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TRANSLATING HEALTH POLICIES INTO EFFECTIVE ACTION**

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Mohamad Fuad Mohamad Anuar, LeeAnn Tan, Shubash Shander Ganapathy, Chandrika Jeevananthan, Fazila Haryati Ahmad, Nazirah Alias, Mohd Azahadi Omar

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SPATIAL TEMPORAL DIFFUSION OF URBAN TYPHOID IN KLANG VALLEY: AN OBSERVATIONAL STUDY BETWEEN 2011 TO 2015.
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EPP032 #172 **DO KNOWLEDGE, ATTITUDE AND LIFESTYLES REALLY CONTRIBUTES TO CENTRAL OBESITY? A SURVEY IN AN URBAN LOCALITY IN MALAYSIA.**
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EPP043 #209 DIABETIC COMPLICATIONS AND ITS ASSOCIATED FACTORS IN NEWLY DIAGNOSED TYPE 2 DIABETES MELLITUS PATIENTS: A RETROSPECTIVE COHORT STUDY AT A TEACHING HOSPITAL IN NIGERIA
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EPP049 #232 HERPES SIMPLEX TYPE-1 OUTBREAK IN A RURAL PRIMARY SCHOOL, MELAKA 2017
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FHPP002 #10 UNPLANNED PREGNANCY AND ITS ASSOCIATED FACTORS
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FHPP003 #22 CHILDHOOD UNDERNUTRITION IN MALAYSIA AND ITS ASSOCIATED FACTORS: WHAT'S THE NEXT STEP?
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FHPP004 #24 ILLICIT DRUG USE AMONG MALAYSIAN ADOLESCENTS: A FIVE YEARS TREND
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FHPP005 #25	PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOUR AMONG MALAYSIAN ADOLESCENTS: FINDINGS FROM ADOLESCENT NUTRITION SURVEY 2017 <i>Nor Azian MZ, Ruhaya S, Hazizi AS and Azahadi O</i>
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PLENARY 1: Building Human Resource Capacity on Health Policy

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The Malaysian government constantly invests significant efforts in improving and developing its health care system. Malaysia continuously strives towards achieving universal health coverage attained within a sustainable healthcare system through its dichotomous yet synergistic public-private healthcare system. This effort requires among others a set of robust yet dynamic health policies. The robust dynamics terminology coined by Hexiang Deng et al. (2010) aptly describes the policies in health system whereby each new and reviewed policies to suit healthcare needs will not affect the integrity of any other policies linked to it. In other words, all health policies should be synergistically working towards the ultimate health goal which is the wellbeing of a nation. To develop a robust dynamic local health policy which weaves seamlessly with international health policies the policy makers need well-honed skills in various subjects. These skills are essential in various phases of the policy such as development, implementation, monitoring and evaluation of policy. The policy cycle offers a useful way to identify necessary skills that health managers and policy makers should have. Each step of a policy cycle - problem definition, diagnosing the cause(s), policy development, political decision, implementation and evaluation requires related and relevant education and training as part of human resource empowerment. The most fundamental aspect of training is to gain sound knowledge on health system and health service delivery which will be more comprehensive if it is complemented and is based on the clinical and public health knowledge. The analytical ability of sorting through and prioritizing qualitative as well as quantitative data gathered through process of data collection and stakeholder engagement allows health managers and policy makers to focus on action plan. As stakeholder engagement is widely commended as an important methodology for health policy decision making, having effective communication and soft skills are among the desirable skills in dealing with stakeholders and political masters from various levels and backgrounds.

PLENARY 2: Enhancing Translational Research in Public Health

Maznah Dahlui

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Applied research is any research that may possibly be useful for enhancing health or well-being. It does not necessarily have to have any effort connected with it to take the research to a practical level. However, translational research is a systematic effort to convert basic research knowledge into practical applications to enhance human health and well-being. It was initially designed for the medical world but is currently also practiced in fields such as environmental and agricultural science, as well as the health, behavioral, and social sciences. Translational researches include some “action steps” whereby the researchers would partner with a community and ask for ideas about how their findings might be applied to the local needs. Together,

they would come up with an intervention plan that would also include scientific evaluation of its effectiveness. Several examples on publications and studies on translational research will be shared in the presentation.

Keywords: decision, smoking, young age

PLENARY 3: Managing Health Economic Evidence for Health Policy

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Health economics is the application of economics theories, concepts and techniques in the management of health system. While the existence of health systems can be traced back to 500BC, economic discipline only came to birth in the 18th century when Adam Smith wrote the book on “Wealth of Nations”. Smith, the “Father of Mother Economics” introduced the “theory of invisible hands” in 1776 that remains relevant to health care market until today. The real applications of economics in health care happened in 1977 with the launching of Primary Health Care concept when cost of health services is used as one of the indicators in defining essential health services. Presently, due to the lack of health resources and regressing roles of the states as the main health provider, health economic tools were increasingly used as a tool to ration health services. Health economic evidence to support policy decision may be derived from economic evaluations studies such as cost-analysis, cost-effective analysis and cost-benefit analysis. The implementation of health financing schemes to support the achievement of Universal Health Coverage in developed and developing countries further underscore the need of health economics data. Policy makers require health economic evidence in deciding the most efficient preventive and curative interventions to be funded by scarce resources. In Malaysia, the use of health economic data to support decision making in public health can be seen in the justification to introduce HiB Immunization, change from oral to injectable polio vaccine, HPV vaccination and raised in tobacco taxation. Recently, budget impact analysis is becoming more popular especially in introducing new drugs in the national formularies. Lack of technical capacity among the researchers and policy makers in health economic discipline limits the application of health economic evidence for effective policy making in health system.

PLENARY 4: Effective Public Health Actions - What Are They?

Azman Abu Bakar

Public Health Program, Ministry of Health Malaysia

Public Health Medicine is a branch of medical practice which is primarily concerned with the health and care of the population at large. It is concerned with the promotion of health and the prevention of disease and illness, the assessment of a community's health needs and the provision of services to communities in general and to specific groups within them. Health policy embraces courses of action that

affect a set of institutions, organizations, services and funding arrangement of the health system. We initiate public health actions that intend to improve the health of the society through coordinated Public Health Programs. In order to be effective, actions must be planned with a solid foundation on evidence based public health medicine, intervened with technical packages of high-priority evidence based interventions with major impact, supported by sustainable performance monitoring, coalition between public and private sector, accurate communication and timely information, and last but not least, the undivided political will and commitment. At the end of any public health actions execution, we must link this back to its objectives and ask ourselves if the primary have been accomplished? Performance and quality analysis needs to be done in assessing whether if it is beneficial, time and cost-saving and brings utmost optimisation of human resource.

SYMPOSIUM 1: EVIDENCE-BASED CONTROL OF INFECTIOUS DISEASES

S.1.1: Surveillance for Action: Have We Done Enough?

Wan Noraini Wan Mohamed Noor

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Public health surveillance systems generate information that drives action. Major milestones in the historical development of concepts in public health surveillance dates back to Hippocrates and the initial focus were on infectious diseases. Similarly in Malaysia, the Infectious Disease Surveillance Section was established in 2001 following the novel Nipah virus encephalitis outbreak. To answer the intriguing question whether we have done enough in fulfilling the purpose of surveillance for action, discussions were made within the perspective of surveillance evaluation and assessment. Surveillance evaluation aims to determine as systematically and objectively as possible the relevance, effectiveness and impact of this activity with respect to their objectives. This is typically driven by the assessment of specific attributes and these attributes are related to one another. Hence, when the evaluation assessed only selected attributes, key insights into surveillance system process and information will be missed. The Joint External Evaluation which was initiated through the platform of the International Health Regulations (2005), provide an alternative for assessing public health surveillance in addition to the other 18 technical areas. Malaysia is scheduled to undergo this assessment soon and this will definitely provide the anticipated answer for the question, “Surveillance for Action: Have We Done Enough?”.

Keywords: Surveillance, evaluation, assessment

S.1.2: Prioritizing Communicable Diseases - Are We Doing It Right?

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The threats of communicable diseases remain as a public health importance even though the non-communicable diseases threats have supersede in many countries in the world. This is because these diseases are now spreading geographically much faster than at any time in history as a result of the highly mobile, interdependent, and interconnected society. In Malaysia prioritizing communicable diseases control and prevention are seen as important as its counterpart. Microbiologists, infectious disease physician and public health expert may have different opinion on which disease should be prioritised. Not all diseases listed in our notifiable diseases list should be given priority. Methods and criteria in prioritising the communicable diseases may vary. It is quite a challenging task to determine which diseases we should prioritize, and it is a dynamic process based on evidence. Burden of disease including incidence, severity, mortality; epidemiologic dynamic including outbreak potential, trend, emerging potential; information need including evidence on risk factors/groups, validity of epidemiologic information, evidence for pathogenesis; international duties and public attention; health gain opportunity including preventability, treatability may be used as prioritization criteria. This symposium lecture will discuss the challenges in communicable diseases prioritization and whether Malaysia has done it right.

Keywords: communicable disease, prioritizing, methods

SYMPOSIUM 2: EMERGING RISK OF OCCUPATIONAL HEALTH

S.2.1: Systematic Occupational Health Enhancement Level Programme (SoHELP) - Towards Achieving OSH Master Plan 2020 by Controlling the Risk at The Workplace

Ahmad Fitri Abdullah Hair

Occupational Health Division, Dept. of Occupational Safety and Health, Ministry of Human Resource

Systematic Occupational Enhancement Level Programme (SoHELP) is a systematic intervention programme which focus to help industries in Malaysia to enhance industrial hygiene and occupational health standard in the workplaces and to meet the regulatory requirements on industrial hygiene related regulations. The development of this programme are based on the increasing trend on reported occupational diseases in Malaysia and relatively low compliance to industrial hygiene related regulations which industrial hygiene related regulations seems as difficult and costly to comply compare to industrial safety regulations. The basis of the programme are focusing on three (3) main occupational hazards which are mainly due to exposure to excessive noise, chemical and ergonomic risk factors at the workplace. The participation of the industries into this programme are voluntarily and they should have safety and health officer as person in charge to coordinate the

programme at their workplace. The department has developed the module based on this three (3) main occupational hazard which the industries need to comply and implemented at their workplace with given time of 14 months from 1st April 2016 until 31st May 2017. The programme have been successfully being implemented to 214 workplaces which involved 261 Occupational Safety and Health (OSH) Practitioners and 139,855 workers in Malaysia. The overall achievement and compliance based on implementation of the programme are 3.9/5.0 (78%). This programme has been included in the Occupational Safety and Health Master Plan 2016-2020 (OSH-MP 2020) for Malaysia and been part of national platform for strategic and synergistic cooperation between government, employers, OSH practitioners, and employees to enhance industrial hygiene and health standard in the workplaces and as part of preventive tools to reduce the numbers of occupational diseases at the workplace.

S.2.2: Work-related Stress - The Neglected Occupational Disease.

Priya a/p Ragunath

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Stress has been viewed as part of the working environment and has not been considered as an occupational disease per say. While it is not denied that 'eustress' is important as a driving and motivational factor, however there is a thin line between when it remains a motivation and when it amount to 'distress'. Approximately 4.2 million Malaysians suffer from various mental health issues. Stress is the second most frequently reported work-related health problem, affecting 22% of workers from the EU where the largest group of employees who suffered from anxiety at work were those employed in education and health, public administration and defense and in agriculture, hunting, forestry & fishing. KOSPEN PLUS which is an overall wellness program for the workplace is a Ministry of Health, Malaysia initiative which is attempting to reduce the occurrence of non-communicable diseases at the workplace. Managing stress at the workplace is one of the component programs of KOSPEN PLUS which is offered to the workplaces. The mental health program offered is tailor made to the needs of the organization beginning with simple screening at the workplace followed by preventive measures and case management. All working organizations have a responsibility to identify stress at the workplace and initiate stress management programs for their employees. The commitment given to carrying this out will result in a more effective and productive workforce.

S.2.3: The Feasibility of Extending KOSPEN Plus to The Industries: Challenges in its implementation

Mohd Supian bin Hassan

Quality and Safety Department, Pharmaniaga Logistics Sdn Bhd

The rapid increase of Non-Communicable Diseases (NCD) cases becomes one of the biggest challenges to the current healthcare system in Malaysia. The emergence of

NCD's has leading of death cases globally, including in Malaysia. The National Health and Morbidity Survey (NHMS) in 2015 showed that the prevalence of NCD risk factors continues to rise with an estimation of 3.5 million adult Malaysians living with diabetes, 6.1 million with hypertension, 9.6 million with hypercholesterolemia and 3.3 million with obesity. The emergence of the pandemic was due to many causes includes socio-economics. Life style change, tobacco use, harmful alcohol use and etc. The KOSPEN program has been initiated in 2013 towards reducing the NCD cases in Malaysia. The program expanded to the industries in 2016 known as KOSPEN Plus and the launching of the program has given an opportunity for organizations in the private sector to participate in practicing healthy life style in their organization. There are 8 scopes introduced in the program i.e. 1. Healthy Eating, 2. Smoke Free Workplace, 3. Active Living, 4. Weight Management Program, 5. Health Screening, 6. Healthy Mind, 7. Healthy Work Environment, and 8. Prevention of Alcohol Morbidity (CEKAL). However, organizations were given an option at their own pace to kick start with the selected scope of their workplace. Participated organizations have started their own initiatives with support from Kementerian Kesihatan Malaysia but it is too early to determine the success of the initiatives for the implementation requires a long process of creating awareness till developing culture of healthy life style within the organization. The feasibility of the success depends on many factors, including internal and external issues. Matters such as budget, availability of time, involvement, participation, facilities for the program are always raised. Hence the organization must creatively manage availability of resources, related situation in the working environment to be considered as an opportunity, while top management has to consistently supports the program. 'Push and Pull' factors should be a concurrent approach to reflect on the immediate and long-term effects of the program.

Keywords: KOSPEN Plus, healthy lifestyle, feasibility, creatively, support

SYMPOSIUM 3: ADOLESCENT HEALTH

S.3.1: Methodology of Adolescents Health Survey 2017

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Health risk behaviours among adolescents are associated with morbidity and mortality in which regular monitoring is becoming a priority in adolescent health. Evidences showed risky-behaviours activity during adolescence, may affect their future adulthood health status. Hence, the Adolescent Health Survey was conducted as a cross-sectional study to represent school-going adolescents aged 13 to 17 years old in Malaysia. Data collection was done using a self-administered questionnaire with a computer-scanned answer sheet. The set of questionnaires that were compiled consisted of 12 scopes, covering all aspects of risk and protective factors among adolescents. The sample size was calculated based on the requirement for each scope. A two-stage stratified cluster sampling design was used and sample weight was calculated to ensure national representativeness. A total of 212 secondary schools were selected to participate in this study. Of the 30,823 students

eligible for this study, 27,497 students completed the questionnaires with a response rate of 89.2 percent. The methodology is crucial for any successful survey. Hence, a robust methodology was utilized in implementing this survey to ensure the representativeness of the study and reliable findings for policy makers.

Keywords: adolescent health, school-based, Malaysia

S.3.2: Adolescents: Tobacco, Drugs & Alcohol

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The National Health and Morbidity Survey (NHMS) was conducted in 2012 and 2017 with the aim of assessing the prevalence of health risk behaviours and protective factors amongst Malaysian adolescents. The study consisted of several modules, including the tobacco, drugs and alcohol modules. According to the NHMS findings, the use of tobacco and alcohol had become increasingly popular among Malaysian adolescents as seen in the increased prevalence of current cigarette use from 11.5% in 2012 (NHMS 2012) to 13.8% in 2017 (NHMS 2017), while the prevalence of current alcohol use increased from 8.9% (NHMS 2012) to 10.2% (NHMS 2017). Similarly, there was an upward trend in illicit drug use; prevalence of 1.5% in 2012 (NHMS 2012) to 3.4% in 2017 (NHMS 2017). Smoking, drinking and illicit drug use can pose a serious impact not only on individuals, but on family and the society as a whole. Moreover, these habits have been linked to various health and social problems particularly among adolescents. Prevention programmes and interventions addressing the use of tobacco, illicit drugs and alcohol should be tailored to adolescents. Apart from that, health education in schools should be designed to increase adolescents' knowledge and awareness about the danger of tobacco, illicit drugs and alcohol abuse. More importantly, parents should serve as healthy role models and set positive examples for their children as a measure to prevent smoking, illicit drug use and alcohol consumption among adolescents.

S.3.3: Mental Health Status of Malaysian Adolescents: National Health & Morbidity Survey 2017

Mohamad Aznuddin Abd Razak

Institute for Public Health, Ministry of Health, Malaysia

Good mental health status is vital for our future generation. However, adolescents today face various mental health problems which may lead to suicidal behaviours. The study aims to identify mental health status of Malaysia's adolescents and its sociodemographic factors. Data was obtained from National Health and Morbidity Survey (NHMS) 2017. A total of 27,497 randomly selected school-going adolescents completed the survey. Tools used were Depression, Anxiety & Stress Score (DASS-21) and WHO questionnaire regarding mental health. Data was analysed using descriptive statistic in SPSS version 20. School-going adolescents were reported as depressed (18.3%), anxious (39.7%) and stressed (9.6%). About 10.0% adolescent had

suicidal ideation, 7.3% planned to commit suicide and 6.9% had attempted suicide in past 12 months. Malaysian adolescents also reported had addiction to internet by 29.0%. Selangor reported highest prevalence of depression, stress and suicidal plan. Most of the mental health problems were higher among girls, Indian, those reside at urban area and among those in Form One. Malaysian adolescents' mental health problems were becoming more serious and increased within the last five years. Mental health intervention programs should be strengthened especially at schools to help adolescents to effectively cope with the problem and overcome it.

Keywords: Mental Health, Adolescent, National Health & Morbidity Survey

S.3.4: Violence Among Malaysian Adolescents: How Big Is the Problem?

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Interpersonal violence acts such as physical fighting, bullying, abuse at home among Malaysian adolescents have significant impact on their physical and mental health and on shaping the adolescence transition process to adulthood role. The objectives of this study were to describe the prevalence of physical fighting, bullying victimisation and abuse at home among Malaysian adolescents. Data was utilized from Adolescent Health Survey 2017; a nationwide survey using two stage, cluster random sampling design during the school and class selection. Interpersonal violence acts were collected via an internationally comparable, validated anonymous self-administered questionnaires among consented students. Data was analysed using IBM SPSS Statistics for Windows Version 21.0, taking into consideration of complex sampling design to generate the prevalence estimates. The overall response rate was 89.2 % and 27,497 school-going adolescents; nearly equal proportion by gender completed the questionnaires. In terms of ethnicity, 68.1%; 14.9%; 5.2%; 6.5%; 3.3% and 2.0% were Malays, Chinese, Indians, Bumiputera Sabah, Bumiputera Sarawak and Others respectively. The overall prevalence of physical fighting, ever been bullied, ever been physically abused and verbally abuse at home was 24.9% (95% CI: 23.50, 26.21), 16.2% (95%CI: 15.28, 17.14), 11.8% (95% CI: 10.90, 12.83) and 43.2% (95%CI: 41.85, 44.60) respectively. In terms of gender, boys were significantly having higher prevalence of physical fighting and ever been bullied compared to girls while girls reported having higher prevalence of verbal abuse at home compared to boys. There was no gender difference with regards to physically abuse at home. Indian ethnicity was observed as having the highest prevalence of physical fighting, ever been bullied and ever been physically abused at home while Bumiputera Sabah reported having the highest prevalence of verbally abuse at home. The prevalence of physical fighting, ever been bullied, ever been physically abused was highest in Form 1 students (adolescent at 13 years old) and the prevalence decreases in older age. However, the prevalence of verbally abuse at home was observed nearly similar in each age group. Interpersonal violence acts in Malaysian adolescent are of significant public health concerns in which certain age group and ethnicity have shown a greater concern. Early school and family interventions would be beneficial for those adolescence wellbeing as well as the future generation.

Keywords: Adolescent, violence, Malaysia, school-going age

SYMPOSIUM 4: MARKETING AND SUSTAINING HEALTHY BEHAVIOUR FOR NON COMMUNICABLE DISEASE (NCD) CONTROL

S.4.1: The NCDs Pandemic - What Do We Have to Combat Them?

Feisul Idzwan Mustapha and Noraryana Hassan

Disease Control Division, Ministry of Health Malaysia Putrajaya

The burden on NCDs continues to increase in Malaysia. Data from the National Health and Morbidity Surveys (NHMS) from 1986 till the latest 2015, as well as the Burden of Disease Studies most recently published in 2017 showed an overall increasing trend for NCDs and NCD risk factors in Malaysia. NCDs in fact are one of the major health challenges faced by the country. Malaysia is not unique in this sense. Across the globe, the burden of NCDs is highest and increasing rapidly in developing countries. Even the least developed countries are seeing an increasing trend. There is a strong link between NCDs and the Social Determinants of Health (SDH), and the link between NCDs and development was highlighted under the United Nation's Sustainable Development Goal (SDGs). From early 1990s, substantial efforts have been made by the Ministry of Health to increase the awareness and knowledge of the Malaysian population on health-related behaviours to reduce the risk of NCDs. Various health campaigns, for example, on healthy eating, active living and stop smoking have been conducted. Therefore, should the government launch another campaign to encourage people to make healthier lifestyle choices? Do our population still lack the required knowledge and skills to make healthier choices in life? The National Strategic Plan for Non-Communicable Diseases (NSP-NCD) 2016-2025 argues that merely increasing knowledge, awareness and skills will not change behaviour. The Strategic Plan advocates a more aggressive approach that combines soft and hard policies. An effective response requires that individuals and societies must take on more responsibility for their own health. At the same time, the government must take strong action to reduce the exposure of its population to NCD risk factors through hard policies. This requires a whole-of-government approach and not just be the responsibility of the Ministry of Health. There are two elements that are crucial in creating a health-promoting living environment - strong political will and a healthcare sector that champions hard policies for the country.

