the community has to be created regarding the prudent use of antimicrobials by the public.

**OP1-03**

**Factors Related to the Event of Pulmonary Tuberculosis.**

*Rusnoto*, Indah Risnawati, Noor Azizah
University of Muhammadiyah Kudus, Indonesia

**Introduction:** In the world, it is estimated 10.4 million people die from pulmonary tuberculosis every year. The Indonesian Ministry of Health (2009) states that cigarette consumption in Indonesia is increasing every day. The high population and cigarette consumption makes Indonesia got 5 rank as the country with the highest tobacco consumption in the world after China, the United States, Russia and Japan with an estimated consumption 220 billion cigarettes in 2005 (Barus, 2012). In Indonesia, tuberculosis also becomes the fifth number in the cause of death after cardiovascular disease (Public Health, 2017). In Tanjungrejo Kudus Community Health Center, pulmonary tuberculosis was ranked 1st. The incidence of pulmonary tuberculosis is influenced by many factors, including the health of the biological environment, smoking behavior, nutritional status and the level of income of the community.

**Objective:** This study was to determine the factors that influence the incidence of pulmonary tuberculosis.

**Methodology:** This study used correlation analytic study with cross sectional approach. The population were tuberculosis patients with 56 people as samples. Data was analyzed using the chi square test.

**Result and discussion:** The results of this study are nutritional status with p value = 0.645 (> 0.005) and OR 2.000 (CI = 0.340 - 11.756), 2) family income with p value = 0.317 (> 0.005) and OR = 3.286 (CI = 0.538 - 20.081, 3) Biological Environmental Health with p value 0.039 (> 0.05) and OR =, 243, 4), smoking behavior with p value 0.032 (<0.05) and OR = 5.769. So that it can be concluded that 1) There is no relationship between nutritional status and the level of family income with the incidence of pulmonary tuberculosis, 2) There is a significant relationship between the health of the biological environment and smoking behavior with the incidence of pulmonary tuberculosis.
**OP1-04**


*Dr. Manoharan M*1, Dr. Rajan TT2,

1Gribbles pathology lab (M) Sdn Bhd, Malaysia, 2Department of Neurosurgery, Saveetha Medical College, India.

The causes of seizure include genetic problem, cerebrovascular disease, tumours, trauma and infection of brain and its coverings. The common infective causes are pyogenic cerebral abscess, tuberculosis, neurocysticercosis, toxoplasmosis and encephalitis.

We presented here a rare infection causing seizure and headache in a 29 years old male for 4 years. His initial MRI done 4 years ago in another hospital showed a lesion in the cranial vault. Based on that radiological findings, he was treated for both tuberculosis and neurocysticercosis along with three anti-epileptic drugs. In spite of the treatment, the frequency of seizures and head ache increased.

At the present hospital, the examination of the patient revealed a firm 4x4 cm swelling in the cranial vault. The repeat CT brain showed erosive lesion of cranial vault and an intracranial contrast enhancing ring lesion.

Patient underwent craniectomy and the lesional tissue was removed. A diagnosis of actinomycotic osteomyelitis and encephalomyelitis was made on histopathological examination. Post surgically, the patient was treated with appropriate antibiotic for 6 months. He was completely symptom free after the surgery and no clinicoradiological recurrence noticed on 5 years follow up.

Primary cranio-cerebral actinomycosis is extremely rare in this era of widespread antibiotic use. However, the possibility must be kept in mind when encountering atypical granulomatous lesion resistant to usual treatments. Surgical excision should be the first choice of treatment so as to enable maximum safe excision of the lesion, provide confirmation of diagnosis and achieve best possible outcome.

**OP1-05**

Emergence and Global Spread of Novel Human Coronavirus OC43 Genotypes Associated with Respiratory Infections.

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*Introduction:* Human coronavirus OC43 (HCoV-OC43) is commonly associated with respiratory tract infections in humans, with five genetically distinct genotypes (A to E) described so far.
**Objective:** We identified two newly emerging HCoV-OC43 genotypes and characterized their phylogenetic, spatiotemporal spread and transmission network profiles.

**Methodology:** We obtained the full-length genomes of HCoV-OC43 strains from two previously unrecognized lineages identified among patients presenting with severe upper respiratory tract symptoms in a cross-sectional molecular surveillance study in Kuala Lumpur, Malaysia, between 2012 and 2013.

**Results & Discussion:** Bayesian phylogenetic, recombination and comparative genomic analyses revealed two distinct clusters diverging from a genotype D-like common ancestor through recombination with a putative genotype A-like lineage in the non-structural protein (nsp) 10 gene. Signature amino acid substitutions and a glycine residue insertion at the N-terminal domain of the S1 subunit of the spike gene, among others, exhibited further distinction in a recombination pattern, to which these clusters were classified as genotypes F and G. The phylogeographic mapping of the global spike gene indicated that the genetically similar HCoV-OC43 genotypes F and G strains were potentially circulating in China, Japan, Thailand and Europe as early as the late 2000s. The transmission network construction based on the TN93 pairwise genetic distance revealed the emergence and persistence of multiple sub-epidemic clusters of the highly prevalent genotype D and its descendant genotypes F and G, which contributed to the spread of HCoV-OC43 in the region. Finally, a more consistent nomenclature system for non-recombinant and recombinant HCoV-OC43 lineages is proposed, considering genetic recombination as an important feature in HCoV evolution and classification.

**OP1-06**

**Measles in Immigrant Population in Interior Sabah, Malaysia**

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**Introduction:** Re-emerging of measles is worrying despite of that it can be prevented by vaccination. Measles vaccination are included in National Immunization Programme since 1982 and under Expanded Program of Immunization in 2002, two doses of measles – mumps – rubella (MMR) are introduced. The Measles Elimination Programme (MEP) in Malaysia that was started in 2004 aimed to eliminate measles on 2010 but has been revised to 2018. In 2016, measles incidence in Malaysia was 3 per million populations and fifty percent of cases were not vaccinated. Poor vaccine coverage and importation of cases among travellers returning from endemic areas contribute to the outbreak.

**Objective:** 1) To describe the sociodemographic and clinical manifestations of all measles outbreak occurred in Interior Sabah from 2011 to 2018; 2) To describe strengths, weakness, opportunities and threats (SWOT) in managing an outbreak involving unknown immunization status community.

**Methodology:** This is a descriptive study.

**Results and discussion:** An outbreak of measles in Keningau District in Sabah State occurred during 2018 affecting two cases of unimmunized siblings of non-Malaysian citizen. The elder sister and younger brother is 12 years old and 8 years old respectively. We received the measles notification with the clinical symptoms were fever and maculopapular rash on both of them, with cough, conjunctivitis and coryza affecting the elder sister. Outbreak management was applied by SWOT analysis.
Rapid detection, notification and action for control to prevent further spread was identified as the strength. Low level of awareness regarding the locality of high risk population depicts the weakness. Strong cooperation and communication between health and education department widened the window of opportunity. High turnover of foreign and unknown immunization status pupils in the school becomes the threat. This SWOT analysis will improve our action in managing similar outbreak effectively.

**OP1-07**

Melioidosis in the Heart of Borneo – A Single Centre Retrospective Study and Identification of Predictors of Mortality.

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**Introduction:** Melioidosis is a deadly tropical disease caused by *Burkholderia pseudomallei*. Due to its inherent resistance to many first-line antibiotics, melioidosis remains a burden of disease in resource-limited environments. The purpose of this study was to delineate the epidemiological, clinical and microbiological characteristics of melioidosis, and the predictors of mortality.

**Methods:** Data was collected retrospectively from 65 adults, with culture-confirmed melioidosis at Kapit Hospital, Sarawak, Malaysia from the period of July 2016 to December 2018. Categorical variables were compared using the chi-square test, continuous variables with a Student's t-test.

**Results:** Within the 65 patients, the primary risk factors for melioidosis were hypertension (29.2%; n=19), diabetes mellitus (26.2%; n=17) and alcohol use (16.9%; n=11). The common clinical presentations were bacteraemia (66.2%; n=43), pneumonia (63.1%; n=41), internal organ abscesses (52.3%; n=34) and soft tissue and joint involvement (15.4%; n=10). Positive cultures largely came from blood (49%; n=41) and sputum (25.3%; n=21). The mean time from presentation to initiation of anti-melioidosis treatment was 2.7 ± 2.4 days. Mortality occurred in 8 people (12.3%). Using the univariate analysis, we have identified septic shock (p=0.008), mechanical ventilation (p=0.000), intensive care unit admission (p=0.000), serum urea (p=0.000), serum creatinine (p=0.000), serum bicarbonate (p=0.001), serum aspartate aminotransferase (p=0.025) and serum albumin (p=0.016), to be associated with an increased risk of mortality. Multivariate logistic regression analysis revealed serum bicarbonate (p=0.01, OR 0.66, 95% CI 0.48-0.91) and serum albumin (p=0.03, OR 0.73, 95% CI 0.55-0.97) to be independent predictors of mortality.

**Conclusion:** The identification of serum bicarbonate and serum albumin, as independent predictors of mortality for patients with melioidosis, allows early recognition of critically ill patients and timely initiation of anti-melioidosis treatment, which may improve patient survival.
Combating Emerging Carbapenemase - Producing Enterobacteriaceae: Beyond the Hospital.

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Objective: To study the emergence of carbapenemase-producing Enterobacteriaceae (CPE) in a healthcare region in Hong Kong

Methodology: We analyzed 57,002 patients with prospective collection of fecal specimens for CPE screening: upon admission (targeted screening) and during hospitalization (opportunistic screening, safety net screening, and extensive contact tracing), in our healthcare network with 3,200 beds from July 1, 2011, through June 30, 2018. Specimens were collected and subjected to broth enrichment culture and multiplex polymerase chain reaction.

Results: Of 137,782 fecal specimens collected, 1459 specimens (1.1%) from 382 patients (0.7%) had CPE. The number and prevalence (per 100,000 patient-days) of CPE increased from 2 (0.3) in 2012 to 111 (27.1) in the first 6 months of 2018 (P<.001). Of 57 (14.9%) of 382 newly diagnosed CPE patients with no history of hospitalization in the past 2 years, 36 of them were diagnosed upon admission. Further investigation revealed 24 (6.3%) of 382 newly diagnosed CPE patients had no travel history or exposure to healthcare facilities outside Hong Kong in the past 1 year, suggestive of community source of CPE acquisition.

Discussion: Community acquisition of CPE is increasingly reported. A person may start as an asymptomatic CPE carrier with low bacterial load in the gastrointestinal tract, but the bacterial load increases with the use of broad-spectrum antimicrobial agents, especially during hospitalization. Consequently, healthcare facilities are notorious epidemic centers for CPE transmissions, particularly in settings where hand hygiene and environmental hygiene are suboptimal due to low staff to patient ratio. Epidemiological analysis to understand risk factors for community acquisition of CPE is urgently warranted. Enforcing infection control measures with the provision of single room isolation with strict contact precautions, with particular emphasis on directly observed hand hygiene before meal and medication of hospitalized patients is the key to combat the emergence of CPE.

Insidious Emergence of Drug Resistance in Acinetobacter baumannii under Fluctuating Environments without Exposure to Antibiotics.

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Introduction: Acinetobacter baumannii is considered as a priority pathogen by WHO (2017) and has gained importance for its role as a potent nosocomial pathogen and as multi-drug resistant forms in hospitalized patients. Amidst various drug resistance mechanisms, a renewed interest has been spurred to glimpse at the role of other unpredictable environmental factors in inducing the MDR property which has not been studied in A. baumannii strains.

Objective: To detect the plasmid mediated resistance and to assess the role of unpredictable factors in inducing the property of drug resistance among A. baumannii.
**Methodology:** CLSI based antibiotic susceptibility profiles, and screening of 17 drug resistant genes by PCR was performed with the clinical isolates of *A. baumannii* from UTI cases (n=1000). Further ~100 generations of the laboratory replicates of *A. baumannii* was observed under different environments viz., control stable environment (S), fluctuating environment (F) encompassing, component (pH, salt, H2O2), complex (pH+salt+H2O2), novel (metals & antibiotic) and deteriorating environments (increasing concentrations of metals & antibiotic) by measuring the growth rates with the assessment and statistics of the adaptation mechanisms prior exposure to antibiotics.

**Results and Discussion:** CLSI based susceptibility profile yielded 71.23% & 39.72% of MDR and XDR strains respectively among the genotypically characterized *A. baumannii* strains. Analysis of the unpredictable factors showed the fitness level was not altered in the stable environments but a significant increase in the fitness level was observed in novel environment prior subjected to unpredictable fluctuations. Median based estimators for mutation rates and quantification of efflux activity analysis showed energy dependent activity. The present study records an alternative mechanism of adaptation apart from the plasmid encoded resistance, in inducing MDR property among *A. baumannii* without prior exposure to antibiotics that could pose serious threat to public health in a short time.

**OP1-10**

**Splenic Abscess: A Single Centre Retrospective Review of 39 Cases.**

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**Introduction:** Splenic abscess is an uncommon condition with a reported frequency between 0.14% and 0.7%. The causative microorganisms can be very diverse. However, in an area where melioidosis is endemic, *Burkholderia pseudomallei* is the most frequent cause of splenic abscess.

**Objective:** To analyse 39 cases of splenic abscess in a rural district hospital in Kapit, Sarawak during a 2-year period.

**Methodology:** From January 2017 to December 2018, a total of 39 patients with splenic abscess were enrolled for the retrospective study. The demographics, clinical characteristics, underlying diseases, causative organism, therapeutic methods, and mortality rates were analysed.

**Results:** There were 21 males and 18 females with the mean age of 33.7 ± 2.7 years. History of pyrexia was present in almost all patients (38 patients, 97.4%). Diabetes mellitus was implicated in 8 patients (20.5%). All cases of splenic abscess were multiple and diagnosed using ultrasonography due to unavailability of computed tomography in our hospital. Four out of 39 patients had extra-splenic abscess, namely liver abscess (1 patient) and eyelid abscess (3 patients). Positive blood cultures were obtained in 20 patients (51.3%) and all yielded *Burkholderia pseudomallei*. ELISA for melioidosis was positive in 9 of 19 patients (47.4%) with negative blood culture. All patients were treated medically with antibiotic therapy. The mortality occurred in 1 patient (2.6%) due to septicaemia with multiorgan failure.

**Discussion:** *Burkholderia pseudomallei* was the most common aetiological agent of splenic abscesses in our study. Ultrasonography serves as an important tool for diagnosis of melioidosis in endemic areas. In the treatment of melioidosis with splenic abscesses, antibiotic therapy alone would suffice.
Fatal Leptospirosis and *Escherichia coli* Co-infection in a Post-partum Woman.

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Human Leptospirosis is increasing, causing great morbidity and mortality. Fatal dual infections have been reported in Leptospirosis infection. Puerperal populations from Leptospirosis endemic regions are vulnerable to dual infections because they have an increased risk of *Escherichia coli* sepsis. This case report highlighted the first Leptospirosis and *Escherichia coli* co-infection in a 32-year-old lady, who was day 23 post-partum at presentation. She presented to a general practitioner with the chief complaint of severe headache preceded by 2 days history of fever at 1120H. During the consultation, she developed generalized tonic-clonic seizure, following which she was immediately transferred to our hospital. Upon arrival to our facility at 1215H, she was in dual septic and hypovolaemic shock. She was intubated for airway protection as her Glasgow Coma Scale was E1V1M1 at presentation. Early interventions with fluids, broad spectrum antibiotics and intensive supportive care were given. Despite that, she deteriorated rapidly and developed pulmonary haemorrhage, disseminated intravascular haemorrhage, and multi-organ failure. She succumbed within 12 hours of admission and full post-mortem was conducted. Dual infections with *Escherichia coli* and *Leptospira serovar Sarawak* were confirmed with blood culture and serum Leptospirosis Microscopic Agglutination Test respectively. The presentation of this case was very acute with predominant central nervous system involvement manifested as generalized tonic-clonic seizure followed by deep unconsciousness. Autopsy results showed generalized cerebral edema and tonsillar herniation complicated with Duret haemorrhage at the midbrain. There was no structural abnormality or obvious inflammation detected in the genitourinary system. We propose that concurrent Leptospirosis infection had unmasked the sub-clinical *Escherichia coli* infection that rapidly evolved into severe sepsis with irreversible lethal complications. This novel case underscores the importance of considering the probability of co-infections in patients from tropical countries presenting with similar rapid deterioration.

Demography and Clinical Characteristics of Patients with Melioidosis in Hospital Taiping, Malaysia.

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Introduction: Melioidosis is an infectious disease caused by *Burkholderia pseudomallei*, an environmental bacterium found in soil and water in tropical regions. Objectives: To evaluate the demography, clinical characteristics and outcome of patient with melioidosis. Methodology: We conducted a retrospective study of (n=97) culture-confirmed definitive cases of melioidosis collected from medical records from 2016 to 2017 in Hospital Taiping, Malaysia.
Results: Among 97 patients (mean age 54.86 ± 1.365, male 69.1%) Malay, Indian and Chinese patients were 78.4%, 12.4% and 9.3% respectively. In turn 52.6%, 27.8%, 9.3%, 6.2% and 4.1% patients were admitted to the department of Medicine, ICU, Orthopaedics, Surgery and Otorhinolaryngology respectively. Common clinical presentations were fever (88.7%), cough (47.4%), shortness of breath (32%), skin and soft tissue infection (29.9%), joint pain and swelling (7.2%), abdominal pain (5.2%), pleuritic chest pain (5.2%), haemoptysis (3.1%) and dysuria (2.1%) along with constitutional symptoms such as diarrhoea (18.6%), headache (15.5%) and vomiting (14.2%). Prevalence of pneumonia, septicemia and septic shock were higher (46.4%, 79.4% and 44.3%) compared to abscesses (15.5%), septic arthritis (8.2%), cellulitis (7.2%), carbuncle (4.1%) and skin ulceration (4.1%). Overall morbidity and mortality in 2016 were 25.6% and 24.1% and in 2017 were 44.2% and 57.4% respectively (p = 0.330). Mortality was more in males (55.2%, P = 0.054) and 40-60 years age group (61.2%, P = 0.001). Death rate was significant among the patients diagnosed with pneumonia (68.9%, P = 0.004), septicaemia (61%, P < 0.001) and septic shock (86%, P < 0.001) compared to other conditions.