S.4.2: Towards Push, Demand and Request for Health

Yahya Baba

Chairman of Astin College

This paper contains a discussion on demand for health influences consumer behavior. Discussion is also based on health as output and medical care as one of many inputs. Factors influencing demand or request for health care are individual factors (age, sex, education etc.), environmental factors (physical, social etc.), health care resources factors (supply, access, acceptability) and prepayment factors (insurance, out of pockets payments). It is important to note that under those conditions, an increase in price may reduce the quality of health demanded and increases the

quantities of health inputs demanded. It is recognized that prevention is one of the few known ways to reduce demand for health and aged care services.

Keywords: demand, health, medical care and price.

S.4.3: Applying Neurolinguistic Programming (NLP) To Sustain Healthy Behaviour For Our Community

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Smart Excel Consultant Hypnotherapy Center Malaysia

Changes in the social landscape today has greatly contributed to the overall increase in health problems and psychological disorders such as marriage issues, families, work stress, alcoholism, drug abuse and others. This condition can lead to depression, anxiety, stress and various psychological disorders that impact the quality of life and well-being of Malaysians holistically. The 3rd National Health and Morbidity Survey in 2006 indicated that as many as 3 million out of 26 million Malaysians suffer from mental health problems. Kosmo newspaper dated 17.04.2018, reported that 11 million Malaysians suffer from insomnia. Stress and depression was known as the main contributor to the symptoms of insomnia among Malaysians. The question is, what approach to be taken by Malaysian for the sake of the welfare, emotions, thoughts and behaviours? Is there a psychological approach that can be used by Malaysians to maintain healthy behaviour (emotional and mental)? We are going to introduce Neuro Linguistic Programming (NLP) as an approach to sustain healthy behaviour.

Keywords: psychological approach, healthy behaviour, Neurolinguistic Programming (NLP)

SYMPOSIUM 5: HEALTH FOR ENVIRONMENT AND ENVIRONMENT FOR HEALTH

S.5.1: Integrating Health in Planned Urbanization

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PLAN Malaysia, Department of Town and Country Planning

In 2015, Malaysia was 74.3% urbanized with almost 22.6 million population resided in urban areas. The number is expected to increase to 79.6% in 2025 and will be capped at not exceeding 85% in 2040 (with the total population estimated at 46.1 million), towards a resilient and liveable nation. Managing urbanization is a tricky business. A city as an engine of growth is the area with the highest concentration of economic development (in the case of Malaysia, 75% of our national GDP is concentrated in urban areas), but at the same time, the development of infrastructure, utilities and public facilities should also be in line or at par with the economic development. Our cities should be able to provide for adequate and safe living quarters, sufficient recreational facilities, efficient water, electricity and

telecommunication, and a comprehensive and reliable public transportation. This is in line with the 2030 Agenda for Sustainable Development, especially the SDG11 of *making cities and human settlements inclusive, safe, resilient and sustainable* and conforms to the New Urban Agenda (NUA). However, rapid urbanization is often associated with urban issues such as lack of affordable housing, overcrowding, unemployment, development of slums, water and sanitation problems, poor health and spread of diseases, traffic congestion and urban crimes. To overcome the issues, every aspect of planned urbanization including health has been taken into consideration through the implementation of the National Physical Plan (NPP) and the National Urbanization Policy (NUP), which will be further discussed through this paper.

Keywords: urbanization, resilient and liveable nation, sustainable development, urban issues, integrating health

S.5.2: Emerging Concern in Environmental Health: The Consequences of Gestational Exposure to Environmental Hazards

Norlen Mohamed

Environmental Health Unit, Disease Control Division, Ministry of Health Malaysia

Non-Communicable Diseases (NCDs) have increased considerably during the last decades and have become the leading causes of death worldwide. Traditional approaches of NCDs prevention targeting adult population most at risk will no longer adequate to ameliorate this growing burden. New evidences have strongly suggested that the origin of NCDs start early in life that involves epigenetic alteration occur during developmental process as possible mediators of long-term health effects. In line with the Developmental Origins of Health and Disease (DOHaD) theory, it is crucial to avoid exposure to environmental chemicals during pregnancy and postnatal development not only to avoid health consequences in later life, but also to avoid potential consequences in later generation. This paper will highlight the emerging concern of late onset consequences and possible transgenerational effects of gestational exposure to environmental chemicals.

Keywords: Gestational Exposure, Environmental Hazards, Epigenetic

S.5.3: Community Preparedness in Disaster Management

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Disease Control Division, Ministry of Health

Malaysia is building up its capacity and capability to respond to disaster events, both locally and regionally. In particular, the Ministry of Health (MOH) Malaysia has joined other ASEAN nations in preparing and providing international emergency medical teams (I-EMTs), which comprised of emergency medicine and public health expertise, ready to be deployed to any disaster zone within ASEAN region. Also, the MOH Malaysia has gained an invaluable experience in leading the humanitarian aid

on Rohingya refugees through the setting up of Type II Field Hospital with specialised care services in Ukhiya, Cox's Bazar, Bangladesh during the 3-month mission deployment in December 2017 - February 2018. Nevertheless, disaster preparedness plan and risk reduction activities are not complete without direct involvement of local people. No one understands the local situation better than the local communities themselves. Concept and approach on Community Based Disaster Risk Management (CBDRM) will be further discussed.

SYMPOSIUM 6: CONTRIBUTION AND INTEGRATION OF MILITARY MEDICINE IN PUBLIC HEALTH

S.6.1: Evolvement of Military Medicine in the Field of Public Health in Malaysia

Md Amin b. Muslan,

Malaysian Armed Forces Health Services, Health Service Division

The unfolding of the War on Terror after the Twin Tower and Pentagon Bombing, its ensuing Anthrax attacks, the War in Afghanistan, Iraq, the Indian Ocean Earthquake and Tsunami, the Isil and the War in Syria, SARS, Influenza Pandemics and Western Africa Ebola outbreaks and others demonstrate that the world security environment is not predictable and less controllable. In 1998, in preparation of future challenges had coined the termed VUCA an acronym for Volatility, Uncertainty, Complexity and Ambiguity. The VUCA outlooks is also relevant in public health to ensure a health system that is responsive and prepared to face future challenges. The future health system must not only be safe and effective but also be molded into a high performance organisation to ensure health security of populations. The Military Decision-Making Process and Wargaming can be used to build a high performing organisation and address the threat of VUCA from natural and man-made health threats.

Keywords: Health System, Challenges, Health Threat

S.6.2: Operational Medicine and Humanitarian Assistance and Disaster Relief (HADR), Adaptation of Lessons Learnt From Battlefield For Population In Need

Mohd Arshil bin Moideen,

3rd Division, Malaysian Armed Forces Health Services

Operational Medicine is the healthcare provided in unconventional settings where important resources may be significantly restricted. These resources could include limited supplies, expertise, time, location, or climate extremes. This is a typical scenario in battlefield practiced by military health personnel also known as military medicine. The application of the principles of war in planning and execution of medical missions during war as well as applying the principles of military logistic

supply system in sustaining the medical operations in unconventional settings was proven to be very useful. The principles of suitability, distinguishability, flexibility, sustainability, acceptability and feasibility are being used regularly during planning and execution of any military medical mission. These principles coupled together with the Military Medical Appreciation Process (MMAP) has helped military health providers to cope with the challenges in operating under pressure and severe limitations by having a well thought out and well assessed medical support plan during HADR. This paper entails the deliberate planning process and systematic execution of HADR medical support mission involving the Malaysian Armed Forces Health Services.

Keywords: Operational Medicine, Military Medicine, Military Medical Appreciation Process, HADR.

S.6.3: Aviation Medicine in Malaysia - Maintaining and Enhancing Safety and Health of The Aviation Community

Amei Farina Abd Rashid

Institute of Aviation Medicine

The International Civil Aviation Organization (ICAO) defines Aviation Medicine as a medical specialty which combines aspects of preventive, occupational, environmental and clinical medicine with the physiology and psychology of man in flight. The civil aviation community are divided into the general aviation and the commercial airlines. The health and safety of the civil aviation community is governed by Acts and Regulations which includes the Civil Aviation Act 1969, Occupational Safety Health Act 1994, and Factory and Machineries Act 1967. Aviation Medicine Examiners are doctors appointed by the Civil Aviation Authority Malaysia (CAAM) to ensure the healthcare of the civil aviation industry. The Malaysian Armed Forces aviation community are regulated by the Armed Forces Act 1972 and its related Directives. The Armed Forces is exempted from the health and safety Acts mentioned above. It applies best practices to ensure the safety and health of its aviation personnel. The Military Flight Surgeons are military doctors who have undergone flight surgeon training and are employed at the bases. The presentation will discuss on how the health and safety of the aviation community in Malaysia is managed.

Keywords: Aviation, Military, Flight Surgeon

S.6.4: Underwater and Hyperbaric Medicine Practice in Malaysia - Occupational Health and Clinical Medicine Perspective

Andrew Ng Wei Aun,

94-Armed Forces Hospital, Terendak Camp, Malacca

Underwater and Hyperbaric Medicine is a unique branch of medicine that encompasses a wide range of medical subspecialty both in public health and clinical

medicine. Underwater and Hyperbaric Medicine covers not only the health of divers and submariners but also deals with many aspects of clinical medicine via the use of hyperbaric oxygen. In Malaysia, Underwater Medicine was first introduced in the 1960s to the Malaysian military. The focus at that time was health maintenance of military divers through prevention and treatment of diving related diseases and injuries. Subsequently, underwater medicine expanded to include recreational divers, commercial divers and other non-military occupational divers (police, fire and rescue, civil defence). From an occupational health perspective, prevention concerns diving medical examination, workplace and diving equipment safety, and dissemination of knowledge on safe diving practices. Whereas, treatment concerns recompression therapy for decompression illness and treatment of other diving related conditions such as hazardous marine life injuries and environmental exposure (hypo/hyperthermia, drowning). Clinical hyperbaric medicine was introduced in Malaysia in the 1990s with the setting up of the first hospital based multiplace chamber in Armed Forces Hospital Lumut. Hyperbaric oxygen therapy is currently used for 14 evidence-based indications, including problem wounds, delayed radiation injuries, carbon monoxide poisoning and idiopathic sudden sensorineural hearing loss.

Keywords: Underwater Medicine, Hyperbaric Oxygen Therapy, Occupational Diving, Diving Accidents, Decompression Illness

SYMPOSIUM 7: COMMUNITY CENTERED HEALTHCARE

S.7.1: Enhanced Primary Healthcare: How Are We Doing?

Noridah Mohd Salleh

Family Health Division, Ministry of Health

Strengthening primary health care is one of the key strategies of Ministry of Health (MOH) in the Eleventh Malaysia Plan and Enhanced Primary Health Care (EnPHC) is one of the initiatives to strengthen the health system. Started in July 2017 as a demonstration project, EnPHC was carried out as at 20 health clinics in states of Johore and Selangor following a collaboration between MOH with University of Harvard. The main focus was to look into initiatives to improve the delivery of health services towards the overwhelming NCD burden particularly the early detection of risk factors and to enhance the management of diabetes, hypertension and high cholesterol. Community participation was empowered and activities in the community such as population registration, risk profiling and screening were actively carried out despite challenges and these were monitored by a Community Health Coordinator. A Family Health Team (FHT) being introduced which comprises of multidisciplinary team to provide an integrated bundle of care through a business process reengineering work approach including seamless and borderless referral from primary to secondary level and vice versa. A care coordinator was appointed to monitor closely the patient's care management. Family Doctor Concept (FDC) and person focus care were being adopted in this project through a Family Health Team. Human resource was very crucial in implementing EnPHC. A standard tool was developed to improve the work process in clinic. Strengthening of referral and

counter referral between clinics and hospitals has made tremendous improvements in communication, hence patients' improvement.

Keywords: Family Health Team, Care Coordinator, Community Health Coordinator, Integrated Care Bundle, Multidisciplinary Care, person focus, Family Doctor Concept

S.7.2: Current and Future Needs of Older Malaysian

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Malaysia is experiencing rapid ageing population, at considerably lower level of development. Achievement and improvement in primary public healthcare such as sanitation, food safety and protection against infectious diseases via vaccination have all contributed to the increased life expectancy. Unfortunately, living longer does not mean having a better quality of life and is commonly link with various implications especially the socio-economic and health related problems. The rates of communicable disease may have gone down, but the number of those afflicted with lifestyle related or non-communicable diseases such as diabetes, hypertension, obesity and cancer has risen and more worryingly, continues to rise, which also implicate the need for better care and also increase in health and care cost. The facilities and services provided which include residential care is not in line with the needs and are not reachable by the vast majority of the older persons in Malaysia. Transformation and changes are needed to continuously ensure that older persons have access to facilities, services and opportunities for healthy, productive and active old age. These may require adjustment towards political will, funding model, decentralization of services, gathering of relevant data and also development and enforcement of related acts.

Keywords: ageing, older persons, access to health services

S.7.3: Application of Maqasid Syariah In Decision Making and Choosing Safe Birth Deliveries

Rafidah Hanim Mokhtar

Faculty of Medicine and Health Sciences, USIM

There is a wide misconception among uninformed Muslims that natural means Islamic, and this include health and medicine. According to this belief, natural means the act of surrendering fate to Allah SWT. Active interventions on the other hand are thought to be contradictory to, that one is not having enough faith because one depends too much on another human, or on technologies. The fact that birth delivery involves exposure of aurat or rulings of attire complicates the matter. These misconceptions need to be addressed, with the real concept of treatment in Islam, in accordance with the recent advancements of medical technologies. In Islam, the concept of Maqasid Al Shariat, is very important and if one understands the concept well, there is no mentioned on a particular approach of how one achieves the protection of life. It is neither natural, nor modern intervention. If either one proves

it is better than the other, say to protect one's life, than we are to choose the better method. In preserving life, it is in fact WAJIB to choose a better method. Obstetric discipline whether in Malaysia or abroad has gathered almost enough data on the risk of home deliveries, our grandmothers' generations had endured. Researches and studies have been conducted. We shall see that evidence based medicine with adequate researches, is very much Islamic as it provides the objective measure of Qawaaid Al Shariat. In summary, modern medicine is to reduce all these risks. It's not intended to cause hardships to mother.

Keywords: Maqasid Al Shariat, birth delivery, misconceptions

SYMPOSIUM 8: PUBLIC HEALTH IN INDUSTRIAL REVOLUTION 4.0 (IR 4.0)

S.8.1: Industrial Revolution (IR) 4.0 for Public Health

Fazilah bt Shaik Allaudin

Planning Division, Ministry of Health

Digital health plays important role for health services delivery and public health. It is shown to improve quality of care, accessibility to care and skills, affordability, improve access to information, and also significant role in entire spectrum of care from promotion, prevention, treatment, rehabilitation and palliation. Recognising the potential of digital technologies to play a major role in improving public health, the recent World Health Assembly in May 2018 has agreed on a resolution on digital health. Technology is disrupting conventional knowledge, practices and business models of many sectors including healthcare. The shaking up of the traditional healthcare market could be both exciting and terrifying. Services/technologies such as online platform, mHealth, internet of things (IoT), wearable devices, machine learning, big data and artificial intelligence (AI) allow more efficient and effective healthcare service delivery. However, these disruptions are also creating new opportunities to solve some of the biggest health-related challenges facing the world today. This presentation will also highlight MOH way forward in embracing IR4.0, the strategies and challenges ahead.

S.8.2: Big Data Analytics for Public Health

Mira Kartiwi

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The rapid growth of technology has enabled the massive amount of data digitally generated, collected and stored every second. Big data, the term that has been used to describe such evolving technology has reshaped entire business sectors including public health. There are some well-documented examples of the use of big data in the health sector, among others, Google Flu and HealthMap. Despite increasing number of use cases of big data analytics in public health, the sector has lagged in

the uptake of newer techniques to leverage the valuable information that both structured and unstructured data may offer. There is also limited discussion documented on identifying the extensive opportunities that big data analytics may offer to public health and the possible roadblocks to implementation. Hence, this presentation aims to highlight and proposed a few ways in how big data may advance public health sector to promptly and appropriately address societal health concerns efficiently and effectively.

S.8.3: Information and Communication Technology (ICT) In Disease Control - Infectious Disease Early Warning Surveillance System

Balvinder Singh Gill

Disease Control Division, Ministry of Health Malaysia

Infectious disease outbreaks threaten the stability of national health systems worldwide. Every year, late detection and inadequate response mechanisms compound the effects of rapid disease transmission. Although outbreak alert indicators exist, the means to deploy them in early warning systems is often lacking. Within this context and in line with the prevailing literature, alarm variables such as demographical variables, numbers of suspected/ probable or hospital cases, meteorological variables (mean temperature, rainfall and humidity), molecular epidemiological data and vector indices have all shown evidenced for early warning outbreak predictive abilities. The three areas highlighted in this presentation that underpins key components of an Infectious Disease Early warning system includes, firstly, the analysis and interpretation of historic case datasets, secondly, the identification of appropriate alarm indicators that can sensitively and specifically predict forthcoming outbreaks at different spatial scales; and thirdly, the use these results and analyses to predict and build an early warning system to detect outbreaks in real-time. This presentation will use real world operational examples of infectious disease surveillance strategies employed by the Disease Control Division, Ministry of Health Malaysia.

Keywords: Infectious disease, surveillance, early warning

SYMPOSIUM 9: MALAYSIAN CONSUMPTION OF SALT STUDY (MyCoSS)

S.9.1: Estimating Sodium Intake Using 24-Hour Urinary Excretion: A Population Study in Malaysia

Rashidah Ambak

Institute for Public Health, Ministry of Health Malaysia

Hypertension is an important risk factor for cardiovascular diseases (CVD) including stroke and heart attack, and high salt intake is the major cause of hypertension. Reducing salt intake could prevent 1.65 million CVD deaths per year globally and

there is evidence that salt reduction may have other beneficial effects on health. A reduction in population dietary salt consumption is a global health priority, and it is the most cost-effective strategy to reduce the burden of CVD. To establish effective policies for setting targets and monitoring effectiveness, the current level of population salt consumption was assessed in this study. A representative sample of the Malaysian adults aged 18 years and above living in non-institutionalised setting was randomly selected using a multi-stage stratified sampling method. Data collection was commenced from October 2017 to March 2018. Information was gathered via face-to-face interview using mobile devices. A single 24-hour urine was collected, and urinary sodium was measured using indirect ion-selective electrode (ISE) method. Sodium excretion was corrected to include 10% sodium loss in sweat and faeces. A total of 1047 participants were interviewed and 797 complete urine samples were sent for laboratory analysis. Data were analysed using complex sampling design. Findings showed sodium intake estimated from the urinary excretion was 3166 mg/day (95% CI: 2987, 3346), which exceeds the WHO recommendation of 2000 mg sodium/day. Factors associated with high sodium intake were also explored. This study provides key information which is needed for an effective implementation of a national salt reduction programme in Malaysia.

Keywords: dietary salt intake, urinary sodium, Malaysian adult

S.9.2: Knowledge, Attitudes and Practices to Salt Intake in Malaysia: Preliminary Findings from MyCoSS

Cheong Siew Man, Rashidah Ambak, Fatimah Othman, Nor Azian Mohd Zaki, Ruhaya Salleh, Mohd Hasnan Ahmad, Azli Baharudin Shaharudin, Nur Shahida Abd Aziz, Syafinaz Mohd Sallehudin, Lalitha Palaniveloo, Noor Safiza Mohd Nor

Institute for Public Health, National Institute of Health, Ministry of Health Malaysia

Malaysia started salt reduction strategy in 2010 with raising awareness of salt reduction through campaigns, mass media, and social marketing among Malaysian population. Information on knowledge, attitudes, and practices (KAP) related to sodium intake among Malaysian adults is useful for the policy makers in the salt reduction initiatives. This study aims to determine knowledge, attitudes, and practices related to salt intake among Malaysian adults. Malaysian Community Salt Survey (MyCoSS) is a nationwide cross-sectional survey using multi-stage stratified sampling method. Malaysian adults were recruited from the households in Peninsular and East Malaysia via face-to-face interview method. Socio-demographic data was collected. KAP to salt intake were assessed using the adapted questionnaire from World Health Organization. Descriptive analysis was used to describe the levels of KAP among respondents. A total of 1,032 eligible adults participated into this study with the response rate of 98.5% (59.1% female, mean age 48.9 ± 15.6 years). Almost all of the respondents (99%) added salt when cooking at home. Only 13.5% of them perceived that they ate too much salt. Majority of the respondents (83.5%) were aware of the health risks associated with a high salt intake. Majority (93.2%) of them believed that lowering salt in the diet was important. But only 58.3% of them controlled their salt intake. This study found that public awareness on low salt intake is low. Although they knew that high salt intake is linked to diseases but many of them did not control their salt intake. The assessment of KAP related to salt intake

served as baseline for the policy makers to monitor or evaluate the awareness and behavioral change of salt reduction in the population in the future.

Keywords: salt intake, MyCoSS, knowledge, attitude and practices, adult population

S.9.3: Development of New Equation to Estimate Salt Intake from Spot Urine in Malaysia Population

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High salt intake is the known risk factors for hypertension incident. The standard approach to measuring the mean salt intake of population was through 24-hour urine sodium measurement. However, measurement of 24-hour urine sodium excretion can lead to errors due to under or over collection. Spot urine samples have the advantage that they are easier and cheaper to collect, but the key weakness is that urinary sodium excretion varies throughout the day, which leads to random and systematic errors. A newly developed equation was derived from the Malaysian Community Salt Study (MyCoSS) data. Data from 800 eligible respondents were used for the equation development. Standard statistical procedures which include stepwise multiple linear regression, agreement of the method and internal validity of the test were performed to a) develop a new equation to estimate 24 - hour urine sodium b) validate the new equation against actually measured sodium; and compare the accuracy of the new equation with those of different published equations to estimate 24-hour sodium intake. The new predictive equation showed strong beta coefficient of spot urine sodium, potassium, age, gender and BMI with 24-hour sodium excretion. The newly equation showed a greater beta coefficient, lower mean bias and coefficient of variations with measured 24-hour urine compared to other published equations. There was an estimation bias with increasing underestimation when the sodium excretion increased. Where actual measuring of 24-hour urine test is not possible, this newly derived equation is possible to determine the sodium intake trend in Malaysia population.

Keywords: Spot urine sodium, Sodium intake in Malaysia, Spot urine sodium equation

ORAL PRESENTATION

EPIDEMIOLOGY

EOP001

What Predicts Diet Self-Care Behaviour Among Type 2 Diabetes Mellitus Patients?

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The prevalence of diabetes mellitus in Malaysia was increasing tremendously last decade but the diabetes control among Malaysian is still unsatisfactory. Diet control is essential in maintaining good glycaemic control. The aim of this study was to determine the diet self-care behaviour and its predictors among type 2 diabetes mellitus (T2DM) patients in the government health clinics at a district in Penang. A total of 546 T2DM adult patients were recruited by simple random sampling method in this cross-sectional study. Validated self-administered questionnaires that consist of socio-demographic characteristics, diabetes profile, knowledge, Health Belief Model (HBM) and Summary of Diabetes Self-care Activity Scale (SDSCA) was used. The participants practised mean 4.2 (SD = 1.18) days of diet self-care behaviour past 1 week. Participants who are female, attained university or college educational level, perceived benefit, and have self-efficacy were significantly associated with desired diet self-care behaviour. Participants on combination oral anti-diabetic agents (OAD) and insulin, and perceived barrier were significantly associated with poorer diet control. Self-efficacy (standardized β = 0.313, $p < 0.001$) and the combination of oral anti-diabetic agents (OAD) and insulin (standardized β = -0.120, $p = 0.003$) significantly predicted diet self-care behaviour. The above variables predicted diet self-care behaviour with the total variance of 11.9% [$F(2,543) = 36.584$, $p < 0.001$, adjusted $R^2 = 0.116$]. Self-efficacy was the strongest predictor of diet self-care behaviour. Diabetes health intervention planning and implementation in the studied district can be carried out more effectively based on the identified predictors in this study.

Keywords: diet self-care behaviour, type 2 diabetes mellitus, Health Belief Model

EOP002

Serious Games and Preventive Self-Care for Diabetes

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Diabetes is associated with many chronic diseases and disabilities. World Health Organization (WHO) statistics shows that 422 million adults have diabetes and 3.7 million of deaths due to diabetes and high blood glucose. The risk factors for diabetes include genetics, age, family history and behaviours such as unhealthy diet and physical inactivity. Educating people with information about balance diet and nutrition or which food is good (or bad) for diabetes would help to prevent diabetes at the early stage. This requires an interesting approach to educate and keep in people mind the suitable food that could prevent diabetes. Thus, in this study, we explained both the design of the approach as well as the serious game architecture for improving awareness in preventing diabetes and to increase the understanding on healthy food choices for diabetic patient. This prototype application named as *Grab2BeHealthy* can be used by public to increase awareness or as a teaching tool. While professional healthcare providers can use it as a consultation tool. This game gives information related to the healthy and unhealthy food that are associated with diabetes. Players must grab a healthy food with a challenge and information related to the diabetes while playing the games. An evaluation study involving 22 peoples from various gender and age range had been conducted to get their feedback on the game play, game design, game mechanics and motivation while they play the game.

Keywords: Diabetes, Serious Games, Self-Care, Prevention, Healthcare

EOP003

Ticking Time Bomb in Young and Productive Diabetic Patients with Poorly Controlled Cardiovascular Risk Factors in Negeri Sembilan, Malaysia

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Cardiovascular disease (CVD) and diabetes post enormous disease burden with increasing prevalence in younger age groups. Tight controls of CVD risk factors are important to prevent complications. This study aims to determine the CVD risk factor treatment targets control among type 2 diabetic patients by age groups in Negeri Sembilan, Malaysia. A cross-sectional study was conducted in April 2018. Among 15,545 participants, the mean (SD) age was 61.2 (10.8), 61.2% females and 63.8% Malays. Overall, 32.8%, 26.5%, 51.1% 65.2% and 68.5% achieved individual treatment targets control for HbA1c, blood pressure, LDL-cholesterol, HDL-cholesterol and triglyceride respectively. Only 3.6% patients achieved all five treatment targets

simultaneously. Comparing to elderly ≥ 60 years, participants 50-59 years fare worse and were 47.3%, 26.3%, 28.4%, 28.5% and 23.6% less likely to achieve HbA1c, blood pressure, LDL-cholesterol, HDL-cholesterol and triglyceride treatment targets. Those ≤ 49 years did worst for all five targets and were 72.0%, 39.1%, 44.5%, 58.4% and 32.8% less likely to achieve respective treatment targets compared to elderly. Multivariate analysis showed ≤ 49 years and 50-59 years had 3.62 and 1.95 times the odds to have overall poor cardiovascular risk factors control (≤ 3 treatment targets achieved). We recommend more targeted focus on these young and productive diabetic patients to control CVD risk factors.

Keywords: cardiovascular risk factors

EOP004

Knowledge, Attitude and Practice of Non-Communicable Disease (NCDS) Among Urban Residents in Negeri Sembilan

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The prevalence of non-communicable diseases (NCDs) in Malaysia has increased over the past decade. Despite this, studies assessing the level of knowledge, attitude, and practice (KAP) on NCDs are limited. Thus, this study aimed to assess the levels of KAP on NCDs among residents in an urban area of Malaysia. The NCDs are diseases such as hypertension, heart attack, stroke, diabetes mellitus and chronic obstructive pulmonary disease (COPD). A cross-sectional study was conducted using validated questionnaire via face-to-face interview. There were 207 respondents from the urban area of Ampangan, Negeri Sembilan. Their average age was 53.52-year-old (SD: 17.86). Seventy-six (36.7%) of them were males while 131 (63.3%) were females. Majority of the respondents found to have good knowledge (81.2%) and attitude (53.1%) scores towards NCDs. However, only 8.7% of the respondent has good practice scores while majority of them had moderate (56.5%) scores. Respondents who were 60-year-old and above had better knowledge score ($p=0.010$) compared to the lower age groups. Females have higher attitude ($p=0.025$) and practice ($p=0.007$) score when compared to males. Respondents with hypertension ($p=0.002$) and diabetes mellitus ($p=0.014$) had higher knowledge scores compared to non-diseased respondents. In conclusion, the respondents in urban area had good knowledge and attitude towards NCDs, however, their practice scores were moderate. Repeated reinforcement with health education will definitely bring about a positive change in urban general population knowledge towards NCDs, especially in younger and non-diseased population.

Keywords: non-communicable disease, knowledge, attitude, practise, urban

EOP005

The Prevalence of Non-Communicable Diseases and Associated Risk Factors Among Adults in Ampangan, Negeri Sembilan

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Urbanization and sedentary lifestyle contributes to the increasing prevalence of non-communicable diseases (NCDs). This study aimed to assess the prevalence and risk factors of NCD among a community in an urban area of Malaysia. A health and wellness screening survey were conducted assessing self-reported medical history, medication history, family history and related risk factors of the respondents in Ampangan, Negeri Sembilan. A total 207 respondents were randomly selected and interviewed for this study. The highest prevalence of NCDs was hypertension (34.3%), followed by hypercholesterolemia (24.2%) and diabetes mellitus (20.3%) Among respondents reported with NCDs, 96.0% of hypercholesterolemia patients and 91.4% hypertensive were on medication. However, only 83.3% of known diabetics were on medication. Multivariate analysis shown that older age (OR= 1.101, p<0.001), family history of hypertension (OR= 3.124, p=0.005) and diabetes mellitus (OR=3.824, p=0.003) were independently associated with hypertension. For hypercholesterolemia, older age (OR=1.042, p=0.016) and hypertension (OR=3.896, p=0.002) were found to be independently associated. Older age (OR= 1.050, p=0.011) and hypertension (OR= 4.760, p=0.001) were independently associated with diabetes mellitus. Our results demonstrated that prevalence of NCDs especially hypertension and diabetes was high in an urban population. The baseline results can be used to develop an intervention program to improve adherence to medications and promote healthy lifestyle among the community.

Keywords: non-communicable disease, prevalence, risk, urban

EOP006

Validation Of The Yale Food Addiction Scale: Factor Structure And Item Analysis

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The development of the Yale Food Addiction Scale 2.0 (YFAS 2.0) followed the latest update of the addiction criteria in the Diagnostic and Statistical Manual of Mental Disorder version 5. The objective of this study is to translate the YFAS 2.0 into the Malay language and test its psychometric properties in a primary care population.

Between the year 2017 and 2018, a total of 300 adults from a regional primary care clinic in the district of Seremban were assessed for food addiction (FA) utilizing the Malay version of the YFAS 2.0. The participants were also tested for eating disorder using the validated Malay version Binge Eating Scale (BES). An assessment of the psychometric properties of the scale was performed to determine the factor structure, item statistics, internal consistency and construct validity of the scale. The prevalence of FA was 5.0%. A two factorial structure of YFAS was confirmed as the most optimal solution through factor analysis. In both its diagnostic and symptom count version, the YFAS 2.0 had good internal consistency (Kuder-Richardson alpha > 0.80) and was associated with body mass index (BMI) and binge eating disorder. We validated a psychometrically sound Malay version of the YFAS 2.0 in a primary care population in both its diagnostic and symptom count version. The questionnaire also revealed the dual dimension of food addiction beliefs in the Malaysian population. The questionnaire can now be formally utilized as a tool to predict addictive eating patterns in the society.

Keywords: Food addiction, validation, obesity, psychometric properties, hyper-palatable food

EOP007

Reliability and Validity of the Malay Version of Smoking Cessation Quality of life (SCQoL)

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Smokers trying to quit face various problems internally and externally during the process of quitting which includes post cessation impact. Hence, there is a growing interest in assessing the impact of smoking cessation on quality of life. SCQoL was developed to quantify the impact of smoking cessation on perceived functioning and well-being in adults. The study objectives are to translate the SCQoL from the English version to Malay version and to validate version Malay of SCQoL among smokers. A cross-sectional study was conducted among 258 male smokers. The forward-backward procedure was applied in translating the questionnaire from English to Malay language. The internal consistency and stability was assessed by Cronbach alpha and test retest, whereas the validity performed by exploratory factor analysis(EFA). The translated questionnaire showed high internal consistency with Cronbach's alpha value of 0.91. The test-retest reliability revealed acceptable stability, with Pearson correlation coefficients ranging from low to moderate ($r>0.30-0.60$). For EFA, results revealed that the KMO is 0.86, communalities ranged from 0.30-0.67. The scree plot and Kaiser Criteria shown it consist of 13 constructs with 65.61 cumulative % of initial Eigenvalue. The construct validity achieved with an acceptable factor loading for each construct ranged from 0.30 to 0.80. Finally, SCQoL Malay version consist of 46 items with 12 constructs. The current study

provided psychometric evidence for an appropriate, reliable and valid tool of SCQoL Malay version. This questionnaire could be applied in evaluating smoking cessation interventions in Malaysia.

Keywords: SCQoL, smoking cessation, quality of life, Malay version

EOP008

Trend and Distribution of Household Tobacco Expenditure in Malaysia from 1993 to 2014

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Tobacco epidemic is a public health threat in Malaysia. It does not only negatively affect the individual but the whole family via their social and financial aspects. This study examined prevalence of household tobacco smoking, per capita tobacco expenditure as well as the share of tobacco expenditure from total household consumption. This repeated cross-sectional study utilized 5 series (1993, 1998, 2004, 2009 and 2014) nationally representative data from Household Expenditure Survey(HES). We analyzed the prevalence of household tobacco smoking by geographical locations and socio-economic quintile. Concentration index was used to assess the distribution of tobacco expenditure by socio-economic quintile. Then, per capita tobacco expenditure and the share of tobacco expenditure was analyzed by ascending socio-economic quintile. The prevalence of household tobacco smoking had been well above 40.0%. The poorest quintile had the highest prevalence of tobacco smoking from 1993 to 2004 while the middle-income quintile was the highest from 2009 to 2014. By per capita tobacco expenditure, the richest quintile spent more than other quintiles. The concentration indices indicated that tobacco expenditure was more pronounced among the rich. On the contrary, the poor and the middle-income quintiles advocated higher proportion of their available money on tobacco products compared to the richest quintile. Although tobacco expenditure was higher among the rich, it is paradoxical that the poor and the middle-income quintiles advocated higher proportion of their money for tobacco products with the prevalence of household tobacco smoking had evidently shifted to middle-income in the recent years.

Keywords: Household tobacco expenditure, concentration index, tobacco smoking

EOP009

Predictive Factors of Quality of Life Among Chronic Obstructive Pulmonary Disease Patients in Community Hospital, Thailand

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This cross-sectional study aims to find predictive factors of quality of life among patients with chronic obstructive pulmonary disease (COPD). A multi-stage random sampling was conducted. A total of 270 COPD patients in community hospitals in Chachoengsao province, Thailand participated in this study. Data were collected and descriptive analysis was done together with chi-square test and logistic regression analysis. Factors significantly correlated with quality of life ($p<0.05$) were occupation, age, symptoms, exacerbation of the disease, co-morbidity, dyspnea, drug administration behaviour, practices to avoid exacerbation, physical exercise, health benefits, receiving advice on drug administration, pulmonary rehabilitation or physical exercise; and difficulties in using health service. The factors that could predict quality of life in COPD patients include dyspnea, co-morbidity, difficulties in using health service, had not received advice on pulmonary rehabilitation or physical exercise, drug administration practice and the symptoms of the disease. These factors predict the quality of life of the samples as correctly as 59.6%. Our study results suggest that health education should be promoted to provide knowledge and instructions on patients' self- management. Monitoring and evaluation of educational activities and the provision of care for COPD patients as a holistic approach should be applied in the provision of care, which would contribute to a better quality of life among COPD patients.

Keywords: quality of life, chronic obstructive pulmonary disease, community hospital

EOP010

Ebola Recovery Project Sierra Leone

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The epidemic of Ebola virus disease in parts of West Africa which lasted throughout 2013 to 2016 was the most complex in the four-decade history of the disease. Whereby, the socio-economic impact of the epidemic is substantial to the affected region. This necessitate the global community to come forward offering the humanitarian relief very much needed by the countries which have been affected by the deadly Ebola virus. Accordingly, as part of this immense value on international cooperation, the Government of Malaysia through the Ministry of Health Malaysia has entered into a partnership with MERCY Malaysia to implement the 'Ebola Recovery Project Sierra Leone'. Upon which, the priorities of the project focus on implementing safety protocols, investments in water supply and sanitary measures

for schools and provision of training and awareness about Ebola transmission and prevention among teachers and parents / guardians. This project was a success story which resonate the value of global solidarity by means of local effort and establishment of a smart partnership between government and non-governmental organisation.

Keywords: Ebola, West Africa, schools, hygiene, partnership

EOP011

Leptospirosis Outbreak at An Institution in Jelebu

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Institution is one of the easiest places for disease outbreak. Leptospirosis can be transmitted to human through rodents in favourable environment and it can cause death to human. Leptospirosis outbreak occur in areas which are habitable by rodents and populated with human. Environment plays an important factor for leptospirosis transmission. This study aims to describe a leptospirosis outbreak and its management at an institution in Jelebu. The outbreak investigation started upon receipt of the death notification of a trainee at the institution due to leptospirosis. Subsequently, second case was notified on the same day followed by another six cases. All trainees and staffs of the institution were screened for signs and symptoms of leptospirosis. There were 41 cases of Leptospirosis in total and the attack rate was 15.59%. About 85% of screened trainees and staffs were asymptomatic of leptospirosis. The onset started from 10th until 20th December 2017. Of the 41 blood samples sent, 46.2% tested positive by MAT test and 4.6% by PCR. Whilst for environmental samples, *leptospira* spp was detected in 18.8% of the soil samples but none from water and rodent samples. Preventive and control measures taken include isolation of cases, discussion with the authority, walk through assessment around the institution by health officers, cleaning of the institution area, elimination of potential sources of infection and health promotion. In conclusion, the source of infection was identified, and the outbreak was controlled through close cooperation between health office and institution authority.

Keywords: leptospirosis, outbreak, institution

EOP012

Epidemiology of Human Leptospirosis in Jerantut, Pahang, 2013-2017

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Human leptospirosis is a potential serious but treatable zoonotic infection. In district of Jerantut Pahang where agriculture, tourism and logging are the main drivers of the economy, people here is exposed to the risk of transmitting the disease. The aim of the study is to describe the epidemiology of human leptospirosis and examine the effectiveness of the surveillance system in place. Retrospective data of 200 cases of human leptospirosis which had been notified to Jerantut District Health Office from years 2013 to 2017 taken from e-notification were analysed in SPSS 20.0. Cases that had been registered in this surveillance system were classified as probable case in view of case definition and laboratory result. The annual incidence rate was 40.8 per 100,000 population. The disease was seen more frequent in males (77%). The highest incidence occurred in the 35 - 45 years old age group (24.5%). Among Malaysian, ethnic Malay had the highest incidence (75.0%), followed by Orang Asli (0.05%). Immigrant worker account for 0.12% and tourist 0.01%. Agriculture workers shown to have highest incidence of 37.5%. Leptospirosis cases noted to be raised during end of monsoon season between February - April (33.0%). The diagnosis of human leptospirosis remains as a challenge to clinician as the symptoms of the disease mimics other infections. The availability of serological diagnosis may help but not without its own drawback. Surveillance data collected for leptospirosis in district of Jerantut are mainly based on probable case. The incidence rate for confirm case are much lower than reported.

Keywords: Leptospirosis, Zoonotic Infectious Disease, Jerantut Pahang.

EOP013

Meningococcal Meningitis Outbreak in Boarding School, Kuala Lumpur

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Meningococcal meningitis is a bacterial form of meningitis cause by *Neisseria meningitidis*, mortality rate of 50% if left untreated. In January 2018, Communicable Disease Control Unit of Lembah Pantai Health District received notification of a case of death of meningococcal meningitis. Investigation was carried out immediately for preventive and control measures. A case was defined as a person that lived either in dormitory blocks or quarters block with clinical features of meningococcal meningitis infection. Data was collected through face-to-face

interview, telephone interview and direct observation. Water and clinical samples also were obtained. A total of 530 contacts were screened through active case detection (ACD), which 74.2% contacts were from contacts in the schools. Following the case definition for suspected cases, 34 cases had fulfilled the criteria, in which all were males and mostly Malaysian citizen (73.5%). The top three symptoms were fever (94.1%), headache (52.9%) and runny nose (41.2%). Three out of 62 throat swab samples positive for *Neisseria meningitidis*, but subsequent sample were negative. None of the water sample was positive for microbiological analysis. Immediate control measures were essential to halt and to prevent the spread of the outbreak. The source of infection was unable to be concluded but mass gathering in the nearby mosque was the suspected attributable risk factors to the outbreak. More studies should be conducted in order to improve knowledge of the epidemiology of meningococcal disease especially about the status of carrier and the type of prominent serogroup among Malaysian populations.

Keywords: Meningococcal meningitis, outbreak, Kuala Lumpur

EOP014

Middle East Respiratory Syndrome Coronavirus: A Survivor

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A case of 55 years old Malay man, diagnosed with Middle East Respiratory Syndrome Coronavirus (Mers-CoV) presented to the hospital with the complaint of fever, cough with productive sputum, malaise and leg pain for 4 days. He was admitted into the isolation ward for further investigation. His result came back as positive Mers-CoV. He had a history of travelling to Arab Saudi to perform umrah, and returned to Malaysia one day before the symptoms appear. The patient had a history of visiting camel farm during his stay in Arab Saudi, and claimed to have a direct contact with the camels in the farm and drank 1.5L of unpasteurized camel milk during his visit. During admission, all his vitals showed normal values, except for his temperature of 38.2 °C. He was started on multi-drug therapy of antibiotics and other symptomatic treatments. His chest x-ray shows minimal perihilar haziness. Repeated samples still showing positive result for Mers-CoV. On day 7 of treatment, his blood investigation shows negative for Mers-CoV, and he was allowed for discharge on day 9 with home isolation. A total of 75 close contacts were identified and screened by the public health team during the investigation. Control measures had been carried out as per guidelines and all contacts were given health education on Mers-CoV with home quarantine. Investigation of his contacts found no secondary cases and they were released from the home quarantine.

Keywords: Mers-CoV, early detection, effective control measure

EOP015

A Rumour Turned Outbreak- A SWOT Analysis

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The basic principle of an outbreak management seems ideal in guidelines. Nevertheless, at ground level, the nature of an outbreak brought to light may not be as straight forward as it seems. This is true when cases are first known through rumour surveillance. In January 2018, the health district office of Kuala Pilah had an outbreak of influenza like illness (ILI) involving two boarding schools affecting eight students. The Strength, Weakness, Opportunity and Threat (SWOT) analysis was applied to analyse the management of the ILI outbreak. The SWOT analysis findings showed that the rapid action taken by the CDC unit to investigate at the school of the index case positive for Influenza A which was known through WhatsApp application despite no formal notification received was the strength. Having groups of students from the same school presenting with similar symptoms should have alerted the school administration to notify the health district and this depicts the weakness. Nevertheless, rapport between the school and the rapid response team from the nearest health clinic in handling the situation was seen as the opportunity fostered. However, despite the prompt action, this had led to poor preparation of the officers whom were not well verse with case definitions and not expecting to meet with many students presenting with similar symptoms which becomes the threat. This SWOT analysis carried out was able to shed light on improvement that could be done in managing similar outbreak which begun with just a rumour.

Keywords: SWOT analysis, outbreak, rumour surveillance.

EOP016

Assessment on Performance of Laboratory Investigation in Outbreak Management, 2015-2017.