Discussion: Clinical manifestations of Melioidosis range from soft tissue infection to acute fulminant sepsis. Pneumonia and soft tissue abscesses are common. Septicaemia and septic shock were strong predictors of mortality which was highest at the 40-60 years age group. Hence, there should be a high index of suspicious of melioidosis in ill patients.

ORAL PRESENTATION – DAY 2

OP2-01
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Introduction: The outreach medical program is a temporary medical camp whereby medical professionals visit the underprivileged communities in the remote areas to provide medical advice and treatment.

Objectives: The objective of this study is to reflect on the experience of our medical students conducting a noble act to assist the underprivilege in Tropical Africa.

Methodology: This is an observational study reflecting on a visit by medical students of University Kuala Lumpur to tropical islands of Zanzibar, United Republic of Tanzania during their elective attachment.

Results: During this visit they saw many chronic health conditions such as dental, ENT, skin, eye problems and some infectious diseases. The lack of qualified Doctors, patients’ lack of awareness and poor infrastructure added to their problems. The young medical students offered as much assistance as possible and learnt from this experience within their scope, but they were convinced that assistance is necessary to help these people in rural tropical areas.

Discussion: Outreach program especially in tropical Africa is about visiting some of the rural areas and rendering your support to disadvantaged communities, however there may be other unexpected difficulties, especially for the first time visitor.
Conclusion: The smiling faces of the communities who were visited at and the personal satisfaction of the health personnel bear witness, although they may not tell you that, you will know from their yearning to return again and again.

OP2-02
Asymptomatic Carriage of Nasal Methicillin Resistant *Staphylococcus aureus* (MRSA) among Medical Students of a Public University in Malaysia.
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Introduction: Methicillin-resistant *Staphylococcus aureus* (MRSA) is closely associated with nosocomial infection beside inappropriate use of antibiotics in the healthcare setting. Objective: The aim of this study was to determine the prevalence of MRSA in asymptomatic medical students in a public university in Malaysia.

Methodology: We conducted a cross-sectional study to determine the prevalence of MRSA nasal carriers among 60 medical students in Universiti Malaysia Sarawak (UNIMAS) with corresponding consent forms and questionnaires. These participants, selected randomly consisted of 24 preclinical students and 36 clinical students. Consent was obtained before nasal swabs were collected from each of the participants. The samples were cultured on blood and mannitol salt agar plates respectively. Further identification assays using Gram stain and biochemical tests including catalase and coagulase tests were performed. For each isolate, antibiotic sensitivity test was conducted on Mueller-Hinton agar in triplicates and the zone of inhibition was measured. The antibiotic sensitivity profile of each sample corresponding to the age, gender and duration of clinical posting exposure underwent categorical analysis (Chi-square test, Fisher’s exact test). The antibiotic sensitivity profile corresponding to each sample group was analysed using variance test via One way-ANOVA test.

Results: From a total of 60 nasal swab samples, 56 (93%) were positive for S. aureus. The prevalence of MRSA accounted for 15% from the preclinical and 19% from the clinical year students respectively.

Discussion: There was no significant association between methicillin resistance with age, gender and duration of clinical posting indicating that duration of clinical exposure had no impact on the prevalence of MRSA among preclinical and clinical students in UNIMAS. These participants were likely to carry community-acquired MRSA (CA-MRSA) rather than hospital-acquired MRSA (HA-MRSA).
OP2-03
Computational Identification of the Novel Drug Target for *Klebsiella pneumoniae* DNA Adenine Methyltransferase.
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**Introduction:** *Klebsiella pneumoniae*’s multidrug-resistant (MDR) pathogen poses a major global challenge. Current antibiotic-resistant studies have been progressively associated with inhibitors of DNA adenine methyltransferase (DAM), which plays a crucial role in bacterial pathogenesis. DAM is essential in regulating the replication and gene expression of the bacterium. The emergence of DAM in epigenetics studies facilitates the drug discovery of this multi-resistant pathogen. Objective: Our study aims to identify novel drug targets in *Klebsiella pneumoniae* that contain DAM domain proteins. As a subtractive genomics approach, we used several bioinformatics tools to identify potential novel drug targets and used drug properties to prioritize the drug target.

**Methodology:** We obtained 32 proteins from *Klebsiella pneumoniae* containing DAM domain proteins from Uniprot and further analyzed them using similarity search against human genome, database of essential genes, drug bank and sub-cellular prediction by subtractive genomics to identify potential drug targets.

**Result & Discussion:** Through a subtractive genomics approach, we identified 19 out of 32 proteins that contain essential genes, drug ability and non-homology sequences against human proteins and gut microbiota proteins. We have identified 9 cytoplasmic proteins out of 19 as preferable drug targets through subcellular prediction. Through the analysis of drug property, we prioritized 3 proteins as potential new drug targets. This study will help to design new drug targets against *Klebsiella pneumoniae*.

OP2-04
Immunogenicity and Efficacy of Codon and Codon Pair Deoptimized Enterovirus A71 Vaccines in Mice.
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**Introduction:** Enterovirus A71 (EV-A71) is a major causative agent of hand, foot and mouth disease (HFMD) in young children. It is associated with severe neurological complications and death. In 2015, the first inactivated EV-A71 vaccine was approved by the China FDA, but is unavailable outside of China. **Objective:** This study aims to produce a safe live-attenuated vaccine by codon deoptimization (CD) and codon-pair deoptimization (CPD) of EV-A71.

**Methodology:** Codon deoptimization is generated by introducing the least preferred codons for the amino acids while codon pair deoptimization increases the presence of underrepresented codon pairs in specific genes. Six CD and 6 CPD clones were generated by synonymous mutations in P1 and 2A regions.

**Result & Discussion:** Deoptimization of capsid and 2A regions reduced EV-A71 plaque sizes in correlation with length of deoptimization, but had no effect on viral replication. Six-week-old ICR mice immunized intraperitoneally with two selected CD
and CPD candidates covering VP2, VP3 & VP1 and VP1 & 2A genes showed good anti-EV-A71 IgG levels similar to wild-type controls. All groups of vaccinated mice had increased IFN-γ and IL-4. On lethal challenge, offspring of vaccinated mice showed delayed symptoms and death while those from the wild-type immunized group were protected. In contrast, active immunization of 1-day-old suckling mice with CD and CPD vaccine candidates provided better immune protection than passive protection against lethal challenge.

**Conclusion:** Overall, we demonstrated that CD and CPD vaccines are promising viral vaccine candidates for prevention of EV-A71 infection.

**OP2-05**

**Association of Supportive Treatment in Sepsis Adult ICU Patients on Clinical Outcomes (Predictors and their Risk Factors).**

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**Introduction:** Sepsis is a life-threatening problem pertaining to morbidity and mortality in the clinical setting. It is considered as the top cause of morbidity and mortality. The effective management of disease needs early initiation of treatment besides control of the vital signs. Objective: This study determined the association of type of supportive treatment (ST) in ICU patients and their predictors or risk factors on 28-day mortality, APACHE II or ICU-LOS.

**Methodology:** A retrospective cohort study conducted in tertiary ICU hospital in Selangor. 228 adult patients’ files with sepsis met the inclusion study criteria were reviewed. Univariate and multivariate (MVA) logistic & cox regression modelling were performed to detect relationship between type of ST and ICU-mortality. Also, univariate and (MVA) linear regression were used for determining association between (ST) with APACHE II score and ICU length of stay (LOS).

**Results:** Out of 228 ICU adult’s patients 193(84.6%) were died with 119(52.2%) male and 74(32.5%) female respectively. The mean ICU- length of stay (LOS) was 9.86 days while the mean APACHE II score was 29.59 points. There was a significant association between the inotropes and steroids received and ICU-LOS(P=0.000). In MVA linear regression both continuous renal replacement therapy (CRRT) R²=0.779 (95 % CI: 1.078- 7.171, P=.009) and albumin (R²=0.779 (95 % CI: -7.534- -.364, P=.032) were significant predictors for APACHE II score variation respectively. While, DVT treatment received patients was significant predictors for ICU-LOS R²=0.478 (95 % CI: .572- 4.247, P=.010). In addition, in MVA cox regression, only Intermittent Dialysis (ID) received was a mortality risk (HR.027) with protective effect (95% CI: .002-0.321, P= .004).

**Discussion and Conclusion:** Majority of patients were elderly with comorbid acute kidney injury (AKI) and septic shock which contributed with high mortality and poor clinical outcomes.
Introduction: The objective of this study was to evaluate the prevalence of microorganism isolates types, antibiotic usage preference, the prevalence of diabetic amputations in necrotizing fasciitis (NF) and predictive factors of amputation.

Methodology: A cross-sectional study conducted by looking at medical records traced from Hospital Seremban identifying all necrotizing fasciitis admissions in the year of 2017/2018.

Results: A total of 159 patients were included. The mean duration patients were on at least one antibiotic was 18.87 days (41.78). 145 patients (91.2%) were suffered at lower limbs, 68 (42.8%) suffered an amputation, 97 (61.0%) suffered from sepsis and 19 (11.9%) resulted in mortality. 139 (87.4%) were diabetics and 87 (54.7%) were immunocompromised. The commonest type of NF was type 2 [103 (64.8%)]. The top 3 commonest isolates were Pseudomonas aeruginosa (15.7%), Klebsiella pneumoniae (12.6%) and β haemolytic Group B Streptococcus (10.7%). The 3 commonest antibiotics started were ampicillin/sulbactam (69.8%), ceftazidime (9.4%) and amoxycillin/clavulanate (4.4%). The mean LRINEC score was 7.72 (SD:2.31). Among the 139 diabetics, 68 (48.9%) ended up with an amputation. Among the 102 patients having both diabetes and hypertension (n=102), 50% suffered an amputation. A cross tabulation done showed that Klebsiella pneumoniae (17.2%), β haemolytic Group B Streptococcus (15.5%) and Proteus mirabilis (13.8%) were the common causative organisms in an amputation. A regression analysis done to identify predictive variables for an amputation showed no statistical significant variables.

Conclusion: From this study, we concluded that the commonest type of isolates at our centre was Pseudomonas aeruginosa and the commonest antibiotic choice was the ampicillin/sulbactam and nearly half of diabetics with NF ended up with an amputation. There were no predictive factors for an amputation among the collected variables.

Introduction: Carbapenem-resistant Klebsiella pneumoniae has become a major threat for patient management in all health care facilities. Health care practitioners and Infection Control Unit expect a more rapid and reliable result from Microbiology Unit to detect Carbapenem-resistant Klebsiella pneumoniae (CRE). Two current methods,
Modified Hodge Test (MHT) and Modified Carbapenem Inactivation Method (mCIM) were compared for their reliability and effectiveness.

**Methodology:** Carbapenem-resistant *Klebsiella pneumoniae* samples obtained from Microbiology Unit were sub-cultured and screened for carbapenem resistance by Kirby-Bauer Diffusion method. The resistant strains were assessed for the production of carbapenemases by MHT and mCIM simultaneously.

**Results and Discussion:** A total of 25 samples were collected to assess the CRE *Klebsiella pneumoniae*. Of the 25 samples, 20 were detected to possess carbepenamase using MHT after overnight incubation and all samples were detected to possess carbepenamase by mCIM. Thus, from our study, mCIM gave a faster and reliable result. As a conclusion, mCIM produced more sensitive and specific results for detection of carbapenemases among *Klebsiella pneumoniae* and the reliability can be ascertained only by PCR or other methods.

**OP2-08**

Isolation of Methicillin-Resistant *Staphylococcus aureus* and *S. epidermidis* from Children in Welfare Homes in Ipoh, Perak, Malaysia.

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**Introduction:** *Staphylococcus aureus* and *S. epidermidis* are among the potential health threats that can lead to serious infections in both hospital and community. In Malaysia, previous Methicillin-resistant *S. aureus* (MRSA) studies were conducted mainly on isolates from patients in hospitals. This study was to determine any potential MRSA and MRSE from children of welfare homes.

**Methods:** A total of 226 samples were obtained from children of welfare homes in Ipoh, Perak, Malaysia. All the samples were collected by using sterile nasal swab procedure. Consent from the guardians of children involved in the study was obtained after due explanation to them. Socio demographic details were collected using a questionnaire.

**Results and Discussion:** Of the 226 samples, 197 and 94 isolates of *S. aureus* and *S. epidermidis* were isolated and identified by presence of clumping factor and protein A using the Remel BactiStaph™ Latex Agglutination test kit. Both *S. aureus* and *S. epidermidis* isolates were tested with antibiotic Cefoxitin (30µg) by using disc diffusion method. Isolates that were Cefoxitin-resistant were confirmed for positive Penicillin Binding Protein 2A by using PBP2 kit (Oxoid, USA). PBP2 positive isolates were processed by PCR for detection of mecA gene. mecA gene was detected in one *S. aureus* and three *S. epidermidis* isolates. This is the first report of MRSA and MRSE from children in welfare homes in Ipoh, Perak, Malaysia.
Overall Survival among HIV-infected Patients on Antiretroviral Therapy at Hospital Sungai Buloh.

Introduction: The world has seen a dramatic improvement in HIV survival. However, there were limited local studies particularly those after the implementation of free ART provision policy in 2006. Therefore, this study aimed to assess and compare the survival rates among HIV-infected adults in Malaysia.

Methodology: This retrospective cohort study was conducted by reviewing medical records of patients who started ART between 2007-2016. ART-naïve adults aged 15 years and above were included and those who were transferred out from the hospital were excluded. Systematic random sampling method was applied. All-cause mortality was the primary outcome of interest. Kaplan Meier survival curve and log-rank test were used to compare the overall survival rates according to different factors.

Results: A total of 339 patients were followed-up for a median of 4.3 years. There were 50 (14.7%) deaths, yielding an overall mortality rate of 3.12 (95% CI: 2.37, 4.12) per 100 person-years. Of the 50 deaths, majority (42.0%) died within the first year of ART initiation. The estimated overall survival rates at 6 months, 1 year, 3 years, 5 years and 10 years were 95.9%, 93.8%, 90.4%, 84.9% and 72.8%, respectively. The overall survival rates were significantly different based on age group (p<0.001), employment status (p<0.001), transmission mode (p=0.003) and history of illicit drug use (p=0.017). Other significant factors included baseline CD4 cell count (p=0.002), baseline haemoglobin level (p<0.001), tuberculosis co-infection (p<0.001), hepatitis C co-infection (p=0.008), number of opportunistic infection (p=0.010), first NRTI background (p=0.001) and history of defaults (p=0.021).

Discussion: The overall survival rates in Malaysia were higher than low-income countries but lower than high-income countries. The high early mortality rate was consistent with previous studies.

Conclusion: All three patient-related, clinical-related and treatment-related factors played important roles in life expectancy of HIV patients.

OP2-10
MecA and PVL gene detection in Methicillin-resistant Staphylococcus aureus strains isolated from aborigine and urban poor community in Perak.
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Introduction: Current global burden of Community-acquired Methicillin-resistant Staphylococcus aureus (CA-MRSA) was difficult to estimate due to lack of studies on CA-MRSA prevalence from many parts of the world. It appears that S. aureus strains are evolving while information on CA-MRSA strains are still lacking. In Malaysia, further epidemiological studies should be conducted to monitor the trends of MRSA infections in community settings especially less characterized populations such as
aborigine and urban poor communities. Due to intrinsic and the acquired mechanism, like mecA, mecC or vanA, MRSA strain poses a high level of resistance to multiple antibiotics and often carries lukSF-PV genes which responsible for encoding the leukotoxin, Panton-valentine leukocidin (PVL) gene.

**Methodology:** A total of 472 of nasal swab samples were collected from aborigine (234) and urban poor (238) community located in Perak, Malaysia. The resistance to methicillin were determined using disc diffusion method with aseptic technique according to CLSI guidelines. The mecA and PVL gene were investigated using conventional Polymerase Chain Reaction (PCR) using specific primers.

**Results and Discussion:** The results showed that 3 MRSA isolates from aborigine and single MRSA isolate from urban poor were positive of mecA genes. However none of the mecA positive isolates was positive for PVL gene.
POSTER PRESENTATION – DAY 1

PP1-01

*Cladosporium* Chromoblastomycosis: A Case Report of Subcutaneous Mycosis.

**Mohd Shah NA**, Awad NA, **Abdul Rahman F**

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**Introduction:** Subcutaneous mycosis is a rare, chronic localised infection of the cutaneous and subcutaneous tissue following fungal inoculation during traumatic injury. Chromoblastomycosis is one of the examples within this group of infection.

**Case report:** Here, we report a case of a 56-year-old Malay male presented scaly psoriasiform plaque like lesion over the anterior part of the left ankle and associated with itchiness for 5 months. The diagnosis was confirmed by skin scrapping for fungal culture which grew *Cladosporium* sp. He was successfully treated with tablet fluconazole 100mg once daily and topical miconazole.

**Discussion:** The disease may mimicking immune mediated skin disease. Thus, the need of awareness and suspicion for fungal aetiology in this case is crucial for an early and adequate treatment to be given.

PP1-02

Intestinal Parasites in Fresh Produces of Chow Kit Wet Market.

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**Introduction:** The WHO Healthy Market Project has underlined the importance of surveillance for intestinal parasitic contamination in produces sold to the consumers in the market. Chow Kit Market in Kuala Lumpur is the largest wet market in Kuala Lumpur, catering for more than 500,000 people each day. There are no data published on parasites in wet market in West Malaysia.

**Research objectives:** 1) To determine the prevalence of parasites in different types of vegetables and fruits. 2) To determine the risk factors associated with prevalence of parasite sin different types of vegetables and fruits.