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Public health laboratory is designed to identify and facilitate investigation of disease outbreaks. Performance of laboratory attributable to pre analytical and analytical factors. The aims of this study is to measure the yield of outbreak investigation from the laboratory perspective. A review of laboratory data outbreak for three years, 2015 to 2017 was performed, capturing information about epidemic features available, and laboratory findings of the outbreak samples. A total of 23072 samples results (mean average of 7691 samples per year) were reviewed involving 1668 clusters of clinical samples and 321 clusters of non-clinical samples. The yield of cluster positive is in the range of 4.20% to 100% (mean average = 48.63) for clinical samples and 0.00% to 21.2% (mean average= 11.07) for non-clinical samples. The

result of this study recommends that performance of the laboratory component need to be improved to facilitate outbreak investigation and to optimise the cost allocated for laboratory testing.

Keywords: laboratory investigation, outbreak, positive yield, performance

EOP017

Non-Communicable Disease Prevention and Control in Malaysia: A Mapping of Policies

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Non-Communicable Diseases (NCDs) are a leading cause of morbidity and premature mortality in Malaysia. Malaysian policy makers and healthcare professionals have developed various policies to halt this rising epidemic. This paper aims to review and evaluate Malaysia's NCD-related policy documents against the WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020 (WHO Global Action Plan of NCDs) and the 2011 United Nations Political Declaration on NCDs. A review of policy documents published by the Malaysian policymakers from the year 2008-2018 was conducted. Policy documents related to prevention and control of NCDs were identified through desk reviews at Ministry of Health (MOH), internet-based searches and expert consultations. A matrix format was used to extract and map information from the policy documents against the objectives of the WHO Global Action Plan of NCDs. NCD Policies in the country were aligned with the WHO Global Action Plan of NCDs. Majority of the identified NCD-related policies addressed the common NCDs and their major risk factors. Many of these documents include a detailed action plan and monitoring framework. However, not all objectives of the WHO Global Action Plan of NCDs were well addressed, with obvious gaps in addressing chronic respiratory diseases, the absence of evaluation and monitoring component in certain policy documents, and low emphasis on NCDs related research. Poor emphasis on these areas may impede progress in reducing the burden of NCDs in Malaysia. Future work should evaluate the effectiveness and the translation of these NCD policies into action.

Keywords: Non-Communicable Disease, Malaysia, Health policy

EOP018

Burden of Mental and Substance Use Disorders in Malaysia For 2014

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Mental and Substance Use Disorders constitutes 7% of overall global Disability-Adjusted Life Years (DALYs). DALYs is a measure of overall disease burden, expressed

as the summation of Years Lost due to Disability (YLD) and Years of Life Lost (YLL). The purpose of this study was to calculate the Malaysian burden of mental and substance use disorders. The morbidity data were derived from national registries or estimated using international data, while the mortality data were derived from the Department of Statistics Malaysia. The DALY was calculated by summing up the YLL (number of deaths multiplied by life expectancy) and YLD (prevalence multiplied by disability weight of disease). The total DALYs for Mental and Substance Use Disorders was 0.4 million DALYs which was 7.2% of the total all-cause DALYs. The highest DALYs was contributed by depressive disorders (21.6%), followed by schizophrenia (19.8%) and anxiety disorder (19.0%). By gender, substance use disorders were highest in males (29.5%) and anxiety disorder in females (27.3%). Substance use disorders contributed to 17.5% of the YLD, where 67.7% were due to illicit drugs, and 71% of the total YLL. This study shows that Malaysia's total burden of mental illness is similar to that of the global estimates. Though the highest burden is from depressive disorders, significant gender differences were noted. Substance abuse that contributes to significant disability (YLD) and premature mortality (YLL) is an important issue that needs to be addressed by the health policy makers and the relevant authorities.

Keywords: Burden of Disease, Mental illness, Substance abuse, DALY

EOP019

Risk Factors of Drug Abuse Among Malay Males Felda Settlers in Jerantut, Pahang

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In Malaysia, drug abuse cases were on the rise. National Anti-Drug Agency (NADA) reported that 96.2% of drug abuse cases were among males. Jerantut has the highest prevalence of drug abuse in Pahang and 70.3% of them are from FELDA settlements. The study aims to determine factors associated with drug abuse in FELDA settlements in Jerantut, Pahang. A population based unmatched case control study was conducted in April 2017. Cases are confirmed male drug abuser and controls are those who had never use any drugs. A total of 180 cases and controls were selected randomly from NADA and FELDA list. The highest risk of drug abuse was in age group 20 to 29 years ($aOR=6.93$, 95% CI=1.61, 29.83). Those who completed only until primary school had more risk of drug abuse ($aOR=11.36$, 95% CI=1.78, 72.55). Cigarette smoking had higher risk compared to non-smoker ($aOR=10.56$, 95% CI=3.14, 35.56). A person who had consumed alcohol had higher risk compared to those who had never consumed alcohol ($aOR=9.14$, 95% CI=3.75, 22.27). Low self-esteem increases risk of drug abuse compared to normal self-esteem individual ($aOR=7.34$, 95% CI=3.66, 14.72). High resistance to peer influence was a protective factor for drug abuse ($aOR=0.31$, 95% CI=0.16, 0.62). Individuals with family members involved in drug abuse had higher risk to abuse drug ($aOR=4.28$, 95% CI=1.80, 10.17). By

identifying the risk factors, early detection and prevention can be done to curb drug abuse issues in FELDA settlements area.

Keywords: Drug Abuse, Risk factor, Malay male, FELDA, Jerantut

EOP020

Is Chronic Kidney Disease on the rise in Malaysia? Findings from a nationwide study

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Chronic kidney disease (CKD) is a complex disease impacting millions worldwide. CKD, like other chronic diseases, represents a significant public health problem because of the associated high morbidity and mortality, mainly attributable to elevated cardiovascular risk. CKD affects about 1 in 10 adults and accounts for millions of premature deaths worldwide. According to the 23rd Report of The Malaysian Dialysis and Transplant Registry (MDTR) in 2015, there was two-and-a-half-fold increase of patients receiving dialysis in Malaysia compared to the year 2006. While MDTR is a great initiative that provides a large database on kidney diseases, it only collects information on patients with end stage renal disease (CKD stage V), who are on renal replacement therapy (RRT) in Malaysia. Thus, it is essential to know the nationwide prevalence of CKD in the population, from mild (stage I) to advance stage (stage V) in the population. The National Health and Morbidity Survey (NHMS) 2011 showed that the prevalence of CKD in Malaysia was 9.0%. Currently the Institute for Public Health is conducting a nationwide population-based study to determine the current prevalence of CKD among Malaysians adults. Preliminary results as of May 2018 shows that the prevalence of moderate to advance CKD (stage III, IV and V) is at 5.8% (95% CI: 3.89, 8.50), which is double from that of in the year 2011 (2.9%). As majority of diagnosis of CKD will be of stage I and stage II, we expect the current prevalence of CKD in Malaysia to increase considerably compared to the prevalence of CKD from NHMS 2011. As we conclude our study in the near future, the result will serve as the new reference point for CKD in Malaysia. This will not only provide our healthcare workers with the status of CKD in Malaysia but also will assist our policy and programme makers to evaluate accordingly their previous stance and efforts in relation to CKD prevention programmes and treatment plans in Malaysia.

Keywords: Chronic kidney disease, Malaysia, Institute for Public Health, Malaysian Dialysis and Transplant Registry

EOP021

Domiciliary Care Service: Factors Influencing Improvement in Activities of Daily Living Among Stroke Survivors in Kelantan

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Stroke is a debilitating disease, adding to morbidity and mortality. Post stroke rehabilitation has an influence on functional recovery among stroke survivors. In Malaysia, domiciliary care service is a home-based rehabilitation program, provided by multidisciplinary teams. However, effectiveness of such service has not been studied. This study aimed to determine factors associated with the improvement in Activities of Daily Living (ADL) of stroke survivors following domiciliary care service in Kelantan. A state-wide record review study was conducted using Domiciliary Care Record from health clinics with comprehensive domiciliary care. Records for period between January 2015 and October 2017 were included. Multiple logistic regression (MLR) was performed to assess factors associated with improvement in ADL. A sample of eligible 234 records were reviewed, 72.2% of the participants had ADL improvement following domiciliary care service. The mean (SD) age was 68.21 (11.99). In the final MLR model, factors associated with ADL improvement post domiciliary care service were age group <65 (Adj. OR 2.241; 95% CI 1.019, 4.927; $p =0.045$), ischemic stroke type (Adj. OR 4.842; 95% CI: 2.180, 10.758; $p <0.001$), less severe stroke (mRS score 4) (Adj. OR 3.492; 95% CI: 1.696, 7.189; $p =0.001$), no previous stroke (Adj. OR 3.702; 95% CI: 1.756, 7.803; $p =0.001$) and those who received ≥ 8 rehabilitation visits (Adj. OR 2.226; 95% CI: 1.113, 4.450; $p =0.024$). Therefore, recognition of these factors is beneficial to intensify optimal stroke care and rehabilitation services in the country.

Keywords: domiciliary, home-based rehabilitation, stroke, Activities of Daily Living

EOP022

Obesity and Incidence of Hypertension in 7 years (Data Analysis of IFLS 4 and 5)

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Hypertension becomes one of the health problems both at the global level as well as nationally, because of the numbers of incidence and its complications increasing from year to year. Our study objective was to determine the association of obesity with incidence of hypertension within 7 years on population age 18 years and above, in 13 provinces in Indonesia. The research involved samples from Indonesia Family Life Survey 4 (IFLS-4) (2007) and IFLS-5 (2014). Data were collected in community

via interview and blood pressure measurement. A total of 12,982 non-hypertensive subjects in 2007 were evaluated in 2014 to determine their hypertension status. Hypertension is defined when the systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg, or on any antihypertensive medication. Data were analyzed by chi-square test and Cox regression. The incidence of hypertension within 7 years was 1857 case (14.3%). The risk of hypertension in obese persons is 1.97 times (95% CI : 1.75 - 2.21) after adjusted by gender, age, educational level, marriage status, smoking habit, and level of physical activity.

Keywords: hypertension, incidence, IFLS

EOP023

Dengue Notification Pattern in Kuantan District and its Predictors

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Pejabat Kesihatan Daerah Kuantan

Dengue fever has complex interactions of vector with environmental, biological and social factors. Early notification is important to facilitate early preventive and control activities. The objective of this study was to determine dengue notification pattern in Kuantan and its predictors. We conducted a cross sectional study of 661 registered dengue cases in Kuantan from January until September 2017. We included all cases that fulfilled the clinical case definition from ICD-10. Data from the investigation forms of notified dengue cases were reviewed and analyzed using SPSS. From 661 dengue cases registered, majority (84.9%) had consulted the healthcare providers earlier. However, only 55% notified as dengue within 3 days (mean 3.36 ± 1.57 days). Multiple logistic regression analysis showed type of providers was the only significant predictors for delayed notification (Government Clinic OR 3.172, 95% CI 1.351-7.447, Private Clinic OR 6.390, 95% CI 2.733-14.941). Other variables (age group, gender, ethnicity, case type) showed insignificant result. Delayed notification was one of the major challenges for effective dengue control management in Kuantan. Indication for dengue serological testing should be revise to anticipate delayed notification for early public health intervention.

Keywords: Notification pattern, healthcare providers, control activities, intervention.

EOP024

Correlation of Meteorological Dynamic on *Aedes* Distribution and Abundance in Jempol, Negeri Sembilan, Malaysia

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Vector-borne diseases are influenced by the dynamic meteorological factors. This study aims to determine correlation between *Aedes* vectors distribution and its abundance with meteorological variables. A cross-sectional study was conducted in Jempol, Negeri Sembilan. Two localities with the highest incidence rates of dengue in five consecutive years were selected; Taman Satelite and Felda Raja Alias 4. Positive Ovitrap Index (POI) and Mean Eggs per Trap (MET) were measured in these two localities within six months from April to September 2017. Selected parameter for meteorology include temperature, humidity and rainfall. Descriptive analysis and correlation analysis was done to examine the pattern of *Aedes* distribution and its abundance in relation to meteorological variables. The mean of POI for Felda Raja Alias 4 was 60.46 (SD=10.94), while Taman Satelite was 29.96 (SD=8.08). There was a significant mean difference for POI between the two localities (p-value < 0.001). The mean of MET for Felda Raja Alias 4 was 23.94 (SD=7.82) while Taman Satelite was 18.00 (SD=7.15). There was a significant correlation between POI and MET in Taman Raja Alias 4 (p-value< 0.001) but no significant difference in Taman Satelite. None of the meteorological variables correlated with POI and MET for both localities. Constant weather, short duration of study and study sites selection, POI and MET do not show any correlation with meteorological factors. Future extensive study with longer duration and case control study design is required to explore potential association between POI and MET with meteorological factors.

Keywords: dengue, humidity, mean eggs per trap, positive ovitrap index, rainfall, temperature.

EOP025

Is Malaria Knowlesi Really Occuring at Rural Community?

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Pejabat Kesihatan Daerah Tampin

Plasmodium knowlesi is a zoonotic malaria that can infect between macaques and humans. The parasite is transmitted by a group of mosquitos that belongs to Anopheles group. Even though the number of human malaria cases in Malaysia has been significantly reduced for the past few decades, the emerging of this zoonotic malaria has become one of public health concern. The main natural hosts for this zoonotic malaria are long-tailed macaque (*Macaca fascicularis*) and pig-tailed macaque (*Macaca nemestrina*). Many of this zoonotic malaria cases reported from rural area, however, as human activities expanded such as urbanization and

deforestation, these macaques migrate and inhabit areas that was also inhabited by the humans. This can lead to an increase risk of infection caused by *Plasmodium knowlesi*. A case reported in Tampin district involving a 53-year-old man, who lived in area that is near to town, with some macaque species were dwelling surrounding his house, has been diagnosed with malaria that is caused by *Plasmodium knowlesi*. He was symptomatic for one week and treated accordingly at the nearby hospital. At around this period as well on separate occasion, the enforcement team of Pejabat Kesihatan Daerah Tampin also found a macaque at a housing premise that was used as producing pop-corn. They kept it as a pet. This article may be an eye opener to public health sector to be aware of the possibility of emerging zoonotic malaria cases in urban areas.

Keywords: *Plasmodium knowlesi*, malaria, zoonotic malaria, macaque, Pejabat Kesihatan Daerah Tampin

EOP026

Emerging *Aeromonas* Species Infection in Food Poisoning Outbreak Involving Institution

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Foodborne diseases persist as one of the major public health problems in Malaysia. These diseases include cholera, typhoid fever, hepatitis A, dysentery and food poisoning. Article published in Malaysia, showed that the five most common bacterial pathogens isolated were non-typhoidal *Salmonella* (57%), *E. coli* (14%); *Shigella* spp. (11%), *Compylobacter* spp. (5%) and *Aeromonas* spp. (4%). At 11.30 pm on 17 April 2018, Seberang Perai Selatan District Health Office received a notification of food poisoning in a prison involving 307 inmates (12.1% male and 5.3% female) with attack rate of 11.4%. Of the 307 inmates interviewed, 98.4% had complaints of diarrhea, fever (73.9%) and abdominal pain (83.1%). Three inmates admitted to nearest hospital for hypotension and dehydration. Of the 25 rectal swab specimens sent to the National Public Health Laboratory for laboratory testing, *Aeromonas* spp. was found in three specimens. In addition, one of the two samples of water supply were tested positive with *Aeromonas* spp. The kitchen rating was 52.9% upon inspection. *Aeromonas* species are known as causative agents of a wide spectrum of diseases. However, studies have shown that some strains have been isolated in association with foodborne outbreaks. Most common route of transmission is consumption of contaminated water and food.

Keywords: *Aeromonas*, outbreaks, foodborne

EOP027

Rotavirus Outbreak in A Hot Spring Recreational Centre in Baling, Kedah, 2017

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An outbreak of rotavirus gastroenteritis was reported to Kedah State Health Department on 3rd February 2017 involving visitors to a hot spring recreational centre in Baling, Kedah. Investigation was performed to determine the extent of the outbreak, to identify the source of the outbreak and to implement control measures to prevent the recurrence of a similar outbreak. A descriptive study was performed on all cases notified during the period of 3rd - 16th February 2017. Stool samples were taken and tested for rotavirus. An environmental investigation pertaining to the water management at the centre was carried out. Water samples were tested for common water quality indicators and for rotavirus using rapid test and PCR method. A total of 86 cases were notified and 75 were analysed after applying exclusion criteria. From 35 stool samples, 21 were positive for rotavirus. Main symptoms reported were diarrhoea (97.3%), fever (82.7%) and vomiting (70.7%). Most of the cases (73.3%) were between 1 - 12 years old. The onset of symptoms in most cases was 2 - 3 days after exposure. The epidemic curve showed a point source outbreak. The most likely period of exposure was 29th - 30th January 2017, which coincided with the Chinese New Year holidays when the centre received a more than threefold increase in visitors. The results of the water samples after pool cleaning were all negative for rotavirus. This outbreak is an example of a recreational water-borne disease outbreak. Measures to reduce the risk of contamination in hot spring pools are recommended.

Keywords: rotavirus, gastroenteritis, outbreak, hot spring

EOP028

Searching for The Source of Infection Outbreak of Typhoid In Segamat, Johor, Malaysia 2018.

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Typhoid fever is a food and waterborne disease, caused by gram negative bacteria, *Salmonella Typhi*. In Malaysia, the incidence rate is below 1 per 100,000 populations but endemic in some areas, particularly in East Malaysia and East Coast of Peninsular Malaysia. There were seven typhoid cases reported in District of Segamat, Johor

between March and May 2018. The outbreak started with a notification received on 12 April 2018 with the onset on 28 March 2018 and the last case reported was on 9 May 2018. The earliest onset was on 25 March 2018. The objectives of the investigations were to identify the source of infection - types of food associated with, the food handlers and premises involved so that proper management and control the outbreak can be done effectively. The main clinical symptoms reported were fever (100%), headache (85.7%), nausea and vomiting (71.4%), diarrhoea (42.9%) and loss of appetite (42.9%). Five of cases were from the same area (Bukit Siput) and three of them were siblings. From the case control study done using questionnaires, it was found that Pasar Malam Bukit Segamat Baru was the most significant food premise, OR=30.00 (CI 2.793-322.090, p=0.001) and nasi kerabu was the main menu that the most significant, OR=14.667 (CI 1.828-117.675, p=0.004). Two of the nasi kerabu food handlers were positive for IgA Typhidot C who was possible as healthy carrier for *Salmonella Typhi*.

Keywords: Typhoid, *Salmonella Typhi*, food premise, food handler, healthy carrier

FAMILY HEALTH

FHOP001

Antepartum Depressive, Anxiety and Comorbid Symptoms Among Men and Women in East and West Coast Of Malaysia: A Cross-Sectional Analysis of a Perinatal Psychiatric Morbidity Cohort Study

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Research investigating antepartum depressive and anxiety symptoms (ADS and AAS) in women and men is lacking in developing countries. This study estimated the prevalence of depressive, anxiety and comorbid symptoms and explored the associated factors in Malaysian pregnant women and their husbands. We used cross-sectional data from a prospective cohort study of 911 women and 587 husbands during their third trimester of pregnancy, from health clinics of two states in east and west coast of Malaysia. The validated Malay version of Edinburgh Postnatal Depression Scale and the anxiety sub-scale of Depression, Anxiety and Stress Scale were used to measure ADS and AAS. Multiple logistic regression analyses identified the determinants of ADS and AAS. Prevalence of ADS was 12.2% in women and 8.4% in men, AAS was 28.8% in women and 13.3% in men, and comorbid symptoms was 8.0% in women and 4.0% in men. Lack of social support, stressful life event, intimate partner violence and poor spousal relationship (women only), depression in earlier pregnancy, living in a rented house and sex preference for the unborn child (men only) were found to be associated with ADS. The determinants for AAS were unemployment, living with parents/in-laws, restrictions during pregnancy and poor

spousal relationship for women, and stressful life event for both women and men. ADS and AAS are prevalent in women and men, and undetected problems in Malaysia. Administration of couple-based screening and referral program during antenatal check-up should be universal practices to identify and treat the psychiatric morbidities.

Keywords: Antepartum, depressive symptoms, anxiety symptoms, women and men, Malaysia

FHOP002

Hydration Status of Postpartum Mothers. Does It Matter?

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Adequate hydration is important for mothers both during pregnancy and the postpartum period. However, sociocultural influences may have deterred them from obtaining adequate fluid intake. This study aims to determine the hydration status of low risk postpartum mothers at different period after delivery. A prospective observational study with face to face interview was conducted at 24-hour, 3 weeks and 6 weeks postpartum. Mothers were given a diary to document their fluid intake and output for 6 weeks. Plasma osmolarity was measured at 24-hour, 3 weeks and 6 weeks postpartum. Of 55 mothers who participated, the mean (SD) age was 28.03 (4.12) years, 90.9% from Malay ethnicity, 49.1% with secondary level of education, 56.4% were working mothers and 65.5% were multipara. Median (min-max) plasma osmolarity at 24-hour postpartum was 288 (277-296) mOsm/L. Further analysis of 19 mothers who completed follow up demonstrated increasing trend of median (min-max) plasma osmolarity value of 296 (289-319) at 3 weeks and 298.18 (290-302) at 6 weeks. Median (min-max) daily fluid intake at 3 weeks and 6 weeks were 1590 (1015-4343) litres and 2312.30 (1067-4593) litres respectively. Repeated measure analysis (N=19) showed significant differences of plasma osmolarity between the three different periods, Wilks Lambda = 0.22, F (2,17) = 29.89, p = <0.001. In conclusion, educating mothers on the importance of maintaining adequate hydration must be highlighted at every postpartum home visit.