**Methodology:** KAP interview were conducted face to face with the sellers. Universal sampling of 25 types of fresh produces from stalls in Chow Kit Wet market done daily, allowed for soaking in 0.85% saline for 24 hours followed by centrifugation. Detection of parasites were done via direct wet mount with saline and iodine, trichorme staining and culture of sediments via Harada Mori techniques.

**Results:** Parasites with highest prevalence found were *Iodamoeba buchthii* (52%), *Entamoeba complex* (43.7%), *Blastocystis hominis* (33.3%), *Trichuris trichiura* (28.7%) and *Ascaris lumbricoides* (26.7%). Fresh produces with highest parasites prevalence were scallions(83%), tomatoes (78%) and cabbage(75%).

**Discussions:** The findings echoed results from other countries whereby the succulent vegetables and fruit nearer to the ground have highest prevalence of parasites. Soil transmitted helminthes eggs were found in most produces. Risk factors that correlate with high prevalence of intestinal parasites are produces originated from Cameron
Highland, basic condition and lack amenities of the stalls and market in general. Thus, to improve the food safety level of Chow Kit Market: All products from Cameron Highlands must be submerged in salinated water before use, increase number and quality of basic amenities to promote personal hygiene - hand washing areas, toilets and easy access to clean water supply.

PP1-03
Anthocyanin - A Natural Dye Remedy for Nosocomial Infection.
Sivasankara Narayani. S1, Ravindran. J2, Ponmanickam. P1, V. Thangapandiyan1, M. Dhivya1
1Ayya Nadar Janaki Ammal College, Sivakasi, 2Faculty of Medicine, University Kuala Lumpur Royal College of Medicine Perak, Malaysia.

Introduction: Natural dyes are considered eco-friendly as these are renewable and biodegradable. They are skin friendly and may also provide health benefits to the wearer. Natural dyes can be used for dyeing almost all types of natural fibers. Recent research shows that they can also be used to dye some synthetic fibers. Apart from their application in textiles, natural dyes are also used in the coloration of food, medicines, handicraft items and toys, and in leather processing, and many of the dye-yielding plants are used as medicines in various traditional medicinal systems. This research discusses various methods of natural dye extraction a dyed on cloth and stability.

Objective: Main objective is to find out remedy to minimize nosocomial infection by anthocyanin.

Methodology: Extraction of anthocyanin, biochemical characterization, anti – Staphylococcus sp. activity, antioxidant activity, dyeing.

Results: Total amount of crude anthocyanin content extracted from Rosa sp. was 384 ± 0.6mg/100 g using soxhlet extract, 357± 0.2 mg/100 g using conventional method. The anthocyanin was processed for the analysis of the functional groups through FTIR instrumentation. The bands of absorbance was observed in the anthocyanin extract at around the peak area was 595 cm\(^{-1}\) to 3737.79 cm\(^{-1}\). Minimal Inhibitory Concentration of crude anthocyanin against Staphylococcus sp. is 128 µg/ml. It possess good antioxidant activity and can dye on cotton cloth and gauze cloth.

Discussion: This work analyse the dye extract the primary colour component of the extract, the color feature of the extract under different pH and mordant condition and their application in cotton dyeing. Resulted fastness to wash, rubbing and light of the dyed fabrics were evaluated. One more interesting finding of present work is that prescribed acidified methanol solvent for extraction of Anthocyanin pigments is suitable for dyeing of cotton cloth.
PP1-04
Correlation of Normative Values of Radial Nerve Motor Conduction Study with Anthropomorphic Parameters among Young Adults in Malaysia.
Padmavathy KM*1, Pandurangan T1, Rohith Sharan S2, Noorzaid M1, Khairil Azwan MJ1, Htwe TT1, Varun Roshan S3
1University Kuala Lumpur Royal College of Medicine Perak, Malaysia, 2VthCourse, MD(Gen.med), YSMU, Armenia, 3IInd Course, MD(Gen.med), YSMU, Armenia.

Title: Correlation of normative values of radial nerve motor conduction study with anthropomorphic measurements among young adults in Malaysia.

Introduction: Normal radial motor nerve conduction velocity (MNCV) parameter is essential for differential diagnosis of radial neuropathies, C7 radiculopathy and nerve lesion. Inflammatory neuropathies can be caused by viral or other infections and an autoimmune processes. Radial nerve palsy due to direct physical trauma or toxins such as lead poisoning, nerve compression by inflammation or fluid retention as in kidney disease and diabetes, leads to sensory-motor symptoms like burning, tingling, numbness or muscle weakness.

Objective: To compare normal radial motor nerve conduction study parameters in both hands and to correlate with anthropomorphic measurements among young adults.

Methodology: Thirty medical students aged between 17-20 years, were recruited for this study. Power-Lab was used with standard techniques of supramaximal percutaneous stimulation of radial nerve through surface electrodes at elbow and at radial groove. The anthropometric measurements and the neurophysiological parameters such as latency, peak amplitude, MNCV of radial nerve in both hands were recorded and analysed for statistical significance and correlation.

Results: In right and left hands, the mean values of latency were 0.0026 and 0.0024 sec at elbow, 0.0053 and 0.0050 sec at radial groove respectively; amplitude were 4.48 and 3.66 mV at elbow; 3.56 and 4.12 mV at radial groove respectively and MNCV was 52.92 and 57.15 m/sec respectively. Radial MNCV correlates significantly with weight ($r^2=32.51\%$; $p=0.04$) and distance between stimulating points ($r^2=34.57\%$; $p=0.03$) in right hand and with BMI ($r^2=40.08\%$; $p=0.01$) in left hand. There were no statistical difference found in the latency, amplitude and MNCV of both hands.

Discussion: The normative values of radial MNCV parameter among young adults were established which is clinically imperative to evaluate abnormal values for diagnosis, prognosis and treatment of radial nerve injury or compression.

PP1-05
Regional Distribution and Strategic Measures to Reduce the Burden of HIV Transmission among Transgenders.
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Introduction: Transgender people are one of the epidemic groups most affected by HIV. Globally the estimated transgender population is about 25 million and about one-fifth of transgender women are living with HIV. The knowledge of HIV status, coverage
of antiretroviral therapy (ART) and HIV prevention program are found to be inadequate among transgender people with high HIV prevalence.

**Objective:** To analyze the details on the knowledge of HIV status, coverage of ART and prevention programs in various countries with HIV prevalent transgender population.

**Methodology:** Data analyzed based on systematic review of published data on HIV, UNAIDS/WHO guidelines, and ‘global information and education on HIV and AIDS’.

**Results:** Data showed a higher prevalence of HIV among transgenders in the Asia Pacific, Eastern and Southern Africa, Latin America and the Caribbean than other regions. Cambodia and Panama provided both ART and prevention program coverage; Singapore, Paraguay, Cuba, Chile, and Angola provided ART coverage; Malaysia, Honduras, and Nicaragua had increased coverage of prevention program, but ART was inadequate in Bangladesh, Pakistan, Guatemala, and the Dominican Republic. The transgender people of Nepal, India, Samoa, Thailand, Philippines, Mauritius, El Salvador, Colombia, Mexico, and Brazil were aware of their HIV status, accordingly they increased condom use but were not actively covered with ART and prevention program. Indonesia, Zambia, South Africa, Bulgaria, and Ecuador were poor in their knowledge status, ART and prevention program coverage.

**Discussion:** Only about 39% of all countries in the world included the transgender people in their National HIV strategic plans. Countries like Thailand, India, and El Salvador provided community-led services, community-based organizations and linkage of transgender people with health and human rights services respectively. Such improved strategic plans and interventions are required globally.

**PP1-06**

**E-Health Video to Empower Young Men Who Have Sex with Men (YMSM) and to Adopt Risk Reduction Behaviour.**

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**Title:** E-health video to empower young men who have sex with men (YMSM) and to adopt risk reduction behaviour

**Introduction:** There is an urgent need to target young men who have sex with men (YMSM) for prevention of HIV, STI (sexually transmitted infection) and HPV (human papilloma virus) infection. The exposure to e-health video might constitute a brief online intervention to improve the adaptation of risk reduction behaviors.

**Objective:** To study the effectiveness of an e-health video as an intervention to prevent HIV, STI and HPV infections among YMSM.

**Methodology:** A convenience sample (n=103) of YMSM, including 62.1% White with a mean of 23.53 years were included in this study. The data for key risk reduction behaviors were collected pre- and post- e-health video exposure, for regression analysis and paired t-test.

**Results:** The stepwise regression showed: Higher pre-video HPV knowledge was significantly predicted by not lacking HPV vaccine knowledge (p = 0.008), completion of 3-series HPV vaccine regimen (p<0.001), and older age (p<0.009) [27.2% of variance]; Being in a higher stage of change pre-video intervention was significantly predicted by having received an anal pap smear in the past (p<0.000) [30.3% of variance]; Being in a higher stage of change for completing 3-time HPV vaccination...
series pre-video intervention was significantly predicted by having higher global self-efficacy (p<0.008) [6.1% of variance]; and achieving a higher stage of change “change score” for the 6 risk reduction behaviors from pre-video to post-video intervention was significantly predicted by a higher rating of the video (p<0.04) [3.40% of variance]. Paired t-tests showed that significant increase of post-video mean scores for both stage of change and self-efficacy.

**Discussion:** E-health video was found to be effective intervention to adopt risk reduction behaviour among YMSM, and ensured that they would recommend the video to other YMSM.

**PP1-07**

**Intriguing Manifestation of Miliary Tuberculosis - A Case Report.**

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**Introduction:** Tuberculosis (TB) is a century old disease yet still a leading cause of illness and death globally, with more cases today than at any previous time in history. Extrapulmonary TB occurs in 10 to 15% of all TB cases. About 10% of all TB patients involves central nervous system (CNS), 1 to 3% skeletal TB which frequently affects the spine. Meanwhile a combination of intramedullary with intracranial tuberculoma is extremely rare.

**Case history:** A 24-year-old lady, an immunocompetent, presented with pyrexia of unknown origin for more than a month failed to respond to multiple antimicrobial therapy. Bone marrow aspiration revealed a caseating granulomatous lesion and presence of acid fast bacilli in the histiocytes with ZN staining for which she was treated for military TB with anti-tuberculous therapy. A month later she developed lower limbs weakness and found to have concurrent intracranial and intramedullary tuberculoma associated with tuberculous spondylodiscitis evidenced by serial magnetic resonance imaging (MRI). Symptoms resolved with continuation of anti-TB therapy and a course of corticosteroid.

**Discussion:** Diagnosis of miliary TB is often difficult and delayed as it may mimic many diseases. The yield of tuberculous granuloma from bone marrow biopsy is highly positive in miliary TB. Intracranial tuberculomas, paradoxically increase in size with anti-TB therapy probably related to an immune response to antigen released as bacilli disposed by chemotherapy. It may also be due to hematogenous dissemination even before treatment. Development of intracranial tuberculoma during anti-TB therapy does not represent treatment failure and continuation of anti-TB drugs, with or without steroids will usually resolve the lesion.

**PP1-08**

**Management of Pulmonary Tuberculosis in Primary Care Clinics in Perak.**

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**Introduction**: Pulmonary Tuberculosis (PTB) is a major public health problem. There is a resurgence of the disease, with the number of PTB cases rising resulting in high global mortality.

**Objective**: This study aimed to review the management of PTB in six primary care clinics in Perak.

**Methodology**: During their primary care posting, medical students in UniKL RCMP performed clinical audits on the management of various health problems in clinics in Perak. For the clinical audit project students were allowed to select their own indicators of care with their supervisors approval. Since 2017, all completed projects were submitted online. Six projects assessing the management of PTB, were selected and analysed.

**Results**: There were a total of 281 PTB patients from the six clinics studied. For structure indicators of care, 5 out of 6 clinics had a complete PTB registry. The 6th clinic achieved 84%. The recall system for defaulters and availability of functioning microscope were assessed in 5 clinics, four were adequate except one that achieved 66% in recall system. Investigations done at baseline and at follow-up for each clinic (sputum for acid fast bacilli, chest x-ray, liver function tests, renal profile) varied between 74.3% to 100%; HIV screening between 92% to 100% of cases and direct observation treatment system (DOTS) was documented between 84.1% to 100% of patients in the clinics. TB conversion rate (number converted to negative sputum after 2 months of treatment) varied between 68.3% to 87% and cure rate between 24.4% to 100%.

**Discussion**: Majority of the clinics had adequate structure indicators of care. All except one clinic met 80% level of performance in the majority of the process indicators of care audited. The cure rate was low in one clinic partly because of poor documentation.

**PP1-09**

**Factors Related to Postpartum Blues.**

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University of Muhammadiyah Kudus, Indonesia.

**Introduction**: The puerperium begins after the placenta is born and ends when the uterus returns as the pre-pregnancy condition. Becoming a mother, that is the new role that can cause feelings of anxiety, stress and can lead to postpartum blues. Post partum blues is a disorder of mental adaptation that occurs on the first day after the birth of a baby. The peak symptoms of postpartum blues occur on the 3rd to 5th day of post partum with duration ranging from a few hours to the several days. In Indonesia the incidence of postpartum blues is 50-70% of postpartum women. While the incidence of postpartum blues in the foreign country is 26-85%, and globally it is estimated that 20% of women giving birth suffer from postpartum blues. The incident of postpartum blues is influenced by several factors such as social support, the condition and quality of the baby, the history of pregnancy, the history of labor, complications with delivery, psychosocial assessment, the history of depression and other emotional problems before labor, hormonal and cultural. This research aims to determine the factors associated with postpartum blues.

**Methodology**: The method of this research is correlation analytic research using cross sectional approach. The population was 270 postpartum mothers with 73 people
as the sample. The sampling technique is accidental sampling. Data was analyzed by Chi square test. 
**Result and discussion:** Based on the analysis, the result of social support is p value = 0.007 <α = 0.05, the condition of infants with P value 0.003 <α = 0.05, the pregnancy history with P Value 0.002 <0.05, and the labor history with P value 0.023 <0.05. It can be concluded that there is correlation among social support, infant condition, history of pregnancy and labor history with Post Partum Blues.

**PP1-10**  
Factors Affecting the Incidence of Fibroadenoma Mammae (Fam) in Women of Childbearing Age in Kudus, Indonesia.  
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University of Muhammadiyah Kudus, Indonesia.

**Introduction:** Woman who are 20-45 years old belongs to women of childbearing age because her reproductive organs function properly. The attitude of woman of childbearing age can affect behavior in early FAM (fibroadenoma mammae) detection. FAM is a benign tumor in the breast that is more often diagnosed in young women. FAM can be caused by several factors, including family history, fast food, smoking and alcoholic drinks, and others. Knowledge and attitude of a woman of childbearing age is also needed to increase motivation and awareness about FAM. One way to detect breast changes, can be done with the breast self-exam. This is one way to get to know your own breasts so that they can detect their changes early. Breast examination in adolescents is very important because breast examination has many benefits including knowing FAM. The breast self-exam is done to detect early an abnormality in the breast so that if there is an abnormality it will get treatment as early as possible to avoid severe complications. **Objective:** This study was to determine the factors that influence the incidence of fibroadenoma mammae (FAM) in Kudus, Indonesia.  
**Methodology:** This correlation studies used total sampling technique with 118 respondents.  
**Result and discussion:** The results of this study were 21 respondents (18%) had no history of suffering from FAM, 26 (22%) obeyed their diet, 26 respondents (22%) had less knowledge about FAM, 21 respondents (18%) had negative attitudes about FAM, and 24 respondents (20%) did not carry out the breast self-exam correctly. So it can be concluded that there is a relationship between family history, diet, level of knowledge and attitudes of women of childbearing age and breast self-exam with the incidence of fibroadenoma mammae (FAM) in women of childbearing age in Kudus, Indonesia.
Prevalence and Pattern of Antibiotic Resistant of *Burkholderia pseudomallei* Infection in Takeo Province, Cambodia.


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**Background:** To improve early recognition, diagnosis and clinical management of sepsis in resource-limited settings, an observational cohort study was initiated: Austere environments Consortium for Enhanced Sepsis Outcomes (ACESO). Melioidosis is a life-threatening infection caused by an environmental, Gram-negative bacterium, *Burkholderia pseudomallei*, which is endemic in SE Asia and northern Australia. The first case of melioidosis was not officially documented in Cambodia until 2008 when the Takeo Provincial Referral Hospital became the first Cambodian clinical laboratory able to culture the bacterium.

**Methods:** Hospitalized patients with sepsis were enrolled into the observational cohort study. Blood cultures and other bodily fluids were collected and tested for *B. pseudomallei*, using microbiological, antibiotic susceptibility testing and molecular techniques.

**Results:** 536 patients, male 64% and female 36%, were enrolled, 36 (6.7%) of whom were identified as having specimens positive for *B. pseudomallei* by culture with 29 confirmed by molecular techniques. All *B. pseudomallei* isolates were sensitive to ceftazidime, trimethoprim-sulfamethoxazole, and amoxicillin/clavulanate. Among *B. pseudomallei* infected patients, 61.1% were farmers and 44.4% were diabetic, and common symptoms were fever (100%), excessive sweating (77.8%), and shaking (69.4%). The overall fatality rate was 16.4% (n=88), while among *B. pseudomallei* patients the fatality rate was 36.1%.

**Discussion:** Melioidosis is an underecognized cause of illness in SE Asia, with concerning mortality rates. Increased physician awareness of the illness and improved access to effective therapies are imperative to improve outcomes. With a standard protocol for regular diagnostic and susceptibility testing of *B. pseudomallei*, clinicians in Cambodia would be better able to choose effective antibiotics for therapies. The prevalence of antibiotic resistance in Cambodia suggests that the preferred first line antibiotic should be dependent on local antibiotic resistance patterns.

Development and Validation of Reminder System for TB Screening among Contacts in Perak.

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**Introduction:** Low tuberculosis (TB) screening uptake and high defaulter rate among TB contact prevented effective prevention and control of TB disease. Wide access and
good mobile phone coverage beside high penetration rate created huge potential for mHealth intervention to becoming an adjunctive to the current system to overcome such problems.

**Objective:** The aim of this project was to develop and validate a reminder system for TB contact to improve screening uptake by preventing defaulters and improving the retention rate.

**Methods:** Experts in management of TB disease from the State Health Department and Universiti Sains Malaysia were consulted in a few sessions of panel discussions in the development phase. The developed system was written as a guide to implement the system in form of a manual booklet which later assessed for the content relevancy and clarity using content validity index (CVI) and face validity index (FVI) respectively.

**Result:** The average CVI score was 0.96 indicating good relevancy of its overall contents. Total FVI score 0.95 indicating the manual was comprehensible and can be easily understood by the target readers.

**Discussion:** The newly developed reminder system and its manual were valid to be used as an adjunctive system to the current management of TB contact to improve the screening uptake and its retention rate. The effectiveness of such an intervention method needs to be determined in the separate study.

**PP1-13**

**Infections and Antibiotic Use in Hospitalized Elderly Population.**


University Kuala Lumpur Royal College of Medicine Perak, Malaysia.

**Introduction:** Infections in geriatric population are more common mostly due to age related changes, malnutrition and decrease in immunity status.

**Objective:** This study aims to determine the number and types of infections among geriatric patients admitted to a tertiary care hospital in Malaysia.

**Methodology:** This cross sectional study was done examining case records of 430 elderly patients admitted to medicine department of Ipoh general hospital. Every fourth case record available was examined. The study included demography, different infections and drugs used for the treatment and other comorbidities. Sample size was calculated as 300 using Epi info assuming 35% of 2000 elderly patients will be admitted with infections with a precision of 5%. The case records were divided taking into account three groups i.e. 60 -69 years, 70 -79 years and 80 years and above. SPSS version 17 was used to analyse the data. Prior approval from Institutional ethical committee and the Pengarah of the hospital was obtained

**Results:** Different infections were detected 169 (39.5%) (95% CI 34.85 to 44.11) case records. No significant difference was observed between male and female patients. In the age group of 60-69 years there were 122 (38.5%) patients, 24 (38%) were in the age group of 70 79 years and 23 (48%) elderly patients were in the age group of 80 years and above. Pneumonia (64.4%) and UTI (11%) were two common infections. IHD, DM, CKD, bronchial asthma and COPD were common associated comorbidities. Beta lactams, macrolides, and fluoroquinolones either single or in combination were most commonly used antibiotics.

**Conclusion:** Infections are common among elderly Malaysians and this trend will rise as the number of geriatric population will increase in future years and therefore the hospitals need to be well equipped to tackle this problem.
PP1-14
Awareness and Knowledge of Iodized Salt Consumption and Iodine Deficiency Disorder (IDD) Among MBBS Year 1 Students of UniKL RCMP, Ipoh.
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Introduction: Iodine deficiency particularly affects pregnant women, foetuses, neonates, and children and causes mental and physical disorders. In Malaysia, this disorder is not rare and cases involving iodine deficiency have gradually increased. There are very few studies of knowledge and awareness of iodized salt utilisation amongst the Malaysian population. Awareness survey about iodine deficiency and its consequences is lacking among the student’s population. Therefore, by doing this investigation, we can determine the awareness and knowledge level about iodine deficiency disorder among MBBS Year 1 students of UniKL-RCPM who have just entered medical school.

Objectives: The objectives of this study is to determine the level of awareness and knowledge towards iodized salt consumption and Iodine Deficiency Disorder (IDD) among MBBS Year 1 students of UniKL RCCP, Ipoh.

Material & Method: This study is done by distributing a set of questionnaires to the respondents. A total of 147 medical students of Year 1 from UniKL RCCP took part in this survey. The questionnaires consist of 3 sections, which are socio-demographic information (5 questions), 5 questions regarding awareness of Iodine Deficiency Disorder (IDD) and iodized salt consumption and 9 questions regarding knowledge on IDD and iodized salt.

Result: A total of 147 students participated in the study with a response rate of 97.4%. More than half of the total respondents (63.5%) have low awareness about IDD in their vicinity while 74.6% do not aware of iodized salt usage in their daily lives. More than half (59.5%) achieved an overall high level of knowledge regarding the subject. Four respondents (3.2%) achieved low and 47 respondents (37.3%) achieved a moderate level of knowledge. There was a significant association between gender and total household income with the iodized salt consumption (p=0.047).

Conclusion: MBBS Year 1 students in UniKL-RCPM have high knowledge on iodized salt and IDD.

PP1-15
Factors Affecting Mental Emotional Development of Adolescents in Jepara, Indonesia.
Amalia Rahmawati*, Indanah, Sri Karyati
University of Muhammadiyah Kudus, Indonesia.

Introduction: Mental emotional development in adolescents can affect the individual's future. Prevention and handling of problems in mental emotional adolescents must be carried out appropriately from an early age. It is expected to prevent the emergence of behavioral disorders and help adolescents. Therefore, they can have better development in the future.

Objective: This study was to determine the factors that influence the emotional mentality of junior high school in Jepara, Indonesia.
Methodology: This study was a correlation study with cross-sectional as the approach method. The population of this study were 263 junior high school age students with 80 students as the research sample. Data were collected using questionnaires and data analyzed using univariate and bivariate analysis with chi square test. Variables in this study are parents' knowledge, parenting, surrounding environment and peers.

Results and Discussion: The results of this study indicate that there is a relationship among mental emotional development with knowledge of parents, parenting, the environment and peers. So that it can be concluded that there is a significant relationship between peer interaction, school environment, parental knowledge, and parenting in the mental emotional development of adolescents in the Jepara, Indonesia.

PP1-16
Prevalence of Coffee Consumption among University Students in Banda Aceh, Aceh Province, Indonesia: A Preliminary Study.
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Introduction: Coffee is the most popular beverage favored by many people in almost all countries in the world. Aceh is one of the largest coffee producers in Indonesia. The coffee shop hanging out is a lifestyle and trend among young male and female in Banda Aceh. Various reasons for consuming coffee at university students but excessive coffee consumption is associated with various adverse health effects. Therefore, it is necessary to study the prevalence and various factors associated with coffee consumption in university students.

Methods: This study aims to determine the prevalence of coffee drinkers, reasons and various personal characteristics of university students in Banda Aceh. The study was a preliminary study. The collection of data carried out starting from August to October 2018. The samples were students, aged 17-20 years, male and female. The number of samples was 866 students (male, n=86 and female, n=780). This study analyzed the prevalence of coffee drinkers, duration, frequency, dose, time of consumption, type of coffee, no impact or excess coffee consumption, and anthropometric characteristics.

Results and discussion: The results of the study found that the prevalence of coffee drinkers in students in Banda Aceh was 34.75% with presentations (32.18% women and 58.14% men). The mean body weight in the coffee and non-coffee groups was male=53.2 kg, women=50.16 kg and men=58.25, women=48.87. The mean body mass index in the coffee and non-coffee groups was male=19.68 kg/m2, women=21 kg/m2 and men=21.34 kg/m2, women=20.47 kg/m2.

Conclusion: It was concluded that the number of coffee drinkers was more male than female among students in Banda Aceh. This research was a preliminary study and being continued by analyzing the benefits or adverse effects of coffee on human health.
Rat and Leptospirosis Study at the Water Recreational Spots in Johor, Malaysia.  
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Introduction: Leptospirosis, also known as Weil’s disease is a zoonotic infection, caused by pathogenic spirochete bacteria of the genus leptospira. Human infection is transmitted via direct contact with the bacteria through contaminated urine, blood, or infected tissue from animal reservoirs especially rodents (and rats) or indirectly from contaminated water and soil.

Methodology: Analysis of 478 environmental samplings of water and soils were done at several recreational water spots in the state of Johor, Malaysia from January 2014-March 2018 to detect the presence of pathogenic leptospira. Rat study was done in Gunung Ledang Waterfall Resort, Tangkak, and Johor, Malaysia in 2014 and 2017. The total of 300 live traps with baits were placed to catch the rats. They were examined, evaluated and analysed for identification of rat species, calculation of rat density, presence of ectoparasites such as ticks and chiggers and bacteriology analysis.

Results: The environmental samplings in this study showed presence of pathogenic leptospira in 18.2% of the samples. The calculated rat density (abundance index of rats) were found to be moderate to high (3.3%-12.2%). The dominant species of rats in the area was Rattus norvegicus. The ectoparasites present were chiggers and ticks. However, no leptospira detected in the rats sent for bacteriology analysis.

Conclusions: The environmental samplings in several water recreational spots in Johor, Malaysia showed the presence of pathogenic leptospira in 18.2% of the samples, making the risk of for leptospirosis infection is quite high. The presence of rats showed by moderate to high (3.3%-12.2%) rat density index (abundance index of rats) in the studied area might increase the risk for leptospirosis transmission further.

PP1-18
Molecular Screening of Tick-Borne Bacterial Pathogens inTicks (Acari: Ixodidae) and Animal Hosts Collected from Pahang and Selangor.  
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Introduction: Little is known on the prevalence of bacterial pathogens carried by on-host ticks even though many cases of human rickettsioses have been reported from the East Coast of Peninsular Malaysia.

Objective: In this study, we investigated the occurrence of four bacterial pathogens by screening ticks and animal hosts collected from Pahang and Selangor using molecular approach.

Methodology: A total of eleven animals comprising Rattus tiomanicus, R. rattus and Tupaia glis were examined for the presence of ticks. The collected ticks were then morphologically divided into four genera namely Ixodes, Dermacentor, Haemaphysalis
and *Rhipicephalus* sp. Nucleic acid extracts from spleen, blood, on-host ticks and questing ticks were PCR-screened for the presence of bacteria belonging to the genera *Rickettsia*, *Borrelia*, *Anaplasma* and *Ehrlichia*.

**Results:** Of 61 DNA extracts, three (4.92%) *I. granulatus* ticks infesting two different hosts, *R. tiomanicus* and *R. rattus* were found infected with *Rickettsia*. Meanwhile, two (3.28%) samples were positive with *Borrelia* and both were nymph stages of *I. granulatus* parasitizing the same host, *R. tiomanicus*. None of the ticks were positive for *Anaplasma* and *Ehrlichia*.

**Conclusion:** Molecular evidence from this preliminary study shows existence of both *Rickettsia* and *Borrelia* within local *I. granulatus* ticks that is of public health importance in Malaysia.

**PP1-19**

**Studies on Drug Resistance Mechanisms Involved in the Emergence of Multidrug-Resistant (MDR) *Shigella flexneri* 2a.**

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**Introduction:** Multi-drug resistance among *Shigella* poses a major therapeutic challenge to control the burden of shigellosis both in developed and developing countries. Multi-drug resistance mechanism in *Shigella* was investigated.

**Methods and Materials:** Ninety extensively characterized multi-drug resistant (MDR) *S. flexneri* 2a strains were randomly selected from clinical samples at ICDDR, B hospital from 2004 to 2010. Phenotypic and genotypic methods were applied to understand the molecular mechanism of drug resistance contributed to the emergence of MDR strains.

**Results and discussion:** Antibiotic resistance profile for commonly used drug showed that, 74.4% (n=67) strains were resistance to ampicillin (Amp), 66.7% (n=60) to sulfamethoxazole-trimethoprime (Sxt), 97.7% (n=87) to nalidixic acid (Nal) and 71.0% (n=64) to ciprofloxacin (Cip). Only one strain showed resistance to ceftriaxone (Cro), which was confirmed as true ESBLs producer by Double Disc Diffusion Method (DD) method. Interestingly to note that *S. flexneri* 2a also showed resistance to some macrolides, such as erythromycin and azithromycin. Conjugation experiment showed that Amp, Sxt, E and Azi resistance were mediated by 62 MDa plasmid, whereas Amp, E and Azi resistance were mediated by 32 MDa transmissible plasmid. Sequence analysis of Quinolone resistant determining region (QRDR) resistant strains revealed all had double mutations in *gyrA* (*Ser⁸³ → Leu, Asp⁸⁷ → Asn or Gly*) and a single mutation in *parC* (*Ser⁸⁰ → Ile*). But there was no mutation in *gyrB* and *parE* genes. None of the strains were positive for fluoroquinolone resistance (*qnr*) gene. Some structural genes associated with the formation of efflux pump such as acrA, acrB and tolC were studied which indicate that efflux pump is also contribute in the emergence of MDR *S. flexneri* 2a.

**Conclusion:** Emergence of fluoroquinolone resistance and ESBLs in *S. flexneri* 2a has undermined the current treatment strategies as serotype 2a of *S. flexneri* has been identified as the predominant causative agent of endemic shigellosis. New initiative of drug designing and treatment regime should be advised.
Anti-Cancer Activity of Aloe Vera Ethanolic Leaves Extract against Various Cancer Cells.

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Introduction: Plants have their own anticancer properties due to the presence of phytochemicals such as polyphenols, steroids and taxols. Aloe vera plant possesses such a great variety of scientifically-proven active pharmaceutical ingredients (about 200) with unique combination properties, generate a broad spectrum of activity.

Objectives: The present study was carried out to evaluate the anticancer activities of Aloe vera ethanolic extract and to investigate the anti-cancer efficacy of A. vera by using cancer cell lines such as HeLa (human cervical carcinoma cell line).

Methods: The anticancer activities of the ethanolic leaves extract of A. vera were investigated using 3-(4, 5-dimethylthiazole-2-yl)-2, 5-diphenyl tetrazolium bromide assay on three human cancer cell lines HepG2 (liver cancer), HeLa (human cervical carcinoma cell line) and A549 (human lung adenocarcinoma epithelial cell line). In anticancer studies, A. vera ethanolic leaves extract showed potent proliferation inhibitory activity against HepG2, HeLa and A549 cell lines.

Results: The results have shown that the A. vera ethanolic leaves extract contain some active ingredients with the potential of being anticancer agents. A. vera ethanolic leaves extract has the potential to fight against cancer cells. Further work should be carried out on the characterization of specific anticancer components of A. vera.

Stunting and External Parasitic Infection among Children in a Low-Cost Flat in Ipoh.

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Introduction: For a country who once aspired to be a developed country by 2020, Malaysia has serious malnutrition problem among children. It is noted that 1 in 5 is stunted while 1 in 10 is underweight. In a study performed by Unicef Malaysia, which looked at rate of malnutrition among children in selected low cost flats in Kuala Lumpur, malnutrition was noted to be worse than the national average (Children Without). Stunting is one of the effect of malnutrition in which children are shorter for their age. It is interpreted as an indication for poor environmental condition or long term restrictions of a child’s growth potential.

Objective: to see whether there is stunting among children who attended a Health event at a low cost flat and also to see whether there is any parasitic skin condition

Methodology: The data in this study was collected during a health event for children in one of the low cost flat in Ipoh in the year 2018. There were 61 children who came for this event and all were included in the study. Thirty- two were boys and 29 girls. There were 5 children aged below 5. Data taken were height and weight and external
skin condition. Growth chart were taken from WHO and stunting defined as below -2SD for height/age.

**Results:** We noted most of the external parasitic infections were scabies, head lice and impetigo. There were a total of 8 boys who were stunted (13.1%).

**Discussion:** Stunting were noted at 13.1% of all the children. This is lower than the national rate of stunting at 17.7%. It is noted only among the boys. Given the same environment, girls seem to fare better than boys.

**PP1-22**

Knowledge and Attitude Regarding HPV Vaccination among the MBBS Students of UniKL-RCPM.

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**Introduction:** In Malaysia, free HPV vaccination is provided for schoolgirls aged 13 but not boys. This despite the fact that HPV not only cause cervical cancer but also other cancer such as anal cancer and oropharyngeal cancer which affect both men and women. The aim of this study is to determine the knowledge and attitude regarding HPV vaccination among the MBBS students of UniKL-RCPM.

**Methods:** The method used in this study is a descriptive cross-sectional study among 207 respondents from the MBBS programme of UniKL-RCPM. A set of questionnaire consisting of three sections with a total of 38 questions was given out. This covers the socio demographic details, knowledge, and attitude, respectively. Descriptive statistic and cross tabulation were used to analyze the association of knowledge and attitude with the gender and year of study. Pearson chi square was used to test our hypothesis.

**Results and Discussion:** Our results showed that there is no association between gender and knowledge regarding HPV vaccination (p>0.05). However, gender does have a significance influence on attitude towards HPV vaccination (p<0.05). There is also a significance difference between year of study and knowledge of HPV vaccination (p<0.05) but no significant difference between year of study and attitude towards HPV vaccination (p>0.05). Our conclusion is that while gender does not play a significant role in knowledge regarding HPV vaccination, it has a significant role in the attitude towards HPV vaccination. On the other hand, the year of study appears to have a significant influence on knowledge regarding HPV vaccination but not on the attitude towards HPV vaccination.

**PP1-23**

The Effects of Ambience Temperature on the Distribution and Abundance of Malaria Vector: Implications for Vector Control.

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**Introduction:** Malaria is still one of the most threatening diseases in Malaysia. A study was conducted in the coastal area of Kuala Penyu, Sabah, where the malaria vector, *Anopheles sundaicus* is highly abundant.
Objective: This study aims to determine the biting patterns and the relationship between meteorological factors and the abundance of *An. sundaicus*.

Methodology: Mosquitoes were collected indoors and outdoors by human landing collection from 1800 to 0600 h. All collected mosquitoes were identified to species level. Meteorological parameters including monthly temperature, rainfall, relative humidity and wind speed were analyzed.

Results: A total of 2,294 *An. sundaicus* were collected (2,010 outdoor and 284 indoor). Peak biting time for outdoor occurred between 2100 to 2200 h and between 2400 to 0100 h for indoor. The seasonal abundance of *An. sundaicus* appeared to be influenced by monthly temperature patterns (p=0.0044), compared to other meteorological parameters. The population densities of *An. sundaicus* showed the greatest abundance during high temperature season, April to August with the highest density was recorded in May, while December was the lowest.

Discussion: This study provides the information on biting patterns throughout the night and the seasonal abundance of *An. sundaicus*. This information served as a guidance for health service provider to educate on the importance of personal protective equipment among residents to prevent mosquito bites, as well as to improve vector control strategy planning to be more efficient, effective with optimize operating costs.