Keywords: hydration status, postpartum, plasma osmolarity

FHOP003

Factors Associated with Newly Diagnosed HIV-Positive Among Antenatal Mothers In Prevention Of Mother To Child Transmission (PMTCT) Program In Kelantan

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Vertical transmission is an important mode of HIV transmission in children and without intervention, 30% to 45% of newborns will be infected from their HIV-infected mothers during pregnancy, the delivery of the baby or breast feeding. This study aimed to determine associations between sociodemographic, obstetric history and risks of mothers and husband and newly diagnosed HIV-positive antenatal mothers in Prevention of Mother-to-Child Transmission (PMTCT) program in Kelantan from 2009-2017. Retrospective records review of the PMTCT registry in Kelantan using secondary data was performed. Out of 228 cases that were notified as HIV-positive antenatal mothers, 123 (53.9%) cases were found to be newly diagnosed while 105 (46.1%) were old known cases. Heterosexual were the highest risk behaviour among the antenatal mothers which contributed to 94.3% in newly diagnosed cases, while people with injecting drugs (PWID) contribute the lowest risk group which was 1.6% in newly diagnosed cases of all risk behaviour. The significant associated factors to newly diagnosed HIV-positive among the antenatal mothers were multigravida (Adjusted OR (AOR) 0.142, 95% CI=0.052, 0.384; $p<0.001$) and husband's unknown behaviour (AOR 0.359, 95% CI=0.16, 0.804; $p=0.013$). These findings suggest the need of continuous preventive efforts in preventing HIV infection among mothers or women of reproductive age groups as well as reducing unwanted pregnancies among them. Strengthening HIV prevention efforts among high-risk heterosexual men and husbands are also important towards Elimination of Mother to Child Transmission (EMTCT) in Kelantan and Malaysia as a whole.

Keywords: HIV, antenatal mothers, PMTCT, factors associated, newly diagnosed

FHOP004

Does Knowledge Translate into Postpartum Family Planning Practice?

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Postpartum family planning practice is substantial in preventing complications associated with closely spaced pregnancies especially among those with recent caesarean delivery. Little is known about the level of knowledge among these women and whether knowledge on contraception and reproductive health influenced their postpartum family planning practice. Thus, this study aims to determine the level of knowledge and association between knowledge and

postpartum family planning practice in Kelantan, the state with the lowest contraceptive prevalence in Malaysia. A cross-sectional study using a validated structured questionnaire was conducted in January until April 2018 among women at one year after caesarean delivery in all the tertiary hospitals in Kelantan. The questionnaire consists of 19 items assessing knowledge on various contraceptive methods and reproductive health. Independent t-test was used to compare the difference in mean knowledge score. Among 281 women, the mean (SD) age was 32.1 (5.09), 74% received up to tertiary level education and 61.2% were working women. The mean (SD) for knowledge score was 11.8 (3.83) and 43.4% of them had poor knowledge. The difference between the mean (SD) of knowledge among those who practiced postpartum family planning [12.5 (3.68)] and those who did not practice [10.5 (3.79)] was significant ($p <0.001$, 95% CI -2.88, -1.04). Thus, it is of utmost importance that postpartum women receive contraceptive counselling to enhance their knowledge within the spectrum of care during antenatal, labour and delivery, postnatal and child health care visits.

Keywords: family planning, knowledge, postpartum

FHOP005

Predictors of Postpartum Family Planning Practice Among Women A Year After Caesarean Delivery In Kelantan

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Postpartum family planning practice among women with recent caesarean delivery is essential in preventing complications associated with closely spaced pregnancies. Research evaluating the factors that predict postpartum family planning practice among women with recent caesarean delivery is currently limited. Thus, this study aims to determine the predictors of postpartum family planning practice among women one year post caesarean delivery in Kelantan. A cross-sectional study using a validated structured Malay questionnaire was conducted from January until April 2018 among women who delivered in 2017 in all the tertiary hospitals in Kelantan. The questionnaire consisted of socio-demographic and reproductive details, previous and current contraceptive use, health education received, contraceptive and reproductive health knowledge and social support. Simple and multiple logistic regression analysis were done to determine the predictors of postpartum family planning practice. Out of 281 women, the mean (SD) duration postpartum was 12.4 (0.64) and 187 (66.5%) were practicing modern contraceptive methods. The predictors of postpartum family planning practice were secondary and primary education (AOR= 3.00, 95% CI (1.35, 6.67)), household income (AOR= 1.03, 95% CI (1.01, 1.04)), previous contraceptive use (AOR= 10.92, 95% CI (5.53, 21.55)), knowledge score (AOR= 1.11, 95% CI (1.02, 1.21)) and social support score (AOR= 1.07, 95% CI (1.01, 1.13)). Thus, it is important to include spouses during contraceptive counselling to women in a primary health care setting to enhance postpartum family planning practice.

Keywords: family planning practice, knowledge, support, post caesarean

FHOP006

Determinants of Short Interpregnancy Interval Among Antenatal Mothers Attending Health Clinics In Klang

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Interpregnancy interval is of interest to many in the field of public health because of its effect on maternal and perinatal outcomes. Evidence has shown that short interpregnancy intervals (IPI) significantly cause maternal mortality, premature rupture of membrane, pre-eclampsia, puerperal endometritis, maternal anemia, low birth weight, preterm birth, small for gestational age, perinatal mortality and neonatal mortality. This study was to determine the prevalence of short IPI and its predictors. A cross-sectional study was conducted among 452 antenatal mothers attending health clinics in Klang from 16 April until 27 April 2018. The respondents were randomly selected by applying probability proportional sampling. Data was collected using a validated and reliable self-administered questionnaire that defined the dependent variable to be short IPI and the independent variables to be age; ethnicity; maternal and paternal education and employment status; household income; knowledge, attitude and practice of family planning and IPI; parity; menstrual cycle pattern; history of miscarriage; mental health status; history of physical and sexual abuse; illicit drugs abuse; smoking; nutritional status; sex, survival status, multiple birth and breastfeeding duration of the preceding child; and unplanned pregnancy. We found that among 452 antenatal mothers studied, 48% had short IPIs. There were six predictors of short IPIs which were age group (p-value<0.001), maternal education (p-value=0.003), parity (p-value=0.037), menstrual cycle pattern (p-value=0.002), breastfeeding duration (p-value=0.006) and planning of pregnancy (p-value<0.001). Understanding the magnitude of short IPI and determining its predictors will help medical professionals to plan interventions to mitigate the issue of short IPIs.

Keywords: interpregnancy interval, predictors

FHOP007

Is Interpregnancy Weight Change Associated with Gestational Diabetes Mellitus? A State-Wide Survey of Mothers in Kelantan

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The epidemiology of interpregnancy weight change (IPWC) is unknown in Kelantan. This study aimed to determine IPWC and its association with gestational diabetes mellitus (GDM) among gravida two (G₂) and gravida 3 (G₃) antenatal mothers in Kelantan. A survey with multistage sampling method was used to select 28 government health clinics in the state. Primary data were obtained from 684 G₂, and 480 G₃ antenatal mothers. There were more G₂ mothers had IPWC of 3 or more body mass index (BMI) units as compared to G₃ mothers (27.3% and 24.8% respectively). Whereas more G₃ mothers (11.3%) than G₂ mothers (10.4%) had GDM in their current pregnancy. For G₂ mothers, multivariate analysis showed that IPWC of 3 or more BMI units was significantly associated with GDM (AOR: 2.89, *p*=0.013). Other associated variables with GDM among G₂ mothers were increase in age, employment status (AOR: 0.50, *p*=0.018), being overweight (AOR: 2.56, *p*=0.006) or obese (AOR: 5.49, *p*<0.001) at booking in previous pregnancy, inadequate (AOR: 3.40, *p*=0.002) or excessive gestational weight gain (AOR: 2.72, *p*=0.012) in current pregnancy. For G₃ mothers, aged 30 to 34 (AOR: 4.96, *p*=0.036), obese at booking in current pregnancy (AOR: 2.72, *p*=0.014) and household income of RM3000 or less (AOR: 2.22, *p*=0.032) were significantly associated with GDM. Effective weight management before, during and in between pregnancies are crucial, modifiable factors to reduce the risk of GDM.

Keywords: interpregnancy weight change, Gestational Diabetes Mellitus, Body Mass Index

FHOP008

Knowledge and Attitude Towards Pap Smear: Is It a Lame Issue?

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Cervical cancer is still being an issue of priority in developing countries despite its long-established screening method. Based on Malaysia's national survey, the prevalence of Pap smear uptake in 2011 is only 12.8%. A cross-sectional study using questionnaires among 187 university female staff in Negeri Sembilan was done in 2016 to look for working women's knowledge and attitude towards Pap smear. Their median age was 36.0 ± 8.0 (IQR). Half of them (50.8%) were academician and held

Master/PhD (51.8%) degree of education. Majority are married (97.3%) and have three or less children (64.0%). Concerning their health and family factors, 72.2% have health insurance, 87.2% did not practice modern contraceptive method, and only 39.6% went for annual health check-up. Nonetheless, 65.8% received husband's support for health reason. Majority knew the reasons for Pap smear (90.4%), yet few knew the recommended frequency of it (31.0%). Adequate knowledge and positive attitude was found only among 48.1% and 51.9% of them respectively. Bivariate analysis shows significant association of attitude level with some socio-demographic, health and family factors. However, only husband's support (AOR=2.36, 95%CI=1.09-5.08), and adequate knowledge (AOR=2.29, 95%CI=1.12-4.67) were found to be the predictors of good attitude. Therefore, improving knowledge and getting husband's attention on cervical cancer and Pap smear may play important roles in achieving better attitude of women towards Pap smear, thus increasing the number of women going for the test.

Keywords: Pap smear, attitude, university staff

FHOP009

Age Differences in Women's Perceptions Of Access To Healthcare, Communication With Healthcare Providers And Usefulness Of Health Information Sources.

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Access and benefit from healthcare is a key element in ensuring quality health among women. This study investigated age differences in the perception of access to healthcare, communication with healthcare providers and sources of information influencing health decisions of non-urban women. We conducted a cross-sectional study among 788 women aged between 18 to 60 years in two non-urban areas in Selangor using a self-administered questionnaire between January to May 2018. Data was collected on socio-economic characteristics, difficulties of access to healthcare, communication with healthcare providers and sources of health information that was useful. Age group of women were divided into four categories: 18-25 years, 26-35 years, 36-45 years and 46 years and above. Descriptive and chi-square statistics were used to assess the differences in proportions between age groups. The findings concluded that higher proportion of women aged 18-25 years experienced greater difficulties in accessing healthcare and communicating with healthcare providers, especially when interacting with male doctors. Internet ranked as the top useful source for health information for all women (87.2%), while religious/community groups ranked the lowest (53.4%). A lower proportion of women aged above 46 years found five information sources (internet, healthcare provider, advocacy groups, health campaigns and other health providers) to be useful compared to other age groups. Women in all age groups experience different barriers to accessing healthcare, communicating with healthcare providers and this is also reflective in

how they view the usefulness of health information sources. This finding emphasises the need to develop strategic and targeted health communication interventions.

Keywords: women health, health communication, primary healthcare, barriers in healthcare, Malaysian healthcare

FHOP010

Implementation of Integrated Vaccine System (IVS) At Klinik Kesihatan Kurnia: A Pilot Project

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An integrated vaccine system (IVS) has been developed to address the weaknesses in the existing conventional paper-based method available at outpatient clinics providing childhood vaccination in Malaysia. IVS incorporates the Hospital/Healthcare Information System (HIS) and Telemedicine aspirations. These computer-based patients recording system and data storage are reasonably comprehensive source objectively to facilitate health providers in managing parents and installation of smart phone application to prevent 'delay' in vaccination appointment. We include Malaysia parents, aged 18 years and above, has baby at day 21st of life or below. Parents with medical backgrounds and without smart phones were excluded. This study focused on implementation of IVS at Klinik Kesihatan Kurnia in Kuantan District of Pahang. We collect data at 1 month appointment, includes i) satisfaction survey among participant; ii) category of vaccination status of participant (i.e on-time; or delay). This pilot study recruited 12 participants, majority were Malays, mostly aged more than 30 years. Most of participant satisfied with the mobile apps 'MyKidVAX'. Out of 12 participant, 10 of them were on-time (83%), and 2 participants had delay (17%). We also identified several technical problems during the registration process such as restricted access to internet, participants not bringing smart phones and lack of record from participants that gave birth in private hospitals. Therefore, with some improvements during the registration process will further improve the flow of implementation of IVS to ensure high quality of healthcare and sustainability of childhood vaccination information system.

Keywords: childhood vaccination, database system, integrated vaccine system, primary healthcare

FHOP011

Can Technology Improve Under-Five Childhood Immunization?

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Technology based health intervention has seen an increase in use in multiple health programs. Determining effectiveness of the intervention to improve non-adherence days to the under-five childhood immunization schedule will be beneficial to policy and decision makers. Improving non-adherence days will also ensure that children achieve maximum benefits of the immunization program. A quasi-experimental study was conducted in nurseries in Putrajaya and Cyberjaya from January 2016 to January 2018. The sample size were 196 respondents with Putrajaya as the intervention group and Cyberjaya as the wait-listed control group. The intervention was a technology-based health education module that focussed on components of knowledge, vaccine perception and awareness on under-five childhood immunization schedule. Intervention groups received the intervention through the messaging service of *WhatsApp* at pre-determined intervals. Respondents answered a validated, self-administered questionnaire at baseline, immediately post-intervention and 3 months post-intervention. The mean non-adherence days were 10 at baseline with no significant difference between both groups. The intervention was successful in reducing non-adherence where the intervention group improved to a mean of 3 non-adherence days whereas the control group worsened to 14 non-adherence days. Generalized estimating equations also showed that the intervention was significantly effective ($p<0.001$). The technology-based health intervention module effective in improving non-adherence days. The ability to improve non-adherence will greatly benefit children who receive the under-five childhood immunizations and be an option for policy makers to implement nationwide.

Keywords: Under-Five Childhood Immunization Schedule, Adherence and Technology based Health Education Module.

FHOP012

Vaccine Hesitancy as An Impact Of Urbanization Among Youth In Malaysia: University Students' Perspective As A Future Parent

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Despite of the beneficial impacts of Information, Communication and Technologies (ICT), its urbanization has indirectly raised a serious hesitancy issue against vaccination in Malaysia and worldwide. Information is indeed just right at the fingertips but so are the rumours. The trend of vaccination hesitancy and refusal is snowballing due to the spreading of false information on the internet and social

media. Numerous studies have been conducted to investigate the hesitancy issue among the parents. Instead of focussing on the parents, this exploratory qualitative study investigated the youth perspective in Malaysia as future parents. In-depth interviews were conducted among 33 unmarried students (n=33) from Universiti Malaysia Pahang aged 18-27 years old to study: their knowledge on infectious diseases and vaccination; their perspective on vaccine and hesitancy issue; and their capacity to evaluate information reliability. The transcribed interview data were analysed based on thematic analysis approach. Based on this study, majority of participants do have basic knowledge on infectious diseases and vaccination (with only some misconceptions) and the ability in evaluating information. They also regarded vaccine as required and hesitancy issue as inappropriate. A number of them however, perceived hesitancy issue as individual's personal right. Only one of the participants refuse vaccine due to information and analysis inadequacy prior to vaccination. As future parents, the majority of them were not hesitant with vaccinations.

Keywords: vaccine hesitancy, urbanization, youth, future parents

FHOP013

Factors Associated with Low Birth Weight in Tumpat District In 2017

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Low birth weight (LBW) is a well-known factor associated with neonatal mortality and has contributed to growth impairment and poor cognitive development. This study aimed to determine the prevalence and the factors associated with LBW infants in Tumpat District. A case control study was conducted involving all health clinics in Tumpat. Data were obtained from health clinics and mothers' antenatal cards. All registered deliveries in 2017 were used as sample populations. There were 105 pairs of cases and controls. Cases were selected randomly from all infants delivered with birth weight of less than 2500 grams. Control infants were sampled among infants with birth weight ≥ 2500 gram by matching months of delivery and their registered clinics. The prevalence of LBW in Tumpat in 2017 was 7.41% (95% CI: 6.40, 8.50). Multivariate regression analysis revealed maternal pre-pregnancy BMI and history of LBW infants were significantly associated with having LBW infants. Mother with pre-pregnancy BMI < 18.5 had 3 times the odds to deliver LBW baby compared to mother with normal BMI (adjusted odds ratio (AOR) = 3.27; CI: 1.07, 9.97; p -value=0.037) and mother with history of LBW infants had twice the odds to deliver LBW infants compared to mother without similar history (AOR= 2.3; CI: 1.13, 4.71; p -value=0.022). Low maternal pre-pregnancy BMI and history of LBW infants were factors associated LBW infants in Tumpat. The importance of pre-pregnancy screening, early antenatal booking and identification of high risk mothers must be strengthened in order to reduce the incidence of LBW infants.

Keywords: Low birth weight, pre-pregnancy body mass index

FHOP014

Impact of Growing Up Milk (GUM) Advertisement On Choice Of Infant Feeding: The Need To Include GUM In The Code Of Marketing Of Breastmilk Substitutes.

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The objective of this study was to determine whether mothers could differentiate advertisement on Growing Up Milk (GUM) from other types of formula milk and whether marketing of GUM in mass media influenced a mother's choice of feeding. An interviewer-based questionnaire was constructed and targeted at mothers attending the maternal child health clinics in Alor Gajah, Kuala Langat, Serdang, Klang, Kuala Lumpur in Malaysia (n=106) and Singapore (n=202) for the period of March and October 2017. Systematic random sampling of breastfeeding mothers with children below the age of 5-years was conducted to obtain the samples for this study. Verbal consent was taken before commencement of the study. The results showed mean age of mothers was 32 ± 4.6 years, mean age of babies was 2.1 ± 1.0 years, 89.8% of mothers had tertiary education and the rest secondary education (10.2%). The Cronbach Alpha value for negative oriented questions was 0.77 and for positive oriented questions was 0.67. It was found that 90.6% of mothers were able to recall the brand name of the formula after being exposed to the picture for 10 seconds. The words "Mama's Milk" was seen by a higher percentage of mothers compared to the numbers 1,2 and 3&4 which suggest a link of mothers milk to infant and GUM. Paradoxically though the majority of mothers thought they could differentiate the advertisement for infant formula and GUM, the only thing that attracted them to the paper advertisement was the brand name and many could not recall what type of milk being advertised.

Keywords: Growing Up Milk, Marketing, Infant Feeding

FHOP015

Are Parents Confident in Encouraging Their Children To Practise Healthy Lifestyle?

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Parents play an essential role in nurturing healthy lifestyle in their children. However, do parents have adequate self-efficacy in encouraging their children to practise good eating habits and physical activity? A study was conducted to examine parents' self-efficacy using modified Parent Efficacy for Child Healthy Weight Behaviour Scale (PECHWB). The results of this study were baseline results of an intervention study to improve children's adiposity conducted in five primary schools in Bandar Baru Bangi, Selangor. A total of 134 parents-child dyads participated in this study. The children were either overweight or obese aged between 7-10 years old. Parents were asked to rate their self-efficacy on facilitating children to eat 2 or more servings of fruits, eat 3 or more servings of vegetables, eat healthy snacks, minimize fat and sugar intake, engage in at least 30 minutes of physical activity and engage in no more than 2 hours of screen time/day. Scoring was based on 1 to 5 Likert scale (1 = 'not at all confident', 2 = 'not confident', 3 = 'moderately confident', 4 = 'confident' and 5 = 'extremely confident'). Results showed that parents were 'not confident' on all the items assessed except for self-efficacy on supporting children on no more than 2 hours of screen time/day, where parents were 'moderately confident'. Public health physicians need to strategize on improving parents' self-efficacy in supporting children to practise healthy lifestyle in order to combat the increasing prevalence of childhood obesity.

Keywords: parents' self-efficacy, eating habits, physical activity, children healthy lifestyle

FHOP016

A Case Report on Acquired Syphilis In Child: How It Started

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Syphilis among children is still considered as a worldwide public health concern. Most of the syphilis cases among children reported are due to congenital syphilis. Acquired syphilis in children are almost exclusively caused by sexual transmission from sexual abuse from an infected adult. The diagnosis of acquired syphilis in children is difficult because of the stigma of sexual abuse in children, contributing to the late diagnosis and treatment on the affected children. Here, we report a case of acquired syphilis in a child which led to a discovery of several cases of sexual child abuse. We also did a trace back investigation of the possible sexual contact of the source of this syphilis case. It started with an admission to a hospital for

constipation and anal fissures that lead to a reactive TPHA test. Detailed history revealed a possible sexual abuse by the child's uncle who was diagnosed with HIV eight months prior to the child's admission. This case is still under police investigations and few more children were also suspected to be sexually abused where a 17-year-old boy was tested positive for syphilis and gave similar history that lead to the child's uncle. Author's interview with the child's uncle revealed multiple sexual contacts with either heterosexual or homosexual individuals through social media sites. This case report showed the importance of sexual transmitted diseases prevention among those already diagnosed and the needs to increase awareness among the high-risk groups.

Keywords: Child syphilis, sexual abuse, high risk groups

FHOP017

Process Evaluation of a Complex Intervention for Primary Healthcare In Malaysia

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A complex intervention package named Enhanced Primary Healthcare (EnPHC) was implemented in selected primary healthcare clinics since July 2017. EnPHC consisted of (1) physical interventions (e.g. deployment of triage counters, service zoning in the clinic), (2) systemic interventions (e.g. introduction of triaging system within clinics, introduction of the care coordinator role, new NCD screening and NCD risk management mechanisms, new referral workflow within clinic, new referral workflow between clinic and hospitals), and (3) expansion of existing services (e.g. deployment of Family Health Teams as an upgrade to the Family Doctor Concept, cardiovascular care counselling replacing diabetes counselling under the Medication Therapy Adherence Counselling (MTAC) service in clinic pharmacies, upgrading the use and function of clinic attendance registry). A process evaluation study was executed in parallel to assess the fidelity and feasibility of EnPHC's implementation. The formative mixed method study was conducted in twenty clinics across two states in Malaysia using self-report implementation status form, structured observation checklist and in-depth interviews with the healthcare providers. After two months of implementation, variations in practices were noted across all intervention packages. The common challenges evaluated were space limitation (primary triage counter), lack of manpower and workload (care coordinator), network and communication barrier (internal and external referral system). Since continuous improvement and adjustment are part of the implementation process, the findings were presented to the EnPHC developer and ground implementers for them to address the gaps in practices. This is to ensure EnPHC is implemented with a high level of fidelity across various clinic settings.

Keywords: primary healthcare, complex intervention, process evaluation, fidelity, feasibility

FHOP018

A Protocol on The Malaysian National Health and Morbidity Survey (NHMS) 2018: Elderly Health

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The NHMS 2018 (Elderly Health) is the first ever nationwide survey in Malaysia which aims to determine the health status of community dwelling elderly. It will be conducted from July to September 2018, targeting 7,084 older adults aged ≥ 60 years and pre-elderly aged 50-59 years. Two-stage stratified random sampling by age group and locality will ensure national representativeness. These respondents shall be randomly selected from a sampling frame drawn up based on listing activities conducted prior to the survey. Trained enumerators shall interview respondents via face-to-face interview with a structured validated questionnaire using mobile devices across all states in Malaysia. In line with healthy ageing advocated by the World Health Organization, the survey scope shall include health care accessibility, social support, quality of life, elder abuse, dementia screening, besides living arrangements, chronic diseases, functional limitation, risk of falls, nutritional status and oral health, among others. Field officers will monitor the activities closely with cooperation from the various state liaison officers. Referrals to the nearest primary health centre shall be provided to those necessary for further evaluation and social welfare aid. Data collected will be transferred to the central server prior to data cleaning and analysis. Various outcomes reported shall be reflected in the technical report made available to all stakeholders besides presentation to the Ministry of Health's steering committee. This will help the Ministry of Health in planning and administering better health care delivery, besides promotive and preventive strategies towards achieving successful ageing in Malaysia.

Keywords: National Health and Morbidity Survey, Malaysia, elderly, ageing, health status

FHOP019

Social Support Measurements and Its Application Among Community-Dwelling Elderly.

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Social support has been known to be significantly associated with depression among the elderly. However, there is no gold standard measurement for social support. A systematic review on social support and depression among community dwelling

elderly was conducted to look at the different social support measurements used in Asia. About 24 studies were included in the review. Results showed that the most frequent measurements were type of support (14 studies), perceived social support (12 studies), frequency of contact (12 studies), and living arrangement (11 studies). Other measurements were size of network, sources of social support, confidant, satisfaction of social support, marital status, providing support, and social isolation. Most of studies (17 studies) have more than one measure of social support. The heterogeneity of these measurements makes it difficult for analysis. Therefore, these measures can be organised into two frameworks; structural and functional, or perceived and received social support. Consequently, the impact of certain social support on depression can be attained more easily. These frameworks will assist in identifying research gaps and be applied to screening potential risks for depression among community-dwelling elderly.

Keywords: social support, measurement, depression, elderly.

FHOP020

Multimorbidity in Older Adults: More Than Just Chronic Illness

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Multimorbidity among older adults have been reported to be high and is defined as the presence of at least two chronic conditions, which can include illnesses, geriatric syndromes, risk factors or somatic factors. In a cross-sectional analysis of baseline data relating to a cohort of 2324 older adults aged 60 years and above in Kuala Pilah, Negeri Sembilan, multimorbidity was defined by a list of 18 self-reported conditions. The aim of this analysis was to estimate the prevalence of multimorbidity and its associated factors. Results (unweighted) show that 95.01% of the older adults reported presence of at least one chronic condition, and 82.19% reported two or more. The degree of multimorbidity ranged between 2-13 chronic conditions. The top three most prevalent discrete conditions were hypertension (52.84%), cognitive impairment (43.07%), and visual impairment (39.37%). Multimorbidity was further sub-categorized into three types: multiple non-communicable illnesses only (46.90%; 54.43% when mental illness included), geriatric syndromes (35.28%), and risk or somatic factors (8.48%). Factors significantly associated with overall multimorbidity were age, and socio-economic characteristics ($p<0.05$). This analysis shows that multimorbidity among older adults pertain to more than just diagnosis of physical illness; geriatric syndromes and risk or somatic factors are also conditions that they live with. Consequently, addressing the health needs of older adults should consider the presence of all these conditions, and move beyond only focusing on diagnosing and managing chronic illnesses.

Keywords: multimorbidity, older adults, non-communicable disease

FHOP021

Pattern of Frailty Phenotypes: Differences Between Gender

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The demographic transition towards ageing population possesses a real challenge due to its association with the development of adverse outcomes. Parallel with this scenario, special attention has been given to frailty as an important geriatric syndrome affecting the older population. Using modified Fried phenotypes, our study reported significance gender differences according to frailty status. Women had a higher prevalence in both frail (15.5% in women; 9.3% in men) and pre-frail state (48.9% in women; 41.8% in men) whilst majority of men were in the robust group (48.8%) compared to only 35.4% among women. Based on the five Fried frailty phenotypes (presence of weight loss, exhaustion, low physical activity, weakness, and slowness), women reported higher prevalence in all frailty components except for weight loss. Statistical differences were observed between men and women in low physical activity, weakness, slowness phenotypes ($p<0.05$). In conclusion, our study noted that women have a higher risk of being frail than men. As women reported higher life expectancy than men, therefore, special attention is required to address women's vulnerability in view frailty may affect the quality of life. This includes the need to address gender differences in strategies for frailty prevention.

Keywords: Frailty, older adults, gender

FHOP022

Review of Elderly Club Program in Klinik Kesihatan Sanggang

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The population has remarkably shifted towards longer life expectancy because of declining in the number of major mortality causes. Despite that, there are some major challenges that are related to elderly needs and fragility. Malaysia as a growing and developing country is not an exception. In Sanggang district, the total population is 11000 people in 2017 and 10% of the population is elderly people. Ever since 2002, Elderly Club Program was established in this community to cater to the aging population. This topic is a review of this Elderly Club Program and it has been done from observation, recorded and written data together with discussion done

with elderly club members and committee. In conclusion, we have found that this program has well organized and structured activities which suit the elderly needs; physically, emotionally and spiritually.

Keywords: elderly, elderly program, aging

ENVIRONMENTAL AND OCCUPATIONAL HEALTH

EOHOP001

Prevalence of Noise Induced Hearing Loss and Its Associated Factors Among Manufacturing Industry Workers

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Noise Induced Hearing Loss (NIHL) is a major industrial disease burden worldwide. Malaysia, a developing country faces similar issues related to occupational noise hazards. According to the Department of Occupational Safety and Health Malaysia, in 2016, out of the 3860 occupational diseases investigated, 2876 were due to occupational noise. This was a cross sectional study, aimed at determining the prevalence of NIHL and its association with workers sociodemographic profile and job characteristics on noise hazard. Eight factories from various type of manufacturing industries were chosen and 305 workers from these factories participated in this study. The respondents filled up a questionnaire and underwent audiometric testing. Noise monitoring reports were used to identify noise exposure level. The prevalence of NIHL and Hearing Impairment were 18% and 46.2% respectively. Two factors were identified to be significantly associated with NIHL. They were male gender (p-value 0.010; OR 2.849; 95% CI 1.288 , 6.299) and duration of employment of more than 20 years (p-value 0.032; OR 3.997; 95% CI 1.123 ± 14.221). Although there are Hearing Conservation Program (HCP) implemented in all the factories involved in this study, continuous monitoring and training are needed to ensure compliance to HCP to prevent NIHL among their employees.

Keywords: noise hazard, prevalence, noise induced hearing loss, hearing impairment, manufacturing industry

EOHOP002

Predictors of Occupational Noise Induced Hearing Loss Among Royal Malaysian Air Force Transport Aircraft Acrews

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Acrews are the most valuable asset for the Royal Malaysian Air Force (RMAF). Studies revealed that occupational noise-induced hearing loss (NIHL) in military aviation is higher compared to normal population. This study aimed to determine the predictive factors of NIHL among RMAF acrews. A cross-sectional study was conducted and respondents were selected based on systematic random sampling. The sample size was calculated using two proportion sample size formula. Instruments used include a set of questionnaires and a pure tone audiometer. Data were analysed using univariate and bivariate analysis. There were 256 respondents with the response rate of 92.1%. The prevalence of NIHL among RMAF acrews was 11.9%. Acrews with deranged audiograms had significantly longer noise-exposure duration (15.8 ± 7.6 years) as compared to those with normal audiograms (9.4 ± 6.0 years; $t = 4.69$, $P < 0.01$). Acrews using at least one of the protection devices had a significantly higher level of hearing thresholds than those using combined protection devices ($P < 0.05$). The logistic regression analysis indicated that the use of hearing protection devices ($OR=7.39$, $CI =6.34;12.62$, $P<0.001$), and duration of noise exposure ($OR=3.35$, $CI=4.21;11.77$, $P=0.035$) were significant predictors of NIHL. The use of hearing protection devices and duration of noise exposure have been the predictors of NIHL among the acrews. Regular monitoring of noise levels and hearing status evaluation are of great importance as part of effective hearing conservation programs.

Keywords: Predictors; Occupational Noise; Hearing Loss; Transport Aircrafts; RMAF Acrews.

EOHOP003

Prevalence of Hand-Arm Vibration Syndrome (HAVS) Among Tyre Shop Workers in Kota Bharu, Kelantan

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Prolonged exposure to vibration is associated with the occurrence of symptoms and signs of upper limb disorders called hand-arm vibration syndrome (HAVS). The objectives of this study were to determine the prevalence and severity of HAVS among tyre shop workers in Kota Bharu, Kelantan. A cross-sectional study involving

100 tyre shop workers in Kota Bharu, Kelantan was conducted. Data were collected in 2 parts, part one involved interviewing workers using Malay Translated HAVS questionnaire and measurement of hand-arm vibration using Human Vibration Meter (Larson Davis HVM 100). Part two involved a set of hand clinical examinations (Purdue pegboard, Semmes-Weinstein Monofilaments, and Two-point Discrimination tests). The workers were divided into high ($\geq 5\text{ms}^{-2}$) and low/moderate ($< 5\text{ms}^{-2}$) exposure group according to their 8hr time-weighted average [A(8)] of vibration exposure. The prevalence of vascular, neurological and musculoskeletal symptoms was 16%, 47%, and 51% respectively. There were significant differences in finger tingling (6.25% vs 48.08%), finger numbness (25% vs 48.08%), finger coldness(2.08% vs 28.85%), hand grip weakness(0% vs 9.61%), abnormal dexterity(18.75% vs 38.46%), abnormal light touch sensation(10.42% vs 48.08%) and abnormal two-point discrimination(4.17% vs 26.92%) between the 2 exposed groups. Therefore, there is a need for better control of vibration exposure, monitoring, and reporting of HAVS among workers exposed to hand-arm vibration in Malaysia.

Keywords: Hand-Arm Vibration; Hand-Arm Vibration Syndrome, Tyre Shop Workers

EOHOP004

Prevention of Work Related Upper Limb Musculoskeletal Disorders: A Cluster Randomised Controlled Trial on Active Ergonomic Training

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Work-related upper limb musculoskeletal disorders (WRULD) are an important concern among working population as it leads to significant compensation, healthcare cost, reduced productivity and reduced quality of life of workers. This study aimed at assessing the effectiveness of active ergonomic training and workstation adjustment in reducing WRULD and pain/discomfort among computer users. A two-arm cluster randomised controlled trial was implemented with intervention group given active ergonomic training packages while the control group was provided with basic occupational health talk. Eight of the twenty-six faculties, institutes, centres and academies in University of Malaya were randomly selected to be included in the study. Twenty-five office workers from each cluster that fulfilled the inclusion and exclusion criteria were randomly selected as participants. The duration of the study was 12 months with data collection at baseline, 6-month, and 12-month points. The results showed that there were increased odds for participants in the control group to be diagnosed with WRULD at twelfth month compared to those in the intervention group (OR: 2.05; 95% CI: 1.05, 3.97). However, there was no significant difference in the incidence of WRULD between control and intervention group when time interaction was included. Nevertheless, the intervention groups showed a reduction in the pain scores of the neck, shoulder, elbow, and hand after twelve months. This study shows that active ergonomic training intervention could help in reducing upper limb musculoskeletal symptoms

but could not prevent the incidence of WRULD among office computer users after twelve months period.

Keywords: Active Ergonomic Training, Intervention, Cluster Randomised Controlled Trial

EOHOP005

Pattern of Combat Trauma Injury: Lahad Datu Incursion (Operation Daulat)

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Forward Surgical Team (FST) was mobilised into conflict area in March 2013 to support Operation DAULAT where the incursion of militants into Malaysia's territory has occurred. Malaysian Armed Forces (MAF) has not had any involvement in an internal conflict since the communist era. Thus, exposure and knowledge regarding combat trauma injury are limited. The objective of this paper is to determine the pattern of combat trauma injury during this conflict. During the duration of the operation, FST received a total of 33 cases. 26 (79%) cases involved security forces personnel (age: 21-39, mean 25), which were all males, while the rest were civilians. From the 26 cases, 18 (69%) were combat injuries and the remaining 8 (31%) were non-battle injuries (NBI). Among the combat injury cases received were 17 wounded in action (WIA) and 1 was killed in action (KIA). 67% resulted from penetrating mechanism (gunshot injuries 56% and blast injuries 11%) while 33% from non-penetrating mechanism (all were blunt injuries). The distribution of injury was as follows: head/neck 28%, torso 5% and extremities 67%. Therefore, there was a significantly higher proportion of combat injuries involving extremities as compared to other distributions, mainly resulting from penetrating mechanism whereby gunshot contributed most to the injuries as compared to explosive

Keywords: knowledge, combat injury, extremities, penetrating mechanism

EOHOP006

Hypoxia Indoctrination Training: Malaysian Armed Forces Experience

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Hypoxia Indoctrination Training (HIT) initially conducted at Institute of Aviation Medicine (IAM) Kuala Lumpur Air Base since 1978 using the only hypobaric chamber available in Malaysia. A Vacudyne Altair chamber was procured in 1976 and commissioned in 1978 for the HIT in Royal Malaysian Air Force (RMAF). HIT is the preventive measure for aircrew with its' main objective for aircrew to recognise

symptoms and signs of hypoxia at high altitude. A cross-sectional descriptive survey was evaluated using the feedbacks form filled by trainees who received the training from 2016 to 2017. In the fix wing profile, the trainees were exposed to 25,000 feet without oxygen supplement for 5 minutes meanwhile in the rotary wing profile the trainees were exposed to 14,000 feet for 35 min without oxygen. There was 517 personnel trained. Among them, 448 were military aircrews and 69 were non-aircrew. 445 personnel (86.1%) undergo fix wing profile and 72 (13.9 %) undergo rotary wing profile. There was one case (0.19%) of Decompression Illness (DCI) reported that required oxygen therapy using hyperbaric chamber and 5 cases (0.97%) developed otitis barotrauma. Majority of the trainees (94.6%) were able to recognise their own symptoms of hypoxia and 57.5% of them complained of dizziness as their first hypoxia symptom. Overall the training has more benefit compared to the risk and the survey demonstrated that 91.1% of the trainees rated their level of satisfaction with the training as "very good".

Keywords: Hypoxia, hypobaric, aircrew

EOHOP007

Do Social Cognitive Factors Predict Leisure Time Physical Activity Among Health Workers?

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Leisure time physical activity lowers the risk of cardiovascular and all-cause mortality. Health workers are role models. However, a substantial proportion of them is physically inactive. Social cognitive factors namely goal setting, barriers, self-efficacy, friends' support and outcome expectation greatly influence the behaviour. This study aimed to determine social cognitive predictors of leisure time physical activity among health workers. The cross-sectional study was carried out from April to July 2017 among 310 health workers recruited by simple random sampling from a district. Data collection was done by using a pre-tested, structured self-administered questionnaire. The median age of respondents was 33 years (IQR=9), with the median body mass index of 24kg/m² (IQR=6). The majority of respondents were females (71%), Malay (78%), married (77%), and supporting staffs (76%). The median time spent in leisure time physical activity was 17 minutes per day (IQR=25). Hierarchical multiple linear regression analysis showed that the goal setting (β =0.18, p =0.003), barriers (β =-0.15, p =0.008), self-efficacy (β =0.17, p =0.003), friends' support (β =0.14, p =0.016), outcome expectation (β =0.13, p =0.024) and male (β =0.14, p =0.007) explained 25% of variance in leisure time physical activity (r^2 =0.25, adjusted r^2 =0.23, $F(6,303)=16.69$, p <0.001). Goal setting was the strongest predictor. The findings can be used to guide the development of interventions to encourage more leisure time physical activity among health workers, with the emphasis on improving goal setting skills, self-

efficacy, friends' support, outcome expectation, and removing the associated barriers.

Keywords: health workers, leisure time physical activity, social cognitive factors

EOHOP008

Tuberculosis Incidence, Treatment Outcomes and Factors Associated with Mortality among Healthcare Workers in Malaysia

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Tuberculosis (TB) is an occupational disease and remains a public health problem. This study aims to determine TB incidence, all-cause mortality and its associated factors among healthcare workers (HCWs) registered in 2012-2014 with the Malaysian National Tuberculosis (MyTB) Surveillance Registry. Regression analysis was used to determine factors associated with all-cause mortality. Incidence rates ranged from 135.18-156.50/ 100,000 and were higher for HCWs compared to the general population (RR: 1.70 to 1.96). The mean age was 34.6 ± 10.55 years; 68.9% were female. Most were paramedics (44.3%) followed by other HCWs (41.9%) and doctors (13.8%). Nearly a quarter (23.8%) had extra pulmonary TB. There were 23 deaths giving a case fatality rate of 2.4%. Factors associated with death were older age (OR: 1.05; CI: 1.01-1.10), diabetes (OR: 3.83; CI: 1.32-11.08), HIV positivity (OR: 18.16; CI: 4.60-71.68) and not receiving Directly Observed Therapy (DOTS) (OR: 10.97; CI: 3.61- 33.38). It is important for HCWs to be aware of these increased risks.

Keywords: healthcare workers, Malaysia, mortality, risk factors, tuberculosis

HEALTH MANAGEMENT

HMOP001

An Evaluation Study to Compare Time of Endoscopy and Outcome In Gastric Cancer Detection Between Open Access Endoscopy And Conventional Referral Endoscopy In Hospital Tuanku Jaafar Seremban

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Gastric cancer is a huge public health burden. Delay in diagnostic endoscopy procedure causes further delay in gastric cancer diagnosis. Open access endoscopy

is a direct referral system from general practitioner for endoscopy without prior specialist consultation. This study aims to compare time of endoscopy and outcome in gastric cancer detection between open access endoscopy (OAE) and conventional referral endoscopy (CRE) in Hospital Tuanku Jaafar Seremban. A retrospective cross-sectional study was conducted from January to December 2016. A total of 227 patients were included into the study. Time of endoscopy was defined as the average time taken from the patient's first visit to primary health care centre until endoscopy was done. For CRE group, the time of endoscopy was 84.5 days, while for OAE group, the time of endoscopy was 32.8 days. The time of endoscopy in OAE was significantly shorter as compared to CRE (p value <0.005). Outcome of endoscopy was defined as endoscopic findings, which can be categorized into cancer and not cancer, based on histopathology findings. In CRE group, there was one patient detected to have gastric cancer, as compared to in OAE group, there were two patients detected to have gastric cancer. However, there was no significant difference in the outcome of endoscopy between CRE and OAE group (p value 0.137). In conclusion, OAE is an effective referral system which allows a significant shorter time of gastric cancer detection with similar outcome.

Keywords: open access endoscopy, conventional referral endoscopy, gastric cancer detection

HMOP002

Assessing Predictors of Intention to Prescribe Sick Leave Among Primary Care Physicians Using the Theory of Planned Behaviour

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Providing sickness certification is a decision that primary care physicians make daily. This study utilized the Theory of Planned Behaviour (TPB) to specifically gauge the intention and other salient predictors related to sickness certification prescribing behaviour amongst primary care physicians. A cross-sectional study conducted among 271 primary care physicians from 86 primary care practices in two states in Malaysia. Questionnaires used were specifically developed based on the TPB, consisting of both direct and indirect measures related to the provision of sick leave. Questionnaire validity was established through factor analysis and the determination of internal consistency between theoretically related constructs. Structural equation modelling was conducted to determine the strength of predictors related to intentions. The mean scores for intention to provide patients with sick leaves were low. The Cronbach α value for the direct measures was good: intention to =0.77, the attitude of physician=0.77, the attitude in trusting the intention of patients=0.83. Attitudes and subjective norms were identified as important predictors for physician intention to provide sick leave to patients. An integrated behavioural model utilizing the TPB could helpfully explain the complex act of providing sick leave to patients. Findings from this study could assist relevant agencies to facilitate the creation of policies that may help regulate the provision

of sick leave and alleviate the work burden of sickness leave tasks faced by physicians in Malaysia.

Keywords: Theory of planned behaviour, Sick leave prescribing, Intention, Primary care physicians

HMOP003

Domiciliary Health Care Services (DHCS) In Klang District: Factors Affecting Functional Outcomes of The Bedridden Patients

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In view of the escalating prevalence of stroke and other related diseases, the DHCS was introduced in Klang District since 2014. This study aimed to assess the effectiveness of this health care model as measured by overall functional outcomes and its' related factors among stable bedridden patients registered for DHCS in Klang District. A retrospective cohort study was conducted on all patients registered for DHCS in the 7 primary care clinics in Klang District from July 2014 to September 2017. We analyzed the functional outcomes of these patients at baseline (upon enrollment) and at the end of the 3-months program (prior to discharge) by using Modified Barthel Index (MBI). A total of 94 subjects had completed the program. Of these, 56 (59.6%) were male, 38 (40.4%) were female with the mean age of 60.3 ± 19.5 years. A total of 45 (47.9%) had improvement in MBI score. There was a significant improvement of MBI score from the mean of 8.2 (baseline) to 15.3 (prior to discharge) with $p < 0.001$. By using multiple logistic regression analysis, factors associated with significant MBI score improvement were patient's motivation, ability to speak and absence of bedsore during enrollment. In conclusion, it is evidence that the comprehensive DHCS is an effective and efficient health care model to improve the functional status of the stable bedridden patients in the community. Thus, this program should be strengthened to improve the overall quality of care of these vulnerable groups in the community.