PP1-24

**Ocular Involvement in Melioidosis: A Case Series.**

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Introduction: Melioidosis, an infection caused by *Burkholderia pseudomallei*, is endemic in Southeast Asia and northern Australia. Melioidosis is well-known for its diverse clinical manifestations, ranging from pneumonia, genitourinary infection, skin infection, liver and splenic abscesses, neurological melioidosis to fatal septicaemia. Ocular involvement in melioidosis has rarely been reported.

Objective: This case series illustrate ocular manifestations in patients with melioidosis and its treatment outcome.

Methodology: This was a retrospective case series of four patients with ocular melioidosis who presented to Kapit Hospital from 2017-2018.

Results: All four patients presented with fever and unilateral periorbital swelling. Two of them were diabetics and farmers by occupation which predisposed to melioidosis, while there were no apparent risk factors identified in another two patients. Melioidosis was confirmed through positive blood culture for *Burkholderia pseudomallei* in three patients and strongly positive serology in one patient. All four patients were diagnosed with periorbital cellulitis with eyelid abscess, either via clinically or CT scan, but none complained of visual loss. Melioidosis has a propensity for multi-organ, disseminated infection as two patients described in this case series had concomitant pneumonia. Besides, splenic abscesses which frequently associated with melioidosis were also present in three patients. Surgical drainage of eyelid abscess was indicated in two cases and useful for diagnostic purpose. All four patients were treated with intravenous ceftazidime for 2-4 weeks, followed by eradication therapy which consists of trimethoprim-sulfamethoxazole and doxycycline. All of them achieved complete resolution of eyelid and splenic abscesses post-treatment without any long-term ophthalmic complications.
**Discussion:** Melioidosis affecting the eye can present as periorbital cellulitis and eyelid abscess. High clinical suspicion in the presence of risk factors and early treatment initiation were key to successful outcome. Surgical drainage of abscess is an important part of management besides standard antibiotic therapy.

**PP1-25**

**Sexual Transmission of *Burkholderia pseudomallei.***

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**Introduction:** Melioidosis, an infection caused by *Burkholderia pseudomallei*, has 3 important modes of acquisition namely inhalation, ingestion, and inoculation. Sexual transmission of *Burkholderia pseudomallei* is rare. We report a case of culture-proven melioidosis in a pregnant lady who likely acquired the infection *through sexual transmission.*

**Case Presentation:** A 25-year-old previously well lady presented with fever, urinary frequency and vaginal discharge for 1 week duration. She divorced 4 years ago and was sexually active with 1 male partner. Upon presentation, her vital signs and physical examination findings were normal. High vaginal swab was taken. Laboratory investigations showed leukocytosis and biohazard screening was non-reactive. Urinalysis revealed bacteruria and presence of *trichomonas vaginalis*. Urine pregnancy test was positive. She was treated for urinary tract infection with intravenous amoxicillin-clavulanate and metronidazole. Despite 3 days of treatment, persistent fever and metabolic acidosis were observed. Hence, the antibiotic was escalated to ceftazidime. Ultrasound scan performed by the Obstetrics and Gynaecology team showed intrauterine pregnancy of unknown viability. The falling trend of serial β-hCG confirmed a failing pregnancy, which was later followed by spontaneous complete abortion. The cultures of blood and high vaginal swab grew *Burkholderia pseudomallei* while urine culture was no growth. Fever and metabolic acidosis resolved on day 10 of antibiotic. The abdominal ultrasonography showed splenic abscesses. She received ceftazidime for 4 weeks, followed by oral doxycycline and trimethoprim-sulfamethoxazole. However, the latter was substituted with amoxicillin-clavulanate in view of pancytopenia. The repeat abdominal ultrasonography post-intensive phase treatment showed resolved splenic abscesses. She was discharged well with outpatient followup.

**Discussion:** This was the first case where *Burkholderia pseudomallei* was recovered from high vaginal swab. We postulated that *Burkholderia pseudomallei* which was detected in the vaginal secretion could be sexually transmitted from her partner. However, we were unable to establish it since her partner refused semen analysis.


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Introduction: In Malaysia, dengue has become a major public health problem, with an alarming rising trend in dengue outbreaks every year. The elimination of most productive breeding sites for Aedes spp has been applied to keep vector density below a critical threshold.

Objective: The objective is to study Aedes breedings at dengue outbreak localities in Bandar Tasik Selatan, by: i) mapping spatial distribution of breedings through a Geographical Information System (GIS) tool, ii) conducting spatial statistical analysis, and iii) examining characteristics of the breedings.

Methodology: Data was retrieved from entomological assessment activities at several dengue outbreaks that occurred throughout March 2016 in Bandar Tasik Selatan. Descriptive analyses were performed to examine the characteristics of the breedings. Three spatial statistical analyses [Moran’s I, Average Nearest Neighborhood (ANN) and Kernel Density estimation] were used to assess the spatial distribution of Aedes breedings.

Results: Results showed that the main breeding containers were gullytraps (18%), water containers (18%) and toilet pumps (14%). Species identification indicated that the majority of breedings originated from Aedes albopictus (52%) followed by Aedes aegypti (48%), with 36% of the larvae found at instar stage L4. Analysis using Moran’s I indicated that the breedings were random (p > 0.01) with z scores of -1.12. ANN analysis stated that the breedings occurred at an average distance of 25.83 meters apart. Several locations in the study area were found to have a high density of Aedes breedings by using Kernel Density estimation analysis.

Discussion: Application of GIS techniques to map the distribution and spatial analysis of Aedes breedings provides a comprehensive visual guide that will enable vector control efforts to be carried out with higher accuracy and efficiency.

Peer Interaction and Spiritual Applications with Anxiety Approaching Menarche in Adolescent Woman.

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Introduction: In adolescence there is puberty which starts from 8-14 years old that is between childhood and adolescence. Puberty in women is characterized by rapid body growth and first menstruation (menarche).

Objective: This research is to find out the correlation between the peer interaction and anxiety before menarche adolescent woman in Junior High School Kudus 2018.

Methodology: Method of the research is correlational analytic research with cross sectional. The population in this study was 148 respondents, and 38 respondents as
the sample. The instrument is questionnaire. Data analysis using univariate and bivariate with spearman rank test.

**Result and discussion**: Based on the study, the result is there is the relationship between the peer interaction and spiritual application with anxiety before menarche in adolescent woman in junior high school 2 kudus, indonesia 2018 with p_value 0.002. (p <0.05). It can be concluded that there is a relationship between peer interaction and spiritual application with anxiety before menarche in adolescent woman in Junior High School 2 Kudus 2018.

**PP1-28**
The Comparison of Epidemiologic Analysis Versus Phenotypic Characteristics among MRSA Isolated in a Clinical Training Centre.

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**Introduction**: There has been increasing data to suggest that community acquired Methicillin Resistant *Staphylococcus aureus* (CA-MRSA) are encroaching the nosocomial setting. Majority of CA-MRSA despite being virulent, is typically susceptible to multiple classes of antibiotics. Here by using epidemiologic analysis which based on time from admission to a positive culture and the phenotypic characteristics of antibiotic susceptibility testing, we compare the relationship of CA-MRSA isolated in our Clinical Training Centre with the antibiotics susceptibility patterns.

**Methodology**: A total of 32 MRSA isolated from January 2014 to August 2017 were subjected for analysis. The *S. aureus* were identified by standard microbiological methods, and antimicrobial susceptibility testing was performed by Kirby Bauer disk diffusion method. The CA-MRSA is defined as positive culture for *S. aureus* which is resistant to cefoxitin disk within 72 hours of admission.

**Result**: There were 7/32 (22%) of MRSA was regarded as CA-MRSA. Their phenotypic characteristics were resistant to penicillin, cefoxitin, clindamycin and erythromycin. Whereas the other 25/32 (78%) of MRSA showed resistant to all of the antibiotics mentioned in addition to trimethoprim-sulphamethoxazole.

**Conclusion**: The phenotypic characteristics of the CA-MRSA isolated in our clinical training centre based on epidemiologic analysis did not correlate with the definition of community acquired infections when compared to their phenotypic characteristics. Therefore, a high level of clinical suspicion should outweigh the epidemiologic or phenotypic characteristics in giving empirical therapy for patients suspected of CA-MRSA infections.

**PP1-29**
Factors Affecting the Level of Independence in Mental Retardation Children.

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**Introduction**: Based on the results of National Social Economic Survey data from 2009 until 2012, there is an increase of the percentage of disabilities in Indonesia, until
1.53%. Moreover, the percentage of persons with disabilities in Central Java was 3.19% from all Indonesian provinces (Ministry of Health, 2014). Children who are mental retardation are one of example of disorder that can be found in various places, with the characteristics the level of intelligence below the average (IQ of approximately 70 or lower), have limitations, slow and have difficulty adapting or do various social activities in the environment. (Hasan, 2010).

Objective: This study was to determine the correlation among socialization, parental communication, social support and the level of independence in mentally retarded children in SLB Kudus. This research method is a type of correlative analytic research using the Cross Sectional approach, with 51 respondents as the sample and taken by simple random sampling technique. The instrument used is a questionnaire. This study used Spearman rank.

Result and discussion: The results of this study is there is a correlation among socialization, parental communication, social support and the level of independence in mentally disabled children in SLB Kudus in 2018.

PP1-30
Investigation of Phytochemical Composition and Antibacterial Effect of Annona muricata Leaf Extract on Selected Urinary Tract Pathogens.

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Introduction: Annona muricata (A. muricata) or known as soursop has been traditionally used as remedies to treat many chronic disease, but the knowledge about therapeutic property of this plant against certain microorganisms especially urinary tract pathogens is limited. Urinary tract infection has become a more grievous problem today due to the increase rate of antibiotic resistance among uropathogenic bacteria.

Methods: This study aimed to determine the presence of phytochemical constituents and antibacterial activities of methanolic extract of A. muricata leaves against selected urinary tract pathogens (Staphylococcus saprophyticus, Escherichia coli and Klebsiella pneumoniae).

Results: The antibacterial properties of A. muricata were determined using standard disc diffusion and broth microdilution methods. The extract had significantly inhibitory effect against S. saprophyticus with the zone of inhibition was 11 mm, while no effect showed on Escherichia coli and Klebsiella pneumoniae. The lowest concentration of Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) values of extract against Staphylococcus saprophyticus were 7.81 mg/ml and 15.63 mg/ml, respectively. The qualitative phytochemical analysis was performed using standard protocols demonstrated the presence of alkaloids, flavonoids, tannins and saponins in the extract which are responsible for the antibacterial activity.

Discussion: Based on the results, S. saprophyticus was found to be sensitive to the methanolic leaves extract. Therefore, A. muricata leaves can be potentially used as an antibacterial agent to control the urinary tract pathogen infections. Further analysis on phytochemical consituents is necessary to discover the actual therapeutic value of this plant.
Microbial Contamination of White Coats of Medical Students – A Cross Sectional Study.
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Introduction: White coats have been worn by medical students and professionals around the world for decades, which symbolises the standard of professionalism and care towards patients. However, these white coats are also known to be potential vehicles of microorganisms and might lead to cross infection.

Objective: This study was conducted to find out the level and type of microbial contamination present on the white coats of medical students to assess the risk of transmission of pathogens.

Material and method: In this cross-sectional study, a total of 60 white coats of 30 participants from clinical years and 30 from preclinical years were included. Swabs were collected from the pockets areas of the white coats and were cultured on microbiological media. Microorganisms isolated were identified using biochemical characterisation methods. A set of questionnaires was given to assess student’s perception towards contamination, the way they handle and clean as well as the duration of wearing white coats.

Results: Staphylococcus aureus was the main pathogen isolated from both clinical and preclinical white coats with the positivity rate of about 45%. Further, screening of these S. aureus isolates revealed that about 22.2% of them were methicillin-resistant Staphylococcus aureus (MRSA). Coagulase negative Staphylococcus was the second most isolated (40%) followed by Pseudomonas sp. Although clinical students have greater awareness and tend to wash their white coats more often, their white coats were found to be more contaminated, probably because they wore it for a relatively longer period of time.

Discussion: The study findings highlight the importance of white coats harbouring pathogenic bacteria and their potential role in cross infection. Medical students should be educated on the importance of proper maintenance and handling practices of white coats to prevent microbial carriage and cross infection.

Malaysian Passerine Influenza A Virus Degenerates the Tracheal Epithelium.
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Introduction: A wild-type Influenza A virus (IAV) isolate of the H4N3 subtype was obtained from a passerine bird, magpie robin (Copsychus saularis musicus) which had died at an aviary in Selangor, Malaysia. The virus was designated as A/magpie robin/Malaysia/23/89 (H4N3).

Objective: The virus was used to study virus-induced degeneration of the epithelial cells of the chicken trachea.
Methodology: At an infectivity of $10^{7.5}$ of EID$_{50}$/ml, the virus was intranasally inoculated into 60 four-week-old chickens. The upper and middle parts of each trachea were examined under scanning and transmission electron microscopes (SEM and TEM).

Results and Discussion: On days 1 to 3 post-infection (p.i.), both SEM and TEM revealed hypertrophy and hyperplasia of goblet cells, deciliated areas on the tracheal surface, varying in size, increased through day 5 p.i. On days 2 and 3 p.i., fine intranuclear inclusions composed of fine granular and filamentous materials were seen by TEM in the infected epithelial cell surface. Intra-cytoplasmic inclusions were detected at days 3 and 4 p.i. The epithelial changes seen at day 4 to 6 p.i. included epithelial degeneration, vacuolation, sloughing, pseudodiphteritic membrane covering infected areas, serous and catarrhal exudates, and infiltration of inflammatory cells: heterophils, lymphocytes, and macrophages. Cilial regeneration commenced at day 7 p.i. The cilia appeared as large microvillus-like projections on day 8 p.i. On day 12 p.i., there was a complete regeneration of the cells and cilia, giving a normal appearance to the tracheal epithelium, resembling the normal epithelium of the control. The findings from this study indicate that the virus can be developed, with some genetic and antigenic modifications, into a potential model system for degeneration, ciliostasis and other pathological studies on the epithelial cells of the avian, other animal or human trachea.

PP1-33
The Characteristics of a Malaysian Passerine Influenza A Virus Match with the Selection Criteria for a Candidate Vaccine Virus.

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Introduction: An influenza A virus (IAV) designated as A/magpie robin/Malaysia/23/89 (H4N3 subtype) was isolated from a passerine bird, magpie robin (Copsychus saularis musicus) at an aviary in Selangor, Malaysia. It was characterized at the Central Veterinary Laboratory (CVL), England, and Universiti Pertanian/Putra Malaysia (UPM).

Objective: This paper attempts to compare the characteristics of the Malaysian IAV to the criteria for selecting a candidate vaccine virus (CVV), that have been established by the National Center for Immunization and Respiratory Diseases (NCIRD), USA (2017).

Methodology: The characteristics of the isolate, namely, its virulence, pathogenicity, risk to humans, immunogenicity, growth ability and gene availability, were matched with the NCIRD’s criteria for selecting a CVV.

Results and Discussion: The pathogenicity indices of this wild-type IAV, viz, the ICPI of 0.10 in one-day-old chicks, and the IVPI of 0.10 in six-week-old chickens indicate that the virus has low virulence and pathogenicity for chickens. At an infectivity of $10^{7.5}$ of EID$_{50}$/ml, it could infect four-week-old chickens without causing morbidity and mortality, although electron microscopy revealed mild ultra-structural alterations including tracheal epithelial degeneration, vacuolation, sloughing, and deciliation. It posed no risk to human health, as there was no morbidity and mortality among the virus handlers at the CVL and UPM. The virus could stimulate a humoral response in
infected chickens, resulting in the HI titre range of 16 to 32 at days 12 and 14 post-infection. It could grow in chicken embryos, resulting in $10^{7.3}$ of EID$_{50}$ per ml, implying that sufficient virus quantities can be propagated for vaccine production. It offers haemagglutinin (HA4) and neuraminidase (NA3) genes for reverse genetics - a useful procedure for creating attenuated IAV strains for human or animal vaccine production.

PP1-34
Fixed Cutaneous Sporotrichosis and Enterobacter Co-infection in an Immunocompetent Patient.

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Introduction: Sporotrichosis is a deep cutaneous fungal infection presenting as a chronic granulomatous skin plaque caused by thermally dimorphic fungus, *Sporothrix schenckii*. Following traumatic inoculation of contaminated plants or soil, lymphocutaneous type is commonest; albeit rarely presenting as fixed cutaneous, or disseminated type in the immunocompromised. A previous study on inpatient soft tissue infection showed only few cases of isolated *Enterobacter cloacae*, representing 4.89% of hospitalisation.

Methodology: A 24-year-old man, with no prior illness, presented with a red-brown plaque over the back, increasing size over two months, associated with purulent discharge, pain and itchiness. He recalled scratching his back on a tree bark while working in his orchard previously. He had neither fever nor constitutional symptoms. On examination, there was an erythematous red-brown plaque with irregular margin over the right lower back. There was no fluctuance, discharges or associated lymphadenopathy. Other systems were unremarkable. Skin biopsy was sent for culture.

Results: Skin tissue culture grew *Sporothrix* Schenckii and *Enterobacter cloacae*. Skin biopsy showed granulation infiltrated epithelioid histiocytes forming granuloma with adjacent tissue necrosis. Heavy mixed of acute and chronic inflammatory cell was seen with multinucleated giant cells. Periodic Acid-Schiff and Gomori-methenamine silver stain were negative for fungal body. He was commenced on oral itraconazole 200mg twice daily for 3 to 6 months and completed oral amoxycillin-clavulanic acid 625mg twice daily for 1 week.

Discussion: Sporotrichosis has high prevalence in tropical countries due to its warm climate, however bacterial co-infections are rarely reported. Manifestations include plaques, nodules, plaques, warty, ulcerative subcutaneous mass, and discharging sinuses. Histopathology is usually nonspecific and mimics granulomatous diseases. Different cutaneous morphology poses a diagnostic challenge, hence we emphasize on sending cultures due to the the scarcity of this fixed cutaneous presentation.

PP1-35
Knowledge, Attitude and Practice on Nutrition among Students of UniKL RCMP.

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Cluster for Integrative Physiology and Molecular Medicine (CIPMM), Universiti Kuala Lumpur Royal College of Medicine Perak, Malaysia.
Introduction: Nutrition plays a premier role in life and it is linked to multiple components, systems, and processes, including those occurring during diseases, such as infection. University students tend to have poor dietary practices, which ultimately affect their nutritional status. Poor nutritional status lowered immunity causes a person to be more susceptible to infections. This project seeks to assess nutrition knowledge, eating attitudes and practices among university students in Ipoh.

Methods: Questionnaires were distributed and a total of 108 students responded. The results were analyzed using SPSS software.

Results and Discussion: This study revealed that 64% students practice good diet habit and 50% are paying attention on taking only healthy meals (less sugar, salt and fat, etc). However 78% of students do not concern about practicing a balanced diet according to the food pyramid, and in fact 50% of them are still practicing unhealthy (poor) diet. Despite that, most of the students (97%) had good knowledge of nutritional requirements for health and were aware that unhealthy eating habit may give rise to diseases. A better understanding of the link between diet and health among college students is important for developing programs and behavioral change strategies to improve their lifestyle in general, and to reduce diet-related diseases and infection in particular. Giving university students the necessary skills to be more aware of what a healthy diet style means would empower them to make better food choices throughout their life.

PP1-36
LOREK NGALOR (Organic Larvacide with Nano Technology from Moringa oleifera Leaves) to Increase Mortality of Aedes aegypti Larvae.
Bestari RS*, Himawan MA, Sutrisna EM, Setyaningsih E
Universitas Muhammadiyah Surakarta Indonesia.

Introduction: In Indonesia, health problems are still the main problem that must be solved. One of the diseases that become pandemic is Dengue Hemorrhagic Fever (DHF). The Ministry of Health recorded the rates of dengue fever in January 2018 was 6800 cases and 43 deaths. In February 2019 there were 13683 cases and 133 deaths in Indonesia. The program to control DHF in Indonesia, 3M Plus or Mosquito Nest Erradication is still held by government. Larvacide from chemicals causes many side effects and is not safe for environment, the solution is using natural larvacides. One of the plants that has potential to eradicate Aedes aegypti larvae is Moringa oleifera leaves. Larvacide products that are currently made by extraction still have deficiencies in the molecular size. Recently, advanced technology having very small molecules that are more easily absorbed.

Objective: The objectives of this writing is to determine the mechanism of organic larvacide using nano technology from Moringa oleifera leaves to increase the mortality of Aedes aegypti larvae.

Methodology: The method of this writing is article review. The review comes from 23 scientific articles. After analyzing and synthetizing the review, we create product of lorek ngalor.

Results and discussion: From the reviews of scientific articles, it is found that the compound contained in the moringa can act as larvacide. They are flavonoid, alkaloid and tannin. Flavonoids act as respiratory toxins which cause the death of larvae. Alkaloid has ability to damage nerves of larvae. Tannin has ability as poison in the
larval stomach. Nano technology of this product is applied to the manufacture of organic larvasidal packaging. It is innovated by making gauze pores which have nanometer size density. So the larvacide is natural, durable, practical and cheap.

POSTER PRESENTATION - DAY 2

PP2-01
Application of Routine Parasitological Staining for Bronchoalveolar Lavage Specimen.
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Introduction: The commonest stain used for bronchoalveolar lavage specimen are Papanicolau, Diff-Quick and Hematoxylin and Eosin staining. These are mainly used to detect abnormal cells, inflammatory cell, viruses, and bacterial infection. However, they cannot detect parasites in lungs such as Lophomonas blattarum and helminthes larvae.

Objective: To determine the application of routine parasitological staining for bronchoalveolar lavage specimen in diagnostic interpretation.

Methodology: A total of 60 fresh bronchoalveolar lavage specimens were concentrated and fixed on slides. They were submitted to different methods of routine parasitological permanent staining includes direct wet staining (normal saline, iodine), Giemsa, Gram-chromotrope Kinyoun and modified Ziehl Neelsen. Images were taken using Image Analyser Lumenera Infinity-2. The clarity of slides, coloring of cells and morphological aspects of the cells, pathogens were analyzed and compared.

Results: Giemsa and Gram-chromatrope Kinyoun stain were able to enhance the common bronchoalveolar and inflammatory cells, bacteria, fungal and parasites in the specimens. The cells and pathogens morphology were seen clearly and comparable to other stains mentioned before.

Discussion: Determination of which stains are the best and the most cost-effective to aid diagnosis is very important in resource-limited settings. Parasitological staining uses simpler and faster techniques, cheaper and safer reagents and all are commonly available in most of the lab. Our data suggest that parasitological staining are very useful and practical to diagnose bronchoalveolar lavage specimen especially in resource limited and tropical countries where parasites may co-infect the lungs with bacterial and fungal agents.
PP2-02
Biosynthesized Gold Nanoparticles using Lignosus rhinocerotis and Chitosan as a Healing Accelerator for Diabetic Wound.
Ahmad Yasser Hamdi Nor Azlan*, Haliza Katas and Mohd Fauzi MH Busra

Introduction: Management on diabetic wounds by offering correction of biological abnormalities caused by hyperglycaemia and prevention of infection is currently not available. This could be attained by applying an approach that combining inhibition of prostaglandin transporter (PGT) which will promote wound healing using Dicer subtract small interfering RNA (DsiRNA) and gold nanoparticles (AuNPs) with antibacterial properties. Objective: The objectives of the study are to develop and optimize chitosan stabilized AuNPs using aqueous extract of sclerotium of Lignosus rhinocerotis and to determine the antibacterial activity of AuNPs in vitro. Materials and Methodology: AuNPs were produced via green synthesis using different concentrations of cold and hot sclerotium of Lignosus rhinocerotis extract (CLRE and HLRE, respectively), a type of mushroom, also known as Tiger Milk Mushroom. Chitosan (CS) was added into the formulation as stabilizer to prevent particle aggregation. Results: Chitosan stabilized AuNPs (CS-AuNPs) exhibited surface Plasmon resonance (SPR) band at a wavelength of 533 nm as determined by UV-vis spectrometer. Particle size of CS-AuNPs synthesized using CLRE and HLRE formed an average particle size in the range of 202 ± 49 to 273 ± 79nm and 190 ± 31 to 322± 28 nm, respectively. FTIR spectra suggested the involvement of protein and polysaccharides in CLRE and HLRE as reducing biomolecules, reducing gold ions into AuNPs. CS-AuNPs formed were spherical, triangular, pentagonal and irregular in shape. X-Ray Diffraction analysis confirmed that CS-AuNPs synthesized using HLRE had a better crystallinity compared to CLRE. CS-AuNPs synthesized by both types of extracts displayed effective antibacterial activity against Gram-negative bacteria (Pseudomonas aeruginosa and Escherichia coli) and Gram-positive bacteria (Staphylococcus aureus). Conclusions: The multi-actions of these nanocomposites are expected to be useful as healing promoter for diabetic wound treatment.

PP2-03
Ampicillin-Resistance Strains among Haemophilus influenzae Isolates from University Malaya Medical Center (UMMC).
Muhamad, Anis Najwa*, Abdul Jabar, Kartini; Teh, Cindy Shuan Ju; Idris, Nuryana

Introduction: Haemophilus influenzae is one of the important bacterial pathogens that can cause both invasive and respiratory infections. Antibiotic treatment may lead to the development of antibiotic resistance in H. influenzae strains. There are two common types of ampicillin-resistant H. influenzae; β-lactamase Positive Ampillin
Resistant (BLPAR) and β-lactamase Negative Ampicillin Resistant (BLNAR). BLPAR was due to the production of enzyme called β-Lactamase, while BLNAR is due to the alteration of penicillin-binding protein (PBP) site. In this research, we aim to identify the mechanisms of ampicillin-resistance among the 2015-2017 *H. influenzae* isolates collected from UMMC.

**Methodology:** Two hundred and twenty-six of *H. influenzae* isolates stocked in 80% glycerol stock from 2015 to 2017 collected from the Microbiology Diagnostic Laboratory of University Malaya Medical Center was used in the research. Antibiotic sensitivity test (AST) against ampicillin was done by following CLSI guidelines using the Kirby-Buer disc diffusion method. All ampicillin resistant strains were tested with β-lactamase production using cefinase discs. Strains that produce β-lactamase were tested for the detection of TEM-1 β-lactamase and ROB-1 β-lactamase by using PCR assay targeting *blaTEM* and *blaROB* gene. Meanwhile, strains that does not produce β-lactamase were tested for the detection of partial *fts1* gene for identification of BLNAR.

**Result:** We found that among the 226 strains of *H. influenzae*, only 57 strains was determined as ampicillin resistant through AST. From the 57 ampicillin-resistant strains, 42 of them produced β-lactamase and all 42 of them harbour the *blaTEM* gene. None of the strains have *blaROB* gene. Meanwhile, *fts1* gene was detected in 11 strains that do not produce β-lactamase.

**Discussion:** From the results, we suggest that resistance towards ampicillin among UMMC *H. influenzae* isolates in our study were mostly due to the production β-lactamase and only a few amp-resistant strains were due to the alteration of PBP site.

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**PP2-04**

**Leptospirosis – An Analysis of Different Pattern of Presentation in an Army Camp Outbreak.**

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**Introduction:** Leptospirosis is endemic in Malaysia with frequent outbreaks. Typically medical officers would diagnose one as probable leptospirosis when there is history of fever with kidney or liver involvement and raised serum creatinine phosphokinase level. However there are increasing number of cases with atypical presentation, which renders the clinical diagnosis challenging. This is a study to determine presentation patterns of leptospirosis during an outbreak.

**Methodology:** This is a retrospective observational study of an outbreak that occurred in an army camp, Sarawak in April 2012. Data were collected by retrieving patient’s medical records, including sign and symptoms, laboratory findings and outcome.

**Results:** There were 47 cases confirmed as leptospirosis with Microscopic Agglutination Test (MAT). Out of this only 50 % of them had positive point of care serology test done at initial encounter in emergency department. 64 % had no fever on presentation and majority (58%) presented with mild upper respiratory tract and gastrointestinal symptoms. Only 5 patients had leucocytosis (12%) with 86% within normal range. 50% had normal platelet count and 60% had normal renal function test. However 74% had creatinine phosphokinase level more than 200.
Conclusion: Leptospirosis is difficult to diagnose as it has wide spectrum and ambiguous clinical presentation. Most of the laboratory finding may not be helpful in excluding the diagnosis. The point of care serology test done in the primary setting should not be relied in a highly suspicious case. In a cluster where leptospirosis is endemic, the Microscopic Agglutination Test (MAT) might be warranted, or else empirical antibiotic may be considered even for mild symptoms. As this study were only done in one locality we suggest a larger number of patients with all their clinical features and laboratory parameters examined to reach a comprehensive conclusion.

PP2-05
Hematological Values in Small Ruminant with Theileriosis in Perak, Malaysia. Azima Laili Hanifah, Nurulaini Raimy, Adnan Musbah, Lily Rozita Md Hakin, Debbra Marcel, Erwanas Asmar Ismail, Chee Wee Kiang, Azizah Darus.
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Introduction: Four breeds of cattle; Kedah-Kelantan, Brangus, Friesian, Cross-breed cattle and two breeds of sheep; Damara and Cross-breed sheep were involved in this study. All samples analyzed were from the source of laboratory records that were coming to Parasitology and Hematology Section in Veterinary Research Institute.

Objective: This study was conducted to determine the hematological value of small ruminants infected with Theileriosis.

Methodology: A thin blood smear was made for blood samples while hematological value was determined by automated hematology analyzer.

Results: Prevalence of Theileriosis in infected cattle and sheep were 45% and 43% respectively and there was no significant different. However, the hematological examination found that there were statistically significantly different between both ruminant in MCV (p=0.016) and MCHC (p=0.019) values but non-significant different in WBC and platelet counts, HB concentration, PCV% and MCH values. Among the infected cattle, Cross-breed and Kedah-Kelantan cattle showed a significant different in PCV%, HB concentration, RBC counts, MCV and MCH values. Theileriosis among these ruminants caused matted hair, flu, anemia, loss of appetite, lumpy jaw, enlarge of lymph nodes, miscarriage and sudden death.

Conclusion: Kedah-Kelantan cattle suffered from high parasitemia while Cross-breed cattle with macrocytic hypochromic anemia. Frequent examination required to prevent the spread of the diseases among the population furthermore to avoid animals suffering from critical symptom resulting in death.
PP2-06
Level of Knowledge of Hand, Foot & Mouth Disease (HFMD) among Indoor Playground Workers.

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Introduction: Playgrounds can be a potential source of Hand, Foot and Mouth Disease (HFMD) transmission. There is a lack of studies on knowledge of indoor playground workers of HFMD and its prevention.

Objective: This study aims to address this issue by developing a knowledge questionnaire and determining the level of knowledge on HFMD among this occupational group.

Methodology: In the first phase, the ‘Hand, Foot & Mouth Disease Knowledge Questionnaire for Indoor Playground Operators/Workers at Shopping Malls’ (‘Soal Selidik Pengetahuan Penyakit Tangan, Kaki dan Mulut di Kalangan Pengusaha/Pekerja Taman Permainan di Pusat Membeli-Belah’) was developed, pre-and pilot-tested. The Malay questionnaire with 21 items was generated from available information distributed by the Malaysian Ministry of Health in their health promotion work. In the second phase, the questionnaire was distributed to indoor playground workers of shopping centres in Kuala Lumpur.

Results: A total of 20 workers participated in the study. The average age of participants was 33.7 years old. For general knowledge of HFMD, 20% (n=4) had very good, 55% (n=11) had good and 25% (n=5) had fair knowledge levels. For specific knowledge on HFMD prevention at indoor playgrounds, most (55%, n=11) had very good knowledge, 40% (n=8) had good and 5% (n=1) had fair levels of knowledge. Overall, a total of 30% (n=6) of workers had very good, while 50% (n=10) had good and 20% (n=4) fair knowledge levels.

Discussion: The indoor workers had an overall good level of knowledge of HFMD and its prevention. The questionnaire can be used to gauge weaknesses in their understanding. Health care workers can focus on gaps of knowledge when giving health education for HFMD prevention.

PP2-07
Phytochemical Analysis and Antimicrobial Effect of Hibiscus rosa-sinensis L. Leaves Extract against Selected Skin Pathogens.

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Introduction: Persistent development of bacteria resistant strains against synthetic antibiotics drugs has become a major concern to the public health that associated with increased mortality, excess hospitalization and financial costs in patient treatment management. Due to the emerging threat, greater attention has been drawn to utilize medicinal plants as natural alternative for antimicrobial agents.

Methodology: This study was conducted to evaluate the antimicrobial activities of methanolic leaves extract of Hibiscus rosa sinensis L. against selected skin pathogens.
(Staphylococcus aureus, Klebsiella pneumoniae, Candida albicans) using disc diffusion and broth microdilution methods. The tested extract was also screened qualitatively for their phytochemical compounds.

**Results:** The highest inhibition zone was showed against Candida albicans (11.70mm), followed by Klebsiella pneumoniae (8.30mm). Hibiscus rosa sinensis L. had an inhibitory effects at concentration of 500 mg/ml against selected pathogens with no effects on Staphylococcus aureus. The Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) values against Klebsiella pneumoniae were equal (500mg/ml), while two-fold greater concentration of the extract is required to kill Candida albicans (MIC= 500mg/ml, MBC=1000mg/ml). The phytochemical screening revealed the presence of alkaloids, flavonoids, phenols, saponin and tannins in the leaves.

**Discussion:** The methanolic leaves extract showed the highest antimicrobial activity against the opportunistic fungus, Candida albicans, followed by pathogenic bacteria, Klebsiella pneumonia. The dual effects observed in this study suggest that the Hibiscus rosa sinensis L. has a potential antimicrobial effect in controlling and treating skin pathogen infections.

**PP2-08**

A Case of *Rhodococcus* Immune Reconstitution Syndrome (IRIS) in a Patient with HIV Infection.

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**Introduction:** *Rhodococcus* sp. is an aerobic gram positive coccobacilli, a zoonotic intracellular pathogen, increasingly recognized to cause infection in patients with immune system dysfunction. Pulmonary infection is the most common form of infection in human.

**Case Report:**
A 38-year-old man presented with 1-month history of fever, cough and constitutional symptoms. Initial CXR (chest X-Ray) showed ill-defined air space opacities at right upper zone with a small cavity. [Figure 1(a)]. He was tested positive for HIV-1 with CD4 count of 9 cells/mm3. Investigations including bronchoalveolar lavage were negative for pulmonary tuberculosis. He was treated as smear-negative PTB but failed to respond as he was symptomatic and the follow-up CXR showed increased right upper zone opacity with spread to the mid zone.[Figure 1(b)]. Blood culture then grew *Rhodococcus* sp, which then anti-tuberculosis were ceased and azithromycin and ciprofloxacin initiated. His condition improved both clinically and radiologically after starting treatment for *Rhodococcus* pneumonia. Four weeks later, CXR showed predominant right upper lobe involvement with increased opacities and cavities. [Figure 2(a)] The patient was commenced on antiretroviral therapy (ART) consisting of tenofovir fumarate, emtricitabine and efavirenz.

One month later, despite clinical improvement, he developed radiological deteriorations with worsening right upper lobe consolidation, now with evidence of partial right upper lobe collapse,[Figure 2(b)] which could be attributed to IRIS. However, since the patient remained asymptomatic, the treatment for *Rhodococcus* pneumonia and ART were continued. CXR 3-months after initiation of treatment for Rhodococcus showed marked improvement with residual opacities at right upper lobe and no evidence of cavity [Figure 3]. The patient developed IRIS 29-days after the
initiation of ART although he was clinically well. The standard of care would have to keep him under close review, with a plan to commence corticosteroids if any deteriorations. IRIS typically resolves by itself, which what happened to this patient at 3 months post-ART initiation where the lung cavitation on CXR had disappeared.