Keywords: bedridden, domiciliary care, functional outcomes

HMOP004

Getting It Right on The Facts of Death: Initial Achievements and Challenges of The Implementation Of Verbal Autopsy In Malaysia

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Accurate mortality data is crucial for policy and programme development. In 2017, Ministry of Health (MOH) initiated a system called “Verification of Non-Medically Certified Death Data in Malaysia” to improve mortality statistics in the country. The system utilises the verbal autopsy methodology developed by the World Health Organization to verify the cause of death. This review aims to examine the achievements of the system since its initiation, with focus on the proportion of cases that failed to be medically certified, reasons for these failures and challenges faced by healthcare providers in the implementation. A secondary analysis of returns data from the Non-Communicable Disease Section and Health Informatics Centre of MOH was conducted. A feedback survey form was sent to healthcare providers (HCPs) to identify challenges faced during the implementation process. These feedbacks were then fitted into a matrix and common themes were derived. From 1st October till 31st December 2017, a total of 23,415 of non-medically certified deaths were notified by the National Registration Department. Of these, approximately 43% of the cases were successfully medically certified. Unsuccessful cases were mostly due to untraceable, wrong or incomplete home addresses, refusal of next of kin to be interviewed and others were due to undetermined causes of death. The main factors associated with failure to medically certify deaths could be broadly categorized into socio-cultural, legal, ethical and administrative. Understanding these challenges is important to enable MOH and other stakeholders to innovate solutions to further strengthen the system.

Keywords: Verbal Autopsy, Malaysia, Mortality, Challenges, Cause of Death

HMOP005

Coordination Challenges in Humanitarian Assistance And Disaster Relief (HADR) Operation

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Humanitarian Assistance and Disaster Relief (HADR) is a dominant issue implemented as one of the doctrinal operation by most military forces and governments around the globe where disaster, either man-made or natural, orchestrates promulgating effects to human and society. The main concern involving HADR operation is the immediate medical respond; either the question lies on the fast reaction of medical response to counter the situation, or slow medical response resulting in an

unexpected number of casualties. Thus, HADR requires inter-agencies cooperation and coordination under National Security Council to work under one command. This, however, considers the challenges in coordination between agencies as an issue. This study tends to use the analytical and critical methodology using constructivist approach in the management of HADR. It is believed that anarchy state is more focused on it in terms of social construction where individual and human socially interact with each other. The approach is proved by Threat-Rigidity Cycle which analyses the rigidity in response to stopping the threats cycled. The result is to establish one command centre to have the operational control especially on material and logistical assets involve in HADR operation. Therefore, it shows that HADR has a strong relation to the combined effects of government plans where the issue can become a major concern to international politics.

Keywords: HADR, coordination challenges, medical response, preventive measures

HMOP006

Public Health Enforcement Challenges: A Case Study in The Control of Tobacco Product Regulations 2004

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Towards globalization and economic advances, the country faces new challenges every day to preserve the nation's health. Public health enforcement is a key to protect the public and the environment. The Regulations of Tobacco Control 2004 (RTC 2004) under the Food Act 1983, where the main objective to control the tobacco product and protect the public from harm of its product. In 2015, Seremban District Health Department has detected a violation under this regulation by one of the leading tobacco company in the country. The health department set up a team to early bits of intelligence regarding the violation. On 9th October 2015, two team comprises six health inspectors had raided a local 24-hours convenience store. They manage to seal two boxes of the tobacco product, 11 related documents, and four oral statements taken from the raids. Further investigation comprises of three officers led them to the product manufacturer in Selangor. Subsequently, they approached the Chemistry Department and Percetakan Nasional Berhad to assist them in the investigation. All the evidence collected enable the team to charge the offenders under Regulation 8A (5A) RTC 2004 which resulted in the conviction of RM 2000 fine. Preliminary investigation indicates that there were two charges but unfortunately, there was no legally appointed agencies or entities that can establish the violation, which resulted in a single conviction. Establishment of legal binding agencies can play vital roles in public health enforcement to justify the violation in the terms of the court of law.

Keywords: public health, enforcement, law, tobacco control, regulations

HEALTH PROMOTION

HPOP001

Reliability of The Bahasa Malaysia Version of Patient Education Materials Assessment Tool

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The Patient Education Materials Assessment Tool (PEMAT) is an instrument to evaluate the understandability and actionability of patient education materials (PEMs). It has two versions: PEMAT-P for printable materials and PEMAT-A/V for audio-visual materials. The study aim was to determine intra-rater (test-retest) and inter-rater reliability of the Bahasa Malaysia version of PEMAT, translated and adapted according to an established guideline, designated as PEMAT-P(M) and PEMAT-A/V(M) using intraclass correlation coefficient (ICC). Nine healthcare workers from various health disciplines involved in the provision of patient education at the Ministry of Health facilities were recruited to evaluate 13 printable PEMs and 13 audio-visual PEMs using PEMAT-P(M) and PEMAT-A/V(M) respectively. The evaluation was repeated after two weeks. In general, inter-rater reliability was good for PEMAT-P(M) and was good to excellent for PEMAT-A/V(M). Both PEMAT-P(M) and PEMAT-A/V(M) demonstrated good to excellent test-retest reliability. For PEMAT-P(M), ICCs for inter-rater reliability were 0.744 (95% CI: 0.573-0.893) and 0.679 (95% CI: 0.491-0.860) for understandability and actionability domain respectively. ICCs for test-retest reliability ranged between 0.708 and 0.952 for understandability domain, and between 0.728 and 1.000 for actionability domain. For PEMAT-A/V(M), ICCs for inter-rater reliability were 0.791 (95% CI: 0.635-0.915) and 0.733 (95% CI: 0.559-0.887) for understandability and actionability domain respectively. ICCs for test-retest reliability ranged between 0.816 and 0.975 for understandability domain, and between 0.659 and 0.937 for actionability domain. In conclusion, the Bahasa Malaysia version of PEMAT is a reliable instrument for measuring understandability and actionability of PEMs developed in Bahasa Malaysia.

Keywords: psychometrics, patient education, Malaysia

HPOP002

Using Social Media to Educate Parents with Obese Children

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A randomised controlled field trial was conducted to evaluate the effectiveness of a newly developed family-based intervention, using social media with face-to-face

session aimed at reducing Malay children's adiposity (BMI z-scores, waist circumference percentile, and percentage body fat) among overweight and obese primary school children. The trial involved 134 parent-child dyads from five schools in an urban district in Selangor. All eligible parents were randomly allocated to the intervention group or the wait-list control group. The intervention used social cognitive theory to reorganise diet, uncontrolled screen time and exercise. The intervention was a four-week training programme delivered weekly via face-to-face and Facebook; and a three-month booster delivered via WhatsApp. Data were collected at baseline, immediately post-training, and at three- and six-months post-training and analysed using generalised linear mixed models with covariates, implemented in SPSS version 22. Results showed that the intervention group had significantly reduced BMI z-scores compared to the wait-list group for all children ($F(6, 517) = 2.817, p = 0.010$) and obese subgroup ($F(6, 297) = 6.072, p <0.001$). Waist circumference percentile was significantly reduced in the intervention group compared to the wait-list group for obese subgroup ($F(6, 297) = 3.998, p = 0.001$). The percentage of total body fat was significantly reduced compared to the wait-list group ($F(6, 201) = 2.526, p = 0.022$) for overweight subgroup. These results indicate the effectiveness of the intervention programme. Further research including cost effectiveness study needs to be conducted before implementing it in a child obesity prevention programme.

Keywords: Childhood obesity, family-based intervention, social media, BMI z-score, waist circumference percentile.

HPOP003

Oral Health Knowledge, Attitude Toward Oral Health Care and Dental Referral Practice Among Family Medicine Specialists In Malaysia

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Integration of oral health care into primary care has been recommended as a means for improving the oral health care of patients. Being the leader of a primary care team, Family Medicine Specialists (FMS) are in a good position to help deliver key oral health messages to patients and to refer patients who are in need of oral care to dentists. This cross-sectional study aimed to assess oral health knowledge, attitude toward oral health care and dental referral practice among FMS in Malaysia. A self-administered questionnaire was developed to obtain the variables of interest. A total of 102 FMS participated in this mail survey. FMS generally have good oral health knowledge. Most knew about dental plaque and its role in the development of oral diseases. Most FMS were able to identify risk factors, signs, and symptoms and complications of common oral diseases namely dental caries, periodontal diseases, and oral cancer. Incorrect knowledge surrounding few oral health issues, however, were prevalent. Most FMS have a positive attitude toward oral health care of patients and agreed with their roles in oral health care. Dental referral practice

was favourable although dental screening and advice were generally lacking. In conclusion, FMS have good oral health knowledge although some had misunderstandings about few oral health issues. Attitude toward oral health care and dental referral practice of the FMS were also favourable.

Keywords: oral health; knowledge; attitude; dental referral; family medicine specialists; physicians

HPOP004

Health Belief and Hypertension Perceived Susceptibility Among Young Iraqi Adults

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One billion of world's population have hypertension that causes around four million deaths annually according to WHO. Admittedly, it is the third leading cause of death globally. It is acknowledged that it drives the global burden of CVD and it is number one cause of mortality. Moreover, it is predicted that around one-third of the population will have the disease by 2025. Its prevalence is escalating in spite of the global efforts to minimise it through appropriate management, partly because it is rarely causing symptoms, and many individuals go undiagnosed with a silent disease. A cross-sectional study of 700 respondents aged between 18-40 years old from different areas of Baghdad city during the year 2016. Questions on sociodemographic characteristics, behaviour, prevention and psychological domains were asked to the participants. Their respective positive family history of hypertension showed that 380 (54.3%) had hypertension, for practice towards health showed that du'a' and pray every time (38.7%), use herbs sometimes (43.0%), do follow up sometimes (39.7%), read the nutritional info sometimes (42.6), and never do sport activity (50.7%). For health information search, it showed majority lied with sometimes category concerning surfing the internet, reading a magazine, watch health program, getting info from health personnel and family members. For preventive behaviour, it revealed majority with no smoking and no alcohol drink (82.3%) and (93.6%) respectively. Eat sweet (25.9%), fried food (39.7%), and eat outside (32.7%). It showed that perceived susceptibility was 4%, for severity 9% and 18% for benefits of screening.

Keywords: hypertension, perception, young age

HPOP005

Self Esteem and Physical Activity Level Among Form Four Students

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Physical activity is crucial for physical health, particularly among adolescents. Health behavior in the period of adolescence likely to affect their future health. Confidence in one's ability to practice health behavior such as being physically active is one of the important factors that affect physical activity level among adolescents. This study aims to find the relationship between self-esteem and physical activity level among Form Four students in Selangor. A total of 1158 Form Four students (16.06 ± 0.237 years old) selected by cluster sampling have participated in this cross-sectional study. This study used a validated and reliable self-reported questionnaire to collect data on physical activity level and self-esteem. Physical activity level was collected using International Physical Activity Questionnaire (IPAQ) while the independent outcome of self-esteem was collected by Rosenberg Self-Esteem Scale. Data were analysed by chi-square test on the relationship between self-esteem and physical activity level. Physical activity level reported was 47.40%, 39.40% and 13.20% for high, moderate and low physical activity level respectively. Self-esteem reported in this study was high (73.10%). A significant relationship was found between self-esteem and physical activity level ($\chi^2 = 17.927$ and $p < 0.001$). Higher confidence in self-esteem promotes active physical activity level. Adolescents with higher self-esteem were significantly more active to engage in physical activity. The results suggest a positive relationship between self-esteem and physical activity level among Form Four students.

Keywords: physical activity, self-esteem, adolescents

HPOP006

Preventive Practices Towards Hand-Foot-And-Mouth Disease: Beyond Individual Factor

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Preventive practices remain as the crucial strategy to halt the Hand-foot-and-mouth disease (HFMD) transmission. Ultimately, as among the three governance districts in 2016 with the most accelerated cases of HFMD in Peninsular Malaysia, Klang district warrants a local update on assessment of preventive practices towards HFMD. Therefore, this study aims to determine the socio-ecological model predictors of preventive practices towards HFMD among mothers of preschool children in Klang district. A cross-sectional study was conducted, and probability proportional to size was applied to sample a total of 353 mothers of Community Development Department (KEMAS) preschool children in Klang District. Using IBM SPSS version

22.0, Hierarchical Multiple Regression was computed to determine the predictors. The response rate was 80.2%, with median preventive practice score was high [median (IQR)=57.00 (7.00)]. Other than low mean score of knowledge [mean (SD)=13.61(4.04)], perceived severity [mean(SD)=8.30(1.36)] and perceived barrier [median(SD)= 7.80(2.14)], the prominent findings were incorrectly perceived severity and correct handwashing technique as the most perceived as barrier towards preventive practices. The predictors of preventive practice practices towards HFMD were knowledge, perceived severity, perceived barrier, social support and community factor with the entire group of variables significantly predicted the preventive practices towards HFMD ($F [9, 343] =8.934$, p value<0.001, adjusted $R^2=0.169$). Hence, this study provides an understanding that preventive practices is not solely influenced by individual factors but is also contributed by relationship factors and community factors.

Keywords: Hand-Foot-and-Mouth Disease (HFMD), preventive practices, preventive behaviour, socioecological model

POSTER PRESENTATION

EPIDEMIOLOGY

EPP001

The Relationship between Eating Habits and Stress among Undergraduate Medical Students of IIUM Kuantan

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Eating habits among medical students are associated with the stress of university life and unhealthy eating habit among young adults is a public health concern in Malaysia. This study is conducted to determine the eating habit and its relationship with stress among undergraduate medical students of IIUM Kuantan. A cross-sectional study was carried out among 250 undergraduate medical students using quota sampling. Self-administered online questionnaire consist of DASS-21 and Healthy Eating Assessment (Cronbach Alpha = 0.523) was distributed to Year 1 until Year 5. Data were analysed using SPSS software Version 23.0 and p -value of <0.05 is taken as significant. Two hundred fifty respondents consisting of 54.1% female with mean age of 22.89 ($SD=1.571$) and 95.6% of them unmarried were enrolled in this study. The majority have parents who attained university education and above (61.8% of father and 55% of the mother). Mean Body Mass Index is 22.58 ($SD=3.98$), 24.7% practice regular exercise while only five respondents are a current smoker. It is noted that there is a significant relationship between eating habits and stress level ($p=0.004$) with the highest percentage of unhealthy eating habits among severe to the extremely severe group (64.3%). There is no significant relationship between

eating habits with other factors. Even though majority of the medical students in this study have healthy eating habits, the result shows it is significantly related to stress. Therefore, students should manage their stress wisely to maintain healthy eating habits.

Keywords: eating habits, stress, medical student, university, DASS-21

EPP002

Visual Acuity: An Important Simple Screening Tool

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The impact of diabetes-related eye damage goes beyond individuals, also reducing the community productivity and economy loss to the entire country. However, suboptimal eye screening including simple visual acuity assessment was often reported, perhaps due to inconclusive evidence. The aim of this study is to evaluate the relationship between visual acuity and diabetic retinopathy (DR) in patients with Type 2 Diabetes Mellitus (T2DM). T2DM patients who attended the Ophthalmology Clinic at the Hospital Universiti Sains Malaysia were recruited. The diagnosis of DR was confirmed by ophthalmologists with documentation of retinal photographs. Demographic data, clinical characteristics and visual acuity results were collected. A total of 186 T2DM patients were analysed, of whom 62(33.3%) without DR and 124 (66.7%) with DR. In our study population, 97 (52.2%) were females, mean age of 56.9 (10.88) years old and 13.4 (7.54) years mean duration of DM. Our study showed that sensitivity and specificity of visual acuity assessment to detect DR were 71.43% and 77.78%, respectively. The positive predictive value was 0.97 and the negative predictive value was 0.23. Besides that, we found visual acuity having a 72% chance of classifying patients accurately whether they have DR. Therefore, our data supported the usefulness of visual acuity assessment in diabetic eye screening. Being a convenient and economic clinical assessment, visual acuity assessment should be reinforced, highly recommended to be the routine examination for every T2DM visit in a health clinic for earlier detection and avert diabetes-related blindness.

Keywords: Visual acuity, Screening, Diabetic Retinopathy, Type 2 Diabetes Mellitus

EPP003

Burden of Injury in Malaysia: Disability Adjusted Life Years (DALYs) With 15 Year's Trend.

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Injuries are recognized as one of the leading causes of death, accounted annually for 5 million deaths globally. The usage of Disability Adjusted Life Years (DALYs) measures the burden of selected diseases, by which it aggregates the total health loss from a particular disease at population level into a single index. This study evaluates the trend of a burden of injury in Malaysia for 2000, 2008 and 2014 for all injury causes. Data on injury cases which resulted in mortality were obtained from the Department of Statistics, Malaysia while, hospital admissions were used for morbidity data. Calculation of the DALYs was adopted from the methodology described by the Global Burden of Disease (GBD) and World Health Organization (WHO). There was a decreasing trend in terms of percentage for Years of Life Lost (mortality component), Years of Life Live in Disability (morbidity component) and total burden of injuries (DALYs component) from 2000 to 2008 but the trend increases from 2008 to 2014 in both genders. Road traffic accidents were the main cause of mortality and incidences, mainly contributed by males. Age 15 to 29 was the highest contributing age group. Injury prevention efforts should be targeted to road traffic accidents to reduce mortality rate, focusing more on males between ages 15 to 29 to reduce the burden of injuries in Malaysia.

Keywords: Injuries and wounds, Burden of Disease, Disability Adjusted Life Years (DALYs), Road accident

EPP004

A Scoping Review on Methods of Assigning Cause of Death In Verbal Autopsy (VA)

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Verbal autopsy has been implemented from the year 2000 and is in use in most countries today. Various methods in assigning a cause of death for verbal autopsy have been developed to ensure that a variety of methods can be chosen from to be implemented in various types of study designs. This study aimed to review the available literature on the methods in assigning the cause of death using verbal autopsy from the year 2000 until 2017. Using PRISMA 2009 guidelines, a variety of databases and grey literature including hand search was carried out. A total of 176 articles were retrieved. Over the years, the year 2011 recorded the highest number of published methods which is 34 articles. Most articles used the physician-coded verbal autopsy as their primary method for assigning the cause of deaths which accounted for about 75% of total articles. Another 25% of articles used software or

algorithms in determining the cause of death. For a disease-specific cause of death, almost 90% of articles focused on assigning the cause of death for general disease and for all ages. Based on the review, most articles suggested physician coded verbal autopsy as the best method in assigning a cause of death compared to algorithms or software method regardless of age, locality, and disease. Findings from this study demonstrate the need for suitable methods to be chosen and would suggest the used of physician coded verbal autopsy method in Malaysia for death verification outside the hospital setting.

Keywords: Scoping review, Verbal autopsy, Cause of death, Physician-Coded Verbal Autopsy (PCVA)

EPP005

Undiagnosed Type 2 Diabetes Mellitus and Its Associated Risk Factors among Rural Population in Malaysia

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Many individuals with type 2 diabetes mellitus (T2DM) do not realise that they have a disease that threatens their health and wellbeing. Those with undiagnosed T2DM remain untreated, thus early detection of T2DM is vital for timely intervention to prevent life-threatening complications. We aimed to determine the national prevalence of undiagnosed T2DM and its associated risk factors among the rural population in Malaysia. A nationwide cross-sectional study was conducted among 8,431 respondents in rural areas using a two-stage stratified sampling design to select a representative sample of adults 18 years and above. Structured validated questionnaires with face-to-face interviews were used. Respondents who claimed they were not having diabetes were asked to undergo a finger-prick test and was classified as “undiagnosed diabetes” when the fasting capillary blood glucose (FBG) was ≥ 6.1 mmol/L (or non-fasting blood glucose of ≥ 11.1 mmol/L). The prevalence of undiagnosed diabetes among rural respondents was 9.5% (n=944). The highest prevalence of undiagnosed T2DM were among females (10.2%), 55-59 years old (15.0 %), Malays (10.5%), those with no formal education (11.7%), widow/widower/divorcee (10.8%), unemployed (10.7%), obese (13.3%) and hypertensive (13.6%). Multivariable analyses revealed that age, obesity, and hypertension were associated with undiagnosed T2DM. Considering these factors, screening is crucial to detect early signs of diabetes to prevent complications of this disease. Awareness should be created on healthy lifestyles and the need for early diagnosis and treatment of T2DM.

Keywords: Undiagnosed, type 2 Diabetes Mellitus, risks factors, rural population Malaysia

EPP006

Spatial Temporal Diffusion of Urban Typhoid in Klang Valley: An Observational Study Between 2011 to 2015.

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Typhoid is still prevalent in developed urban areas especially in high populous areas where sanitation is not well compromised. This study aimed to examine the spatial-temporal of urban typhoid in Klang Valley in 5 years. We retrieved data from the CDCIS that include confirmed typhoid cases in Klang Valley that include Hulu Langat, Gombak, Klang, Petaling and Kuala Lumpur between 2011 to 2015. Descriptive analysis was performed that examined the socio-demographic characteristics of typhoid. To assess the spatial distribution of typhoid cases, three spatial statistics methods were applied include Moran's I, average nearest neighborhood (ANN) and kernel density estimation in the GIS environment. There were 237 of confirmed typhoid cases in Klang Valley predominant by males, 134 (56.5%), Malay ethnicity, 115 (60.8%), and local transmission, 194 (81%). Within 5 years, higher typhoid cases were observed in Kuala Lumpur, 111 (46.8%), the least typhoid cases was observed in Hulu Langat district, 16 (6.8%). Typhoid cases peaked in 2015 where 66 cases (74.2%) were observed in Kuala Lumpur. Analysis showed typhoid cases within the district were highly clustered and occurred at an average distance of 264.91 meters. Several locations especially residential areas had been identified as hot spots of typhoid cases in by using kernel density estimation analysis. Typhoid cases in Klang Valley are still prevalent and the emerging of typhoid cases that peaked in Kuala Lumpur indicates further investigation and effective control measures are necessary to curb typhoid transmission in urban settings.