**PP2-09**
**HCV Screening among Asymptomatic Patient in a Specialist Centre in Malaysia.**
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**Introduction:** Hepatitis C virus infection remain as one of important cause of chronic liver disease, hepatocellular carcinoma and mortality in Malaysia. Progression from acute infection to chronic liver disease is high among adult. With recent development and availability of direct acting agents (DAA) in Malaysia, it has become feasible for the treatment to be initiated during acute stage to reduce the risk of chronicity. In Malaysia, 75% patients are asymptomatic and this can lead to significant number of miss opportunity for diagnosis. This highlight the need to have population based screening. As for now, there is no national HCV screening programme in Malaysia.

**Objective:** This study aim to provide preliminary data on HCV prevalence among asymptomatic patients in a specialist center in Malaysia.

**Methodology:** A retrospective study was done where data of 6389 patients that were screened for HCV antibody by chemiluminescence imunoassay (CLIA) during the year 2013 until 2016 were examined. These patients undergo routine medical checkup or screening prior cardiac procedure. Those reactive by CLIA were then confirmed by particle agglutination (PA) test.

**Results:** There were 33 (0.5%) new cases detected during the screening. Seventy five percent of them were male. Majority of them (60%) aged >50 years old.

**Discussion:** This preliminary study showed that screening detects small but significant percentage of new HCV cases among screened population and suggest that screening provides opportunity for early diagnosis and initiation of treatment.

**PP2-10**
**Rabies Outbreak Management in Perak State, Malaysia: The One Health Approach in Action.**
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**Introduction:** The incident of group A streptococci pharyngitis is reported to be within 10-15% in children population less than 15 years old. Group A streptococcal pharyngitis or more commonly known as strep throat, is known to cause non-suppurative complication which is acute rheumatic fever and acute glomerulonephritis. This complication is preventable by antibiotics although overuse of antibiotics in a primary care setting is one of the main factors of current emerging antibiotics resistance. While using conventional throat culture which is time-consuming and
delays in getting the final result to assist management, rapid streptococcal antigen detection (RADT) is a good alternative for diagnosis.

Objective: The objective of this study is to evaluate RADT in comparison with conventional throat swab culture.

Methodology: We collected throat swab from 70 children ages 3-15 years old who presented with sore throats in Primer Clinic HUKM. RADT by immunochromatography using Bionexia Strep A panel and throat swab culture was performed simultaneously. Cohen’s Kappa was run to determine if there was an agreement between the two methods.

Results: There was a near perfect agreement between the two methods, $\kappa = 0.901$ (95% CI, 0.711 to 1.09), $p<0.001$. The prevalence of strep throat in this study was 7%. Otherwise, there is no correlation between fever ($p = 0.579$), cough ($p=0.163$), tonsil enlargement ($p=1$), or lymph node enlargement ($p=0.29$) with positive throat culture result.

Discussion: This study showed that clinical assessment alone is not enough to diagnose strep throat. In conclusion, RADT is a good alternative method to be used in the diagnosis of strep throat and preventing overuse of antibiotics.

PP2-11
Acute Gastroenteritis Outbreaks in Perak, Malaysia: An Overview.

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Introduction: Acute gastroenteritis (AGE) is the most common cause of death in children globally. In Malaysia, it is among the most common cause of hospital admission (6.6% in a study) and is prevalent in children (4.4%). In Malaysia and in Perak State, majority of the food and water borne diseases (FWBD) outbreaks were reported as food poisoning rather than AGE.

Methodology: This is a descriptive study of AGE outbreaks reported in Perak state and their causes. Secondary data during epidemiological week (EW) 1/2-018 to EW 10/2019 is obtained from the Malaysian Ministry of Health e-Wabak online reporting system and the final outbreak reports from the District Health Offices. Data analysis is done by Excel 2016 programme.

Results: AGE outbreak episodes account for 31.3% of all FWBD outbreaks reported during EW 1/2-018 to EW 10/2019. The median of the global attack rate, median proportion of under 5 year old per episode, and median proportion of cases admitted to hospital per episode were 21.4%, 14.3% and 6.3% respectively. The outbreaks mainly occurred among household in private homes (35.0%), in nurseries or kindergartens (20.0%), schools (15.0%), and residential care centre (10.0%). Pathogens responsible for the outbreaks were viruses (40% Norovirus and 20% Rotavirus), and Salmonella Weltveredden bacteria (15.0%).

Discussion: AGE may be diagnosed interchangeably with food poisoning by clinicians when reporting cluster of cases. Majority of the AGE outbreak reported occurred in private homes, nursery or kindergarten or schools. Since 60.0% of the episodes were caused by viruses, viral aetiology must be considered when clinical samples are taken to identify the source and cause for AGE outbreaks. Further study or surveillance on viral AGE trends in Malaysia is recommended to to strengthen the FWBD control programme in Malaysia.
PP2-12
Case Series Describing the Epidemiology of Extended Spectrum Beta-Lactamases Enterobacteriaceae (ESBL-E) Producing Organisms at a Tertiary Hospital in Melbourne, Australia using Whole Genome Sequencing.
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Introduction: The recent application of whole genome sequencing (WGS) to MDROs has increased the ability to rapidly characterise antimicrobial resistance genes and infer genomic relationships to define likely transmission networks with epidemiologic data.
Objective: We aim to describe the epidemiology of ESBL-E producing organisms among patients by using WGS method.
Methodology: We prospectively screened patients for ESBL-E producing organisms using rectal swab on admission, discharge and weekly for 8 weeks between April until June 2017. All patients in the intensive care unit (ICU) and haematology ward with a positive clinical or screening sample for ESBL-E, who have been admitted as an inpatient, were included in the study.
Results: A total of 64 patients and 76 isolates were included into the data analysis. We found a female predominance with a median age of 66 years and median days of hospitalization of 10 days [1-154 (min-max)]. Only one patient had history of hospitalization within the last 12 months. Most were admitted from home and just a small cohort from nursing home. Four patients showed evidence of acquisition during hospitalization. We also identified an Australian-borne Thai resident with an E coli carrying mcr-1 gene. We did not identify any positive transmission of ESBL-E among patients.
Discussion: Data suggest that most patients may have acquired ESBL-E before admission and the identification of a patient carrying a mcr-1 gene illustrated the advantage of fast identification using WGS for infection control purposes.
Conclusion: A minority of patients showed to have acquired the organism during hospitalization. This suggest that most patients might have acquired ESBL-E prior to admission and were not linked among each other.

PP2-13
Animal Bite Surveillance System: It is an Appropriate Tool for Rabies Prevention among Human.
Mohammad Basir MF, Abdul Halim HI, Othman MI
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Introduction: Malaysia was declared as a free rabies country by World Organization for Animal Health (OIE) in 2012 but lost the status in 2015 due to canine Rabies in Perlis. There are very limited studies on animal or dog bite in Malaysia is available.
Objective: To determine the role of animal bite surveillance system in prevention of Human Rabies.
Methodology: It is a descriptive analysis on continuous animal bite surveillance in Perlis from 2016 to 2018. All notified cases involved bite in Perlis or cases addressed in Perlis were registered and included in analysis. Notification received by Kangar
District Health Office from both private and government health facilities (clinic and hospital).

**Results:** The total number of 343 cases has been notified. The highest number victims were male (64.7%) from Chinese race (48.4%). Victims in the highest percentage (16.3%) were in the age group of 50-59 years old followed by 10-19 years old age group (15.5%). Majority of the bite were by dog (93.3%) and most of them were owned (59.8%). Area of the highest number of cases are Titi Tinggi, followed by Chuping and Kuala Perlis. Injuries most commonly involved the lower extremities (58.9%) with injury category 2 (71.1%). Tetanus vaccine, rabies vaccine, and rabies immunoglobulin were administered for 80.2%, 87.2% and 2.6% respectively. Most of the treatment received as outpatient (98.8%) and most of them receive early treatment in the hospital (72.9%) within the same day of bite happen (81.3%). No human rabies observed during this period.

**Discussion:** Good animal bite surveillance system intended to be sensitive in detecting animal bite case, appropriate risk assessment, prompt early management with good referral system and follow up. Hence, suggest the prevention transmission of canine Rabies to human Rabies.

**PP2-14**

**Identification and Characterization of Enteropathogen Non-typhoidal Salmonella in a Tertiary Centre in Kota Kinabalu, Sabah.**

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**Introduction:** Enteropathogen invasive non-typhoidal salmonella (iNTS) has emerged as a public health issue in resource limited countries which is associated with bacteremia and gastroenteritis. However, there is limited published data on the epidemiology, the clinical features and antibiotic resistance pattern among iNTS patients in Sabah.

**Objective:** A retrospective study was conducted at a tertiary referral hospital in Sabah to determine the iNTS and its antimicrobial susceptibility profiles during 2016 to 2018.

**Methodology:** All the clinical samples were examined for culture and sensitivity testing and suspected pathogen isolated was identified using Vitex2 (Biomerieux, France) and Kirby-Bauer method followed CLSI (USA) guideline for sensitivity testing. Isolates was sent to Ipoh Public Health laboratory for further identification. Ethical approval was obtained from Medical Research Ethics Committee (MREC), Ministry of Health Malaysia (NMRR-16-1163-30925).
PP2-15
Influence of Medium Composition in the Recovery of *Leptospira* after Storage at Low Temperature.
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**Introduction:** Preservation of *Leptospira* isolates by freezing and storage in liquid nitrogen undoubtedly offers a convenient and simple method. However, this method is not commonly used as most serovars could not be recovered after storage at low temperature. Injury to leptospires cells during freezing and storage is inevitable despite of the optimized age and concentration of culture as well as the freezing and thawing rate. Here we propose a composition of medium to sub-culture the frozen leptospires that play important role in the recovery of the leptospires. **Objective:** This study aimed to investigate the influence of three different composition of media on the recovery of leptospires after storage at low temperature.

**Methodology:** Eighteen leptospires serovars were cultured in EMJH medium containing *Leptospira* medium base EMJH, *Leptospira* enrichment EMJH, 5-fluorouracil, rabbit serum and calf serum. Upon reaching a satisfactory growth, the leptospires were aliquoted in 300ul in cryogenic tubes and then rapidly stored at -800°C freezer. Each month, the frozen leptospires were thawed and sub-cultured into three types of media, M1: similar to medium used to culture the leptospires, M2: EMJH medium without 5-fluorouracil, and M3: EMJH medium without 5-fluorouracil and with addition of sodium pyruvate. The cultures were observed for growth up to eight weeks.

**Results:** The monthly performance on the recovery of leptospires in the three media for five months were 94.4%, 94.4%, 88.9%, 83.3% & 66.7% (M1), 100%, 100%, 100%, 94.4% & 88.9% (M2) and 100%, 100%, 94.4%, 94.4% & 94.4% (M3).

**Discussion:** EMJH medium without the addition of 5-fluorouracil have a better recovery rate. It was also observed that the recovery could be serovars dependents as one serovar could not grew even in M2 and M3 on the fifth month of storage.

PP2-16
Effects of Re-decontamination of Samples in TB Culture.
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Ipoh Public Health Laboratory, Ministry of Health Malaysia, Jalan Jelapang, Ipoh, Perak.

**Introduction:** Laboratory diagnosis of tuberculosis involves primary sample decontamination procedure to eliminate contaminants such as bacteria and fungus. These contaminants potentially compromises the ability to detect *Mycobacterium tuberculosis*, which may affect patient management, as well as preventing the detection of multidrug resistant TB.

**Objective:** The aim of this study was to recover *M. tuberculosis* culture from contaminated primary samples.

**Methodology:** After initial decontamination, remaining of processed samples were kept in -800°C. Contamination of cultures within the first and second week of incubation were monitored to proceed with re-decontamination with same concentration of initial solution (4.5% Sodium hydroxide (NaOH)). The new cultures were then incubated at 35+20°C for up to 8 weeks.
**Results:** There were 760 of contaminated samples processed for re-decontamination in this study. About 9.73% (74) of the re-decontaminated samples were positive with acid-fast bacilli isolates. Further identification detected 40 (54%) *M. tuberculosis* complex from these positive isolates.

**Conclusion:** Re-decontamination helps detect more TB cases thus preventing spread of TB disease. However, different concentration of decontamination solution needs to be tested to increase chances of isolating AFB positive culture from contaminated samples.

**PP2-17**  
**Performance Evaluation of xMAP Salmonella Serotyping Assay Kit.**  
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**Introduction:** Serotype-specific *Salmonella* surveillance is essential in monitoring epidemiological distribution of *Salmonella* serotype across the world, as a tool to detect an outbreak and track them to their sources. Traditionally, *Salmonella* serotyping is performed using slide method which take days to complete.  
**Objective:** An alternative method combining PCR with multiplexed system was evaluated to determine its efficiency in producing faster result.  
**Methodology:** A total of 36 *Salmonella* species isolates including External Quality Assurance (EQA) samples from World Health Organization (WHO) were analyzed using xMAP *Salmonella* Serotyping Assay (SSA) Kit with Luminex 200 instrument. DNA samples were extracted using Biorad InstaGen Matrix. All strains were previously serotyped according to the modified Kauffman serotyping scheme with 10 complicated serotype due to extensive period needed to complete traditional serotyping. Both tests were carried out at Ipoh Public Health Laboratory (IPHL), as part of National Lab-Based Surveillance System for Infectious Diseases, Ministry of Health Malaysia.  
**Results:** xMAP SSA successfully serotyped 33 out of 36 samples (91.6%). Three (3) samples resulted in partial serotype.  
**Conclusion:** This assay is able to produce faster serotype identification and eliminate the need for phase conversion. It is useful as an alternative and faster way of determining serotype of *Salmonella* isolate.

**PP2-18**  
**Antifungal Potential of Senna alata, Ocimum basillicum, Ocimum sanctum and Quercus infectoria.**  
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**Introduction:** *Senna alata*, *Quercus infectoria* and *Ocimum sanctum* are shrub plants while *Ocimum basillicum* is commonly grown as culinary herb. Medicinal uses in folk medicine show that *S. alata*, *O. basillicum*, *O. sanctum* and *Q. infectoria* have been used for treatment of fungal infections.  
**Objective:** The Objective of this study was to determine the spectrum of antifungal activity of extracts of *S. alata*, *O. basillicum*, *O. sanctum* and *Q. infectoria* against fungi causing superficial and cutaneous skin infections and invasive infections.
Methodology: Dried leaves of *S. alata*, *O. basillicum*, *O. sanctum* and gall of *Q. infectoria* were extracted with methanol. The extracts were serially diluted in 100µl RPMI-1640 medium in wells of microtitre plate followed by incubation with 10^3 of spores or blastospores of the test fungi. The plates were incubated until fungal growth was observed or for the maximum of 4 days. The lowest concentration of the extract in the well that showed no growth of fungi was determined as the minimum inhibitory concentration (MIC, µg/ml).

Results: Except *O. sanctum*, other extracts inhibited agents of superficial mycosis (*Malassezia furfur*) at very low concentrations (63-250µg/ml). Extract of *Q. infectoria* inhibited growth of agents of cutaneous mycoses (*Microsporum canis*, *Trichophyton rubrum*, *T. mentagrophytes* and *T. tonsurans*) at low concentrations (63-125 µg/ml) followed by both species of Ocimum (8-500µg/ml). Extracts of *S. alata*, *O. basillicum* and *O. sanctum* did not inhibit growth of agents of systemic mycoses (*Candida albicans*, *C. parapsilosis* and *Trichosporon asahii*) at concentration below 1000µg/ml while *Q. infectoria* inhibited growth of all these fungi at low MIC (16-250µg/ml).

Discussion: Results of this study support the uses of these herbs in folk medicine as antifungal against cutaneous fungal infections and suggest that *Q. infectoria* should be explored further for a novel antifungal compound with broad-spectrum antifungal activity.

PP2-19
Antiviral Activity of Three Types of Bioflavonoids against Japanese Encephalitis Virus.

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Introduction: Japanese encephalitis, caused by the Japanese encephalitis virus (JEV), is one of the most important encephalitides in eastern and southeastern Asia. Since there is still a need to find effective antiviral against JEV, effort to find antivirals for it has focused on bioflavonoids, a plant-derived polyphenolic compounds with many potential health benefits.

Methodology: In the present study, antiviral activity of three types of bioflavonoid against JEV in Vero cells was evaluated. Anti-JEV activity of these compounds was determined at different stages of JEV infection and replication cycle. JEV replication was measured by Foci Forming Unit Reduction Assay (FFURA) and quantitative RT-PCR. Selectivity Index value (SI) was determined as the ratio of cytotoxic concentration 50 (CC50) to inhibitory concentration 50 (IC50) for each compound.

Results: Quercetagetin exhibited anti-adsorption effects against JEV with IC50 = 22.61 µg mL⁻¹ and its related SI was 34.06. The IC50 decreased to 18.14 µg mL⁻¹ when the cells were treated up to 4 days post-infection. The SI value for quercetagetin was 42.46. Silymarin showed a weak anti-adsorption effects against JEV but exhibited post-infection effects with IC50 = 44.46 µg mL⁻¹ and its related SI was 9.56. Baicalin only exhibited post-adsorption effects against JEV with IC50 = 31.10 µg mL⁻¹ and its
related SI was 9.35. The findings obtained from Foci Forming Unit Reduction Assay (FFURA) were corroborated by findings of the qRT-PCR assays.

**Discussion:** Considering the absence of antiviral treatment for the JEV, searching for effective antiviral compounds is crucial. Quercetagetin, silymarin and baicalin were evaluated as viable candidate compounds due to their broad spectrum anti-viral activity and low toxicity. These findings suggest that these compounds demonstrated anti-JEV inhibitory activities thus future studies are needed to evaluate them as a potential anti-JEV therapeutic.

**PP2-20**

**Perception on Antibiotic Usage and Antimicrobial Resistance among Residents in Kampung Ara Payung, Batu Gajah, Perak.**

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University Kuala Lumpur-Royal College Medicine Perak.

**Introduction:** The Ministry of Health Malaysia is regularly issuing antibiotic use guidelines and despite this, shortfalls in following these guidelines occur especially in hospitals. Furthermore, the high amount of pressure which, the patients, are putting on doctors nowadays, demanding for prescription of antibiotics, is aggravating the existing problem. Failure to finish the full prescribed therapeutic course of antibiotic is one crucial factor which causes unelimination of the bacteria and encourages the growth of resistant strains.

**Methodology:** A cross sectional study was done among villigers in Kampung Ara Payung to explore their perception on antibiotic consumption, accessibility, side effects, resistance and doctor-patient relationship. The total number of participants was 235 residing in 150 houses chosen randomly out of 450 houses. A minimum of 2 per household 18 years and above were chosen.

**Results:** A quarter of the respondents were between 18-29 years old. Malays comprised 64.3% while most of the participants had secondary and tertiary education. Less than one third, 27.7%, were professionals with most, 34%, were earning between RM1001- RM3000 monthly. Only 26% of participants have heard about antibiotic resistance. The study examined any possible association between the perception on antibiotic effects with other factors and race of participants was found to be significantly associated with the above mentioned variable (p value 0.046). Whereas three independent factors, age, race and income showed a significant association with perception on antibiotic resistance with p value being 0.024, 0.001 and 0.01 respectively.

**Conclusion and recommendation:** There was a noticeable poor perception on antibiotic resistance among villagers of Kampung Ara Payung, Batu Gajah, Perak. Interventions are needed through doctors and pharmacists to increase the level of awareness among the population in this area and maybe Malaysia.
PP2-21
University Kuala Lumpur-Royal College Medicine Perak.

Introduction: The incidence of dengue cases in Malaysia has risen to 100,000 reported new cases in 2016. In Perak, 998 cases were reported between January and first two weeks of February 2017.
Methodology: We did a cross sectional study among villigers in KRT Aulong Selatan, LMS, Taiping, Perak. The total number of participants was 260 who were residing in 157 houses (chosen randomly out of 417 houses). The study was conducted during the period 4th May – 7th May 2017.
Results: The three main Races in Malaysia were almost equally represented in this study. Most of the participants were having RM 1000 or less per month (58.1%) and almost half of the participants had an education up to the secondary level. When the participants were asked a general question "do you know what dengue is ", 93.8% of them said yes they already know. In regard to the 3 main variables in our study related to dengue, knowledge, attitude and practice, 78.1% of participants showed a good knowledge, 90% of them showed a good attitude and 71.2% of participants showed good practices. The race of the participants was significantly associated with the knowledge and the attitude on dengue, (P-value 0.02 and 0.04 respectively). Similarly, the level of education of participants was significantly associated with knowledge and attitude on dengue (P-value 0.00 and 0.04 respectively).
Conclusion and recommendation: Knowledge and attitude levels on dengue among participants were quite good. Relatively lower was the level of the practices. The Health department should focus more on increasing the level of good practices of villigers by introducing more intervention programs.

PP2-22
Catheter-Related Blood Stream Infection in Patients with Internal Jugular Catheter Admitted to a Tertiary Hospital in 2013.
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Introduction: In patients with end stage renal disease, dialysis is the preferred treatment tool in Malaysia. Not all patients enter haemodialysis (HD) with a native vascular access. Central venous catheters (CVCs) are used to commence and carry out HD in certain situations. There are multiple risk factors for catheter-related blood stream infection. The aim of this research is to study the risk factors for CVCs infection particularly of internal jugular catheter (IJC) and its consequences among the HD population in Hospital Raja Permaisuri Bainun Ipoh (HRPB).
Methods: This was a descriptive study on risk factors based on the hospital records among haemodialysis patients admitted for IJC infection between January 2013 and December 2013.
Results and Discussion: A total of 342 admissions with IJC for haemodialysis, twelve microorganism species were isolated (5 gram-positive microorganisms and 7 gram-negative). The most common microorganisms were Staphylococcus aureus (20.5%)
and Methicillin resistant S. aureus (MRSA) (13.4%). 17.1% died as a result of CRBSI. MRSA recorded the highest mortality rate (46.7%), which was followed by coagulase-negative staphylococci (MRCNS) (23.5%). The best explanation was that the source of infection was mostly originated from the skin flora of the patient.

**PP2-23**

**Osteo-articular Sporotrichosis Post Cat Scratch: A Malaysian Case Report.**

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**Introduction:** Sporotrichosis is a fungal infection caused by Sporothrix schenckii, a dimorphic fungus. Transmission of this infection is usually through contact with infected soil, decaying plants and zoonotic inoculation such as cat scratches.

**Case report:**
A 51-year-old lady with a past history of type 2 diabetes mellitus presented with bilateral painful ankle swelling for two weeks. This was preceded by a nodular ulceration in her right forearm following a cat scratch three weeks prior. The cutaneous lesion progressed despite surgical debridement and ciprofloxacin. The articular symptoms subsequently follow.

Clinically, she had evidence of bilateral ankle synovovitis. She also had a linear nodular cutaneous lymphangiitic tracking proximal to the inoculation ulcer which conforms to a classical ‘sporotrichoid’ pattern. Her laboratory blood tests and blood cultures for bacteria and fungus were negative.

She declined surgical excision of the cutaneous nodules for tissue diagnosis. Acknowledging this limitation and in view of the classical cutaneous lesions, she was commenced on itraconazole 200mg twice daily, empirically treating her for osteo-articular sporotrichosis. After four weeks of therapy, both her cutaneous and articular lesions resolved. She was continued on the itraconazole therapy to complete a 12-month course.

**Discussion:** Osteo-articular sporotrichosis can be regarded as uncommon. Although sporotrichosis has been reported in Malaysia, to our knowledge, this is the first case report of osteo-articular sporotrichosis from this country. In situations where tissue cultures are unavailable, clinical surrogates may be used to guide empirical therapy. Empirical anti-fungal therapy should be commenced as directed by clinical assessment. This aims to halt disease progression and prevent chronicity.

**PP2-24**

**Correlation of Diaphragmatic Thickness and its Amplitude on Pulmonary Parameters among Healthy Younger Adults.**

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**Introduction:** Diaphragm is the main respiratory muscle. It is a musculo-fibrous membrane that separates the thoracic and abdominal cavities. Ultrasound evaluation of the diaphragm is a simple, non-invasive technique used both in the clinical and
research setup. The main variables that can be assessed using this technique include the measurement of diaphragm thickness, the more dynamic evaluation of velocity of the diaphragm excursion.

**Objective:** Diaphragm has a major role in respiratory function. There are not much study on diaphragmatic thinness and velocity on pulmonary parameter such as functional vital capacity (FVC). This made us to conduct a study on relationship between diaphragmatic muscle thickness and amplitude on FVC.

**Methodology:** We obtained the quiet inspiratory and expiratory muscle thickness, amplitude of diaphragm muscle in quiet breathing using real time ultrasound and FVC using spirometry. 45 healthy students were selected for the study with prior ethical committee approval and study were conducted in Universiti Kuala Lumpur Royal College of Medicine Perak, Malaysia.

**Results and discussion:** Diaphragm excursion and muscle thickness of diaphragm showed a slight positive correlation towards the pulmonary function in the healthy younger adults. Ultrasound has emerged as a non-invasive technique that can be used in the structural and functional assessment of the diaphragm. In summary, ultrasonography and spirometry a technique used for the evaluation of the structure and dynamic function of the diaphragm as well as respiratory parameters. Based on the results of this study, the diaphragm excursion and diaphragm thickness at the FVC were positively correlated, to a mild significant.. These results suggest that if a younger adult wants to increase the FVC value their lung volume will vary based on the extent of diaphragmatic participation.

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**PP2-25**

**Transmission Tracking of ESBL Producing E. coli and K. pneumoniae in the ICU, HCTM via Molecular Characterization and GIS.**

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**Introduction:** ESBL producing E. coli and K. pneumoniae is an important pathogen associated with nosocomial pathogen. In this study, we tracked the transmission of ESBL in the intensive care unit (ICU) of our hospital via molecular characterization and GIS of strains isolated from affected patients, their surrounding environment and attending health care workers.

**Methodology:** The study was conducted in a 24-bed ICU of HCTM from February to December 2013. ESBL producing E. coli and K. pneumoniae isolates from ICU patients hospitalized during the period we retrieved and purified as strains. The surrounding environment of ESBL producing-organisms- positive patients (bed-linen, ventilator, bed side rail and floor) and their attending health care workers were also swabbed to detect ESBL- producing E. coli and K. pneumoniae. Isolates were confirmed via Mac Conkey 4G agar screening and combination dic diffusion test. Detection of *bla* (CTX-M, SHV and TEM) gene and REP genotyping were performed for all strains, GIS was employed to identify ESBL producing organism transmission in the ICU, whereby assessment of strain relatedness with integration of bacterial molecular and patient spatial data enabled identification of ESBL producing E.coli and K. pneumoniae.
**Results:** Eighty two ESBL-producing *E.coli* and *K. pneumoniae* was isolated from the ICU during the study duration. 70 strains were from patients while 22 strains were isolated from 21 patients. Interestingly, no strains were isolated from the attending health care worker. In this study, GIS analysis revealed positive ESBL patient environment transmission events occurred in 4 patients.

**Discussion:** Three strain patient-environment transmission events were identified in this study. Molecular characterization and GIS analyses proved useful in ESBL-producing *E. coli* and *K. pneumoniae* transmission tracking.

**PP2-26**

**Synergetic Antibacterial Activity of Mangiferin with Antibiotics against *Staphylococcus aureus*.**

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**Introduction:** Multidrug-resistance bacteria have hastily emerged throughout the world and responsible for causing serious nosocomial and community-acquired infections. Therefore there is an urgent necessity to formulate the alternative therapeutic agents to mitigate the emergence of antibiotic resistance.

**Objective:** The present study was aimed to evaluate the synergistic effect of mangiferin with antibiotics against *Staphylococcus aureus*.

**Methodology:** Mangiferin was isolated from Mangifera indica and tested for its synergetic activity with eight standard antibiotics against *Staphylococcus aureus* using disc diffusion method. The results showed that 4 mg/disc of mangiferin exerted synergistic antibacterial effect on *Staphylococcus aureus* when used in combination with four antibiotics.

**Results:** Combination with Nalidixic acid, Ampicillin, Tetracycline and SXT/TMS resulted in fold increase in area 69.00%, 21.37%, 16.16% and 4.16%, respectively. At the same time, there is no synergetic antibacterial effect was observed with other tested antibiotics against *Staphylococcus aureus*.

**Discussion:** The mangiferin may have acted on the target or pathway related to the development of drug resistance, hence restoring the killing effect of the drugs. This may be one of the mechanisms on how mangiferin enhances the effect of antibacterial drugs, especially when they are targeting *Staphylococcus aureus* infected human cells. The results demonstrated that mangiferin is a safe natural product could also serve as valuable probes to study the structure-activity relationships of the antibiotic resistance reversal agents. Therefore, mangiferin and its derivative compounds may have a good potential for combination therapy against *Staphylococcus aureus*. 
PP2-27
Methicillin - Resistant *Staphylococcus aureus* (MRSA) Positivity on Mobile Phones of Healthcare Workers - A Systematic Review of Observational Studies. **Sandheep S**.
Faculty of Medicine, Universiti Kuala Lumpur RCMP.

**Introduction:** Despite improvements in modern diagnosis and therapies, hospital acquired infections remain a leading problem of global health systems. Mobile phones of healthcare workers are now regarded as an important reservoir for nosocomial pathogens. Despite the high possibility of being contaminated, mobile phones are rarely cleaned and are often touched during or after examination of patients and handling specimens by healthcare personnel without proper hand washing.

**Objectives:** The aim of this study is to systematically review published observational studies on microbial contamination and MRSA positivity on mobile phones of healthcare workers and their contributing factors.

**Methods:** A literature search using Science Direct, Scopus, Clinical Key and Google Scholar databases was performed. Studies were critically appraised and selected according to the STROBE checklist. Overall positivity of bacterial isolates and positivity of MRSA on mobile phones of healthcare workers were determined. Subgroup analyses were performed to determine the correlation between influencing factors and the positivity of bacterial isolates and positivity of MRSA isolates.

**Results:** 15 studies were included in our systematic review. Overall, there was a 81.0% (95% CI: 79.07 - 82.75) positivity of bacterial isolates and 16.03% (95% CI: 14.4, 18.3) MRSA positivity among those bacterial isolates.

**Conclusions:** Usage of mobile phones in a hospital setting serves as a potential vehicle for the spread of nosocomial pathogens including multi-drug resistant pathogens like MRSA. Lower income countries, small sample sizes, and being in African continent were the risk factor for positive bacterial and MRSA isolates. Being in tertiary hospitals and studies conducted before 2010 were influencing factors for positive isolates while teaching hospitals and studies conducted after 2010 were related to MRSA positivity on mobile phones.

PP2-28
The Association between Breastfeeding and Neonatal Jaundice in Ipoh: A Cohort Study. **Pek, Y.S.** & Sugathan, S.
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**Introduction:** Prior studies reported 50 - 60 % of newborns were affected with jaundice in the first week of life. Timing of discharge of babies from hospital care to primary care within 24 hours of birth, poses a lot of challenges (Mugadza, et al., 2017). There are limited number of studies done locally on the association of breastfeeding and neonatal jaundice.

**Objectives:** The aim of this study is to determine the association between breastfeeding, cumulative incidence of neonatal jaundice and the risk factors of neonatal jaundice in Ipoh during the first week of life.

**Methodology:** A cohort study was carried out in 9 health clinics in Ipoh. The exposed group were newborns given exclusive breastfeeding (n = 70) while the unexposed group were babies on mixed feeding (n = 70). Data collected through review of health
record and self-administered questionnaire. Analysis done using SPSS version 22.0.

**Results:** The cumulative incidence of moderate to severe jaundice exposed and unexposed group were 61.4% and 54.3% respectively. The relative risk (RR) was 1.13 (95% CI: 0.85, 1.50) in the exposed group; was not statistically significant. Early initiation of breastfeeding within one hour of delivery (RR: 0.57, 95% CI: 0.37, 0.88) was a protective factor while consuming herbs (RR: 1.78; 95% CI: 1.33, 2.35) was a significant risk factor for moderate to severe jaundice in the exposed group. Frequency of breastfeeding ≥ 8 times a day was a statistically significant protective factor among the unexposed group.

**Conclusion:** There was no positive association between exclusive breastfeeding and moderate to severe neonatal jaundice. Early initiation of breastfeeding within one hour of delivery and frequency of breastfeeding ≥ 8 times a day were found to be significant protective factors.

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**PP2-29**

**Human Papillomavirus Infection and its Vaccines: Knowledge and Attitudes of Nursing Student at UniKL RCMP.**

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**Introduction:** Cervical cancer is still the leading cause of cancer death among women, secondary to breast cancer. Moreover, the infection with HPV has been causally linked to disease. A school based HPV vaccination program was introduced in late 2010 in Malaysia and nurse support is essential for its success. Malaysian studies on nurses at Kelantan region have shown the misunderstanding in their critical knowledge and significant deficits of knowledge among multiple levels of nurses. The fundamental core knowledge HPV vaccinations among nurses are from the educational institutes or Universities, hence we have to examine the educational curriculums studied by Nurses in Malaysia.

**Objectives:** To understand the level of HPV vaccination knowledge and awareness among year 1 and year 3, nursing students from the Diploma program level.

**Methodology:** This cross-sectional study was conducted among nursing students of UniKL RCMP, Ipoh at year-1 and year 3. Its involved 152 nurses selected through year 1 and 68 nursing students for year 3. A validated self-administered questionnaire consisting of 4 sections for the knowledge domain and attitude domain was used. Results: The response rate of the study was 100%. The mean knowledge source for HPV vaccine information is 61.5% for internet users. While, for the question asked on “only female get HPV infections were 82.6% for true and 17.4% for false. Meanwhile, 79.8% of total nursing students have obtained all three doses of HPV and 19.7% of students did not receive any doses. From independent T-test analysis, among the factors tested, year 1 and year 3 students showed a statistically significant association with the HPV knowledge questions (p <0.05).

**Conclusion:** This study indicates nursing students for year 1 and year 3 have different understandings towards HPV vaccinations. Both have significant knowledge deficit and major misunderstanding in critical knowledge items.
Investigating Potential Zoonosis of Clostridium difficile through Molecular Characterization of Pig Isolates in Malaysia.

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Introduction: *Clostridium difficile* (CD), which was once believed to be a commensal organism, is now an important enteric pathogen that dominates the gut. It secretes large clostridial toxins TcdA and TcdB and sometimes a binary toxin (ADP-ribosyltransferase), when there is an alteration in the normal flora due to antimicrobials exposure or diet, resulting in infectious diarrhea and fatal gut disease pseudomembrane colitis. Pigs are common reservoirs for CD and are very commonly reported in neonatal pigs. Animal strains of CD are now infecting human and therefore confirms that human CD is a potential zoonosis.

Objective: This study aimed to investigate the prevalence of *C. difficile* in pig farms in Malaysia to curb the interspecies transmission

Methodology: Rectal swab samples (10 from each farm) were collected over a span of 1 year. There were 6 different sampling at different pig farms from 2 different states; Selangor (4 farms) and Perak (2 farms). The samples were cultured on selective media CD chromID agar and were incubated for 48 h anaerobically. The *C. difficile* isolates were screened for genes associated with toxin production using PCR to detect to identify the pathogenic strains.

Results: Approximately 41 rectal swabs were positive for *C. difficile* with a prevalence of 68%. All the *C. difficile* isolates from Selangor were genotypically similar to the isolates from Perak and was identified as non-pathogenic strain toxin.

Discussion: The high prevalence of the non-pathogenic strain in Malaysian pig farms, could be the reason why severe human CD incidence data are limited in Malaysia. Though the strains are incapable of causing severe CD infections, it could colonise the gut when there is disruption of normal gut flora due to overuse of antimicrobials.