Keywords: Spatial, temporal, GIS; urban, typhoid

EPP007

Trends in Awareness, Treatment and Control of Hypercholesterolemia Among Adults In Malaysia: Findings From National Health And Morbidity Survey 2006, 2011 And 2015

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The prevalence of hypercholesterolemia has continued to rise in some developing countries in Asia. In Malaysia, the prevalence of hypercholesterolemia has seen a two-fold increase (20.7% in 2006 to 47.7% in 2015) over the past decade. Therefore, we aimed to examine the trends of awareness, treatment, and control of

hypercholesterolemia among adults in Malaysia using data from the National Health and Morbidity Survey (NHMS) 2006, 2011 and 2015. It employed a two-stage stratified sampling to select a representative sample of adults in Malaysia and was analyzed using complex sample design analysis. We found that there was an increasing trend of those who were aware of their hypercholesterolemia status, from 19.8% in 2006 to 24.0% in 2011. However, in 2015, it had decreased drastically to 9.1%. Urban residents had significantly higher awareness compared to rural residents over the years. Among those respondents who were aware, there was a slight decrease in those on treatment from 61.0% in 2006 to 58.9% in 2011 and subsequently increased to 66.8% in 2015. Over the years, hypercholesterolemia awareness rose with increasing age and was significantly higher among those 60 years and above. Control rates rose from 60.8% in 2006 to 62.2% in 2011, however in 2015; it decreased to 54.3%. Males had significantly higher control rates compared to females. The decreasing trend of awareness, treatment, and control over the years is worrisome. Therefore, amplifying existing health programs is important, by targeting high risk groups, to curb this problem.

Keywords: trends, hypercholesterolemia, Malaysia, NHMS

EPP008

A Scoping Review on Obesity Research Patterns Among Adults In Malaysia

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Obesity is a global health burden and much efforts have been implemented in the past decade in response to the rise in obesity prevalence among adults in Malaysia. These include healthy lifestyle programmes, nutrition policy, and research activities. The aim of this review was to identify obesity research among adults in Malaysia in terms of the scopes, topics and research designs using an established scoping review framework by Arksey and O'Malley. Publications on obesity among adults aged 18 years and above from January 2008 until December 2017 were conducted. Articles were retrieved from electronic databases (Medline/ Ovid, PubMed, Cochrane library and Google Scholar), local journals, Nutrition Research Bibliography (2011 and 2016), online local theses databases, and the virtual library databases in Malaysia. A total of 2004 journal articles and technical reports were retrieved. Based on the objectives of the review, 188 articles related to obesity in Malaysia were included in the final review. Majority of the obesity research among adults in Malaysia was cross-sectional studies, and a small number of intervention studies, biomarkers, qualitative studies and systematic review were identified. More research funding is needed to support other research categories such as randomised controlled trials (RCT), intervention studies, obesity biomarker, cohort study and impact of obesity on the economic and social cost of obesity. Research gaps were

identified, thus useful recommendations can be forwarded to stakeholders to enhance future obesity research in Malaysia.

Keywords: Scoping review, obesity research, adults, Malaysia

EPP009

Patterns in Antimicrobial Susceptibility of *Salmonella Typhi* Isolated from Typhoid Patients in Klang Valley

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Typhoid fever caused by *Salmonella typhi* is an important public health problem including in the Klang Valley, Malaysia. Multidrug-resistant strains of *Salmonella typhi* exhibits resistant pattern to first-line drugs which resulted in the increasing use of broader spectrum antibiotics such as fluoroquinolones and third-generation cephalosporins. The aim of this study is to find out the patterns of antimicrobial susceptibility of *Salmonella typhi* isolated from typhoid patients in the Klang Valley. Five-years data of typhoid cases between years 2011 to 2015 from the Klang Valley were collected and analysed. Out of 293 patients' with clinically positive typhoid, only 132 patients had complete information on culture and sensitivity tests. More than half (57.6% (n=76) were male and 42.4% (n=56) were female. The mean age was 25 years-old (SD=16.9202). The majority of cases were Malaysian (85.6%, n=113). Our analysis showed that *Salmonella typhi* isolated from blood and stool samples have high-sensitivity rates to ceftriaxone (98.3%, n=113), tetracycline (91.9%, n=34) and chloramphenicol (90.5%, n=95). Furthermore, high resistance to nalidixic acid (36%, n=9), ampicillin (12.0%, n=14) and co-trimoxazole (10.7%, n=11) were observed. Among all the antibiotics, only chloramphenicol showed an association with citizenship (P=0.015). This study demonstrates the multi-drug resistance patterns of *Salmonella typhi* isolated in the Klang Valley area. Proper use of antibiotics can prevent antibiotic resistance and improves the efficiency of treatment for patients with *Salmonella typhi*.

Keywords: *Salmonella typhi*, multidrug-resistant, culture and sensitivity, Typhoid fever, Klang Valley

EPP010

Burden of Nutritional Anaemia in Malaysia, 2014

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Nutritional anaemia is one of the most common nutritional disorders worldwide, affecting a huge number of children and women in developing countries. In 2015, over 30% (2 billion) of the world's populations are suffering from anaemia due to iron deficiency. This is a serious public health issue as nutritional anaemia may lead to morbidity, disability, and premature mortality. Our objective was to determine the total burden of nutritional anaemia in Malaysia in 2014. The calculation of Burden of Disease in terms of Disability Adjusted Life Years (DALYs) was based on the methodology used in the Global Burden of Disease (GBD) Study. Data were obtained from the Department of Statistic Malaysia which is the official source of national statistics in Malaysia. In 2014, nutritional anaemia accounted for 50,040 DALYs, which attributes to 1% of the total burden of disease in Malaysia. Almost 99.9% of nutritional anaemia burden was attributed by the morbidity component. Nutritional anaemia burden was higher in females compared to males (1.44% vs 0.68%). The burden of nutritional anaemia in DALYs was highest in the age group 15 to 29 years old in both females and males. Comprehensive primary health care programmes need to be implemented to reduce the prevalence of nutritional anaemia by not only providing necessary nutrition supplement to those affected but also by improving education on nutrition and healthy diet to children and young adults.

Keywords: Nutritional anaemia, Disability Adjusted Life Years (DALYs), Iron deficiency

EPP011

Disability-Adjusted Life Years for Maternal, Neonatal, And Nutritional Conditions in Malaysia in 2014

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Maternal and child health is an important issue globally. Without proper nutrition and essential nutrients, women and their children are at increased risk for disease and poor health outcomes. Given the impact, disability-adjusted life years (DALYs) on maternal, child, and nutritional disorders should be calculated. The Malaysian Burden of Disease (MBOD) study used DALYs to estimate the burden of disease of maternal, neonatal, and nutritional disorders in the Malaysian population in 2014. For this purpose, we used data from the Department of Statistics Malaysia (DOSM), DisMod II, and mortality data. We adhered to DALY estimation methodology

developed by the Global Burden of Disease (GBD) study. The total DALYs calculated were 21524 (0.4%) in maternal conditions, 189881 (3.8%) in neonatal conditions, and 90832 (1.8%) in nutritional deficiencies. The leading causes of DALYs were abortion in maternal disorders, low birth weight complications in neonatal conditions, and nutritional anaemias in nutritional deficiencies. Poor nutritional nourishment adversely affects the maternal and fetal well-being and is linked to increased morbidity and fetal death. Our findings address fundamental aspects on the burden of maternal, neonatal, and nutritional conditions, ultimately urging for optimal maternal and child nutrition achievement through multiple interventions, promotions, and innovations to address and curb mortality and morbidity associated to maternal and child health and enhance nutrition for mothers and their children.

Keywords: Disability-Adjusted Life Years, Maternal Disorders, Neonatal Disorders, Nutritional Deficiencies, Malaysia

EPP012

Spatial Distribution and Socio-Demographic Characteristics of Leptospirosis Cases in Kuala Lumpur

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Leptospirosis is a prevalent zoonotic disease associated with morbidity as well as mortality. This study aimed to map the spatial distribution through an integration of the Geographical Information System (GIS), spatial statistical analyses and sociodemographic of leptospirosis cases in Kuala Lumpur. This study analyzed 180 cases from 2016. Data were retrieved from the Health Department of Kuala Lumpur. Descriptive analyses were performed to examine the sociodemographic characteristics. Three spatial statistical analyses [Moran's I, Average Nearest Neighborhood (ANN) and Kernel Density estimation] were used to access the spatial distribution of each case. Results showed that out of 180 cases, 116 were male (64.4%) and 64 were female (35.6%). The age ranges from 1 to 73 years with a mean of 31 years (\pm 15.3). These results indicated that Malays have the highest number of cases (60.2%) followed by Chinese (8.8%) and Indian (7.7%). Crosstabulation between races and gender revealed that Malay males contributed the most cases with 35% (n=63). Analysis using Moran's I indicated that the leptospirosis cases were random ($p > 0.01$) with z scores of 0.3. ANN analysis stated that the cases occur at an average distance of 684.5 meters. Several locations had been identified as the hotspots of leptospirosis cases by using Kernel Density estimation analysis. This study shows that by integrating spatial analysis using GIS improve the understanding of the distribution of leptospirosis cases in Kuala Lumpur, thus guiding relevant authorities in developing effective control measures and preventive programs.

Keywords: leptospirosis, GIS, spatial distribution

EPP013

Community Participation for Sustainable Dengue Control Programme in Taman Intan Perdana, Port Dickson

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Community participation is vital to prevent and control the spread of dengue in District of Port Dickson, as most transmissions occurred at residential areas. Between October 2017 and March 2018, three episodes of dengue outbreak occurred in Taman Intan Perdana where eighteen positive cases were detected. Thus, integrated community-based control measures are needed to halt the dengue outbreak. These measures included the creation of formal task force involving all stakeholders, initiate dialogue, sensitization to the public during Friday prayer and in school, conduct risk assessment including mapping of all possible breeding sites by specific places, and weekly monitoring of ovitraps installed in the community. During the six-month period, we monitored the participation process, assessed the environmental results and entomological outcomes. The local leaders and volunteers took key roles to inspect and control larval breeding sites in the community. Participation improved with 80 volunteers came forward to join the COMBI team in all three neighborhood phases. COMBI volunteers along with health care workers advised 737 people, distributed 1,014 flyers and 7,960 g of abate, and inspected 37 vacant lots. House inspection coverage increased from 71% to 81%. The success of this programme was measured by the reduction in the Aedes Index from 14.9% to 4.0%, Breteau Index from 14.9% to 4.0%, and positive Container Index from 3.4% to 1.5%. To ensure continuation of the programme, community leaders are empowered to continuously disseminate information, educate communities and catalyze behavioral change at the household level, which in turn will stimulate a dengue-free community.

Keywords: dengue, community participation, integrated community-based dengue control

EPP014

Burden of Food Poisoning in Terengganu, 2012-2016

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Food poisonings defined as acute onset of vomiting and/or diarrhoea and/or other symptoms associated with ingestion of food. The aim of this paper is to describe the characteristic of food poisoning in Terengganu from January to December 2012-2016. This study looked at notified food poisoning cases based on an early report

from districts and final reports within one month after the outbreak. The information collected include the episode of food poisoning by districts, food setting, type of schools, type of foods and risk factors. Data gathered were entered in SPSS version 11 and descriptive analysis was used to describe the food poisoning. A total of 158 episodes of food poisoning occurred from 2012-2016. The highest food setting related with food poisoning were schools (49.3%), followed by other places (28%), institutions (10.6%), residences (9.3%) and Pusat Latihan Khidmat Negara (2.7%). The types of foods related with food poisoning were chicken (39.2%), others (24.1%), rice (13.9%), meat (12.2%) and milk/milk product (5.1%). The main suspected causative agents were *Salmonella* spp. (34%), *Staphylococcus aureus* (32%), *Bacillus cereus* (29%), *Clostridium perfringens* and *E. Coli* (2%) and *Vibrio parahaemoliticus* (1%). The risk factors related to food poisoning were the preparation of food (22.2%), raw material (21.3%), and holding temperature more than 4 hours (19.2%), cross-contamination (19.0%), individual hygiene (10.6%), and others (7.7%). In conclusion, the school, chicken, *Salmonella* spp., and preparation of food were the most characteristic related to food poisoning.

Keywords: Food Poisoning, Food Setting, Type of Food, Risk Factors

EPP015

A Five-Year Review on Leptospirosis Incidence and Mortality In Perak State, Malaysia 2011-2015

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Leptospirosis is recognized as one of the world's most dreadful zoonotic infections with a greater incidence in tropical countries. There is limited publication of data on the incidence and mortality of leptospirosis in Malaysia. In view of that, this analysis aims to look into the incidence and mortality of leptospirosis in Perak State over a five-year-period. We reviewed all leptospirosis cases notified to the Perak State Health Department, Malaysia for the years 2011 to 2015. Two thousand and sixty-five (2,065) leptospirosis cases were notified during the 5 years period. 70.7% of cases were male. The most common age group was less than 19 years (29.5%), followed by 20 - 29 years (23.4%). Malay ethnicity was the most common race group (59.1%) and students contributed to the most number of cases (21.2%). The overall average incidence, mortality and case fatality rates for 2011-2015 in Perak were 16.9 per 100,000 population, 0.53 per 100,000 population and 3.14% respectively. In conclusion, this study provides an insight on the disease burden of leptospirosis in Perak. It showed that leptospirosis has a high incidence in Perak with higher risk in specific subgroups of the population like males, younger age (less than 44 years), students and agricultural workers.

Keywords: Leptospirosis. Incidence, Mortality, Perak, Malaysia

EPP016

Combating Dengue Using Outdoor Residual Spray in Pangsapuri Ampang Jajar, Penang, Malaysia

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Dengue fever is the most prevalent vector-borne viral diseases in humans. Control of dengue is the mainstay in preventing man-vector contact and reducing the vector population. This study aims to determine the impact of outdoor residual spray (ORS) against mosquito vector population in a dengue hot-spot area in Malaysia. A retrospective study was conducted using secondary data from December 2015 and dengue indices were monitored. Data was analysed as a single-group interrupted time-series analysis. Post-ORS, there was a decrease of 1.51 AI, 1.78 BI and 0.64 CI per week; albeit not significant statistically. During the first week post-ORS, there appeared to be an estimated decrease of 18 cases. After that week, there was an estimated decrease of 9.5 of the cases per week. The dengue incidence pre-ORS is 767/100,000 population while post-ORS is 133/100,000 population. Case fatality rate pre-ORS is 66.6% meanwhile post-ORS is 0%. Overall, the descriptive outcomes were suggestive of the effectiveness of ORS in reducing the mosquito population rather than inferential statistic. ORS using Aqua K-othrine was inadequate in curbing the dengue hot-spot alone. ORS is an alternative dengue control tool used especially in dense high-rise buildings and is a complementary method used together with pre-existing methods such as larvaciding, search & destroy, environmental cleanliness and awareness among the community. There is limited success with present dengue vector control in managing dengue and its vector. This calls for urgent development of new and effective control tools.

Keywords: dengue fever, outdoor residual spray, dengue indices, dengue outbreak management

EPP017

Prison as a Breeding Pot For Tuberculosis: The Bare Facts

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A very high tuberculosis (TB) notification rate among prisoners as compared to the public prompt studies to be done among this group of patients concerning TB detection, treatment as well as the outcome of the disease. A comparative cross-sectional study of Marang district TB patients between inmates (62 patients) and the general population (137 patients) among males aged 23-57 years was done using

web-based surveillance data (MyTB). Data was taken from 2012 to 2016 database. Socio-demographic and socioeconomic profiles, factors surrounding the diagnosis of TB, co-morbidities, treatment, and outcomes of treatment data were recorded and analyzed. Four factors among prisoners have been found to have significant difference as compared to the general populations; lower educational level (aOR=11.61, 95%CI: 1.49-90.80), active detection method of diagnosis (aOR=5.71, 95%CI: 1.08-30.37), non-severe chest x-ray findings (aOR=2.72, 95% CI: 1.18-6.24) and positive HIV status (aOR=4.30, 95% CI: 2.16-8.56). A conclusion can be made that it is important to screen inmates early on or upon the point of entry to prison since early detection of TB can be beneficial not only to inmates but also to the community.

Keywords: Tuberculosis, prison, inmates, factors

EPP018

Timeliness of Dengue Surveillance: A Comparison of Multiple Input And Single Input Notification in Negeri Sembilan in 2017.

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Timely reporting of vector-borne disease cases to public health authorities is essential for effective public health response and control measures. Negeri Sembilan state practices two methods in dengue notification reporting which is known as single input and multiple input notification method. The aim of this study to compare single input and multiple input methods in Negeri Sembilan in 2017. Multiple input methods practised by five districts meanwhile two districts practices single input method. Quantitative measures used in this study were the intervals between diagnosis of dengue, dengue notification, dengue e-notification and control measures activities by districts in Negeri Sembilan. We retrieved reporting data of dengue from January 2017 to December 2017 from Dengue e-notification and e-dengue database. Two distinct types of delay were compared. Firstly, total delay which defined as the time between diagnosis and control measures and secondly was central delay which defined as the time between notification to control measures. Median delays between both systems were compared using the Wilcoxon Rank Sum-Test. The results showed that there is no significant difference between median total delay in multiple input districts (3.0 days) compared to single input districts (2.5 days) with p-value >0.05. Similarly, there is no significant difference in median central delay on multiple input districts (2.5 days) compared to single input districts (2 days) with p-value >0.05 from January to December 2017. In conclusion, there is no difference in the timeliness of multiple site input compared to single site input notification of dengue surveillance in Negeri Sembilan.

Keywords: dengue, timeliness, notification

EPP019

An Investigation Report of Neonatal Melioidosis In Port Dickson District

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Melioidosis is a tropical infectious disease associated with significant mortality due to early onset of sepsis. Therefore, a case report of neonatal melioidosis in Port Dickson District was reviewed. The information gathered from medical reports, exposure history, comorbid conditions and findings from the epidemiological investigation were collected and analyzed. An investigation report was produced to verify the cause of death, magnitude of infection among close contact, to find the source of infection, and to control infection as to prevent new incidence. We received a notification regarding a twenty days old infant who died due to Disseminated Melioidosis. The infant had septicaemic shock despite extensive treatment with antibiotics and blood transfusion. *Burkholderia Pseudomallei* was isolated from the infant's blood. From the investigation, it was found that the source of infection was most probably acquired from the patient's uncle (age eleven years old). The uncle has direct contact with a potential environment for melioidosis infections such as small river located behind his house, that may create a chain of infection. Moreover, the uncle had multiple cutaneous symptoms of melioidosis, but it was not confirmed by laboratory investigation. Although full cooperation from the patient's uncle and family members was not gained, we postulated that the transmission of *Burkholderia Pseudomallei* might have occurred due to close contact during few days after birth. Fatality of neonatal melioidosis is high which required greater attention and suspicion to be diagnosed early in a neonate.

Keywords: neonatal, melioidosis, direct contact

EPP020

Estimating Burden of Disease Attributable to High Body Mass Index in Malaysia, 2013

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High body mass index (BMI) is a global public health issue. By 2025, the global prevalence of obesity will reach 18% in men and more than 21% in women. High BMI is responsible for a large and increasing proportion of burden of disease (BOD), particularly with regards to cardiovascular diseases and diabetes mellitus. The objective of the study was to estimate the BOD attributable to high BMI in adults aged 30 years and older in Malaysia. The calculation of BOD in term of Disability Adjusted Life Years (DALYs) was done using the methodology used in the Global BOD Study whereas the calculation of attributable burden of high BMI was done using the

World Health Organization Comparative Risk Assessment methodology. Mortality and population data were provided by the Department of Statistics, Malaysia and data on BMI was obtained from National Health and Morbidity Surveys. High BMI was estimated to have caused 16.8% of BOD among Malaysian population (15.3% in males and 19.0% in females). By age group, 21.7% of DALYs in 45-59 years old were contributed by high BMI followed by 60-69 years old (17.5%). Diabetes mellitus was the largest contributors for DALYs attributable to high BMI in both males and females at 42.8% and 55.2% respectively. This study shows the importance of high BMI as a major risk to health particularly among females. Priority should be given on the implementation of effective policy and practice regarding the prevention and management of high BMI particularly obesity in the population.

Keywords : Burden of Disease, Risk Factors, DALYs, High Body Mass Index

EPP021

Measles Outbreak Among Orang Asli (OA) In Kg. Langkap, Rompin, 2017

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Measles is highly contagious vaccine preventable disease. Measles Elimination Programme (MEP) in Malaysia was started in 2004 and targeted elimination by 2010. However, this target has not achieved, and new target was set by 2025. Incidence rate of measles among OA in Pahang shows increasing trend from 1.33 in 2011 to 2.39 (per 1 million populations) in 2015. We report an assessment of measles outbreak among OA in Kg Langkap in 2017. An enhanced surveillance and intensive door-to-door search were done. Clinical case definition is a person with symptoms of fever and rash with/without cough, coryza or conjunctivitis residing in Kg. Langkap since 28th September 2017. A case that meets the clinical case definition and has laboratory-confirmation of measles virus infection or epidemiologically linked was defined as confirmed. Immunization coverage were reviewed. This outbreak was started with a measles case misdiagnosed as dengue infection. Nine cases fulfilled the case definition with the attacked rate of 2.99%. 66.7% of cases were adult aged ≥ 18 y/o. Immunization status of 55.5% (5 cases) were not known/no documentation. Closely bound community and susceptible population were the possible predisposing factors hence, there is a need for sero-surveillance for measles among OA and catch-up measles immunisation campaign to prevent future outbreak.

Keywords: Orang Asli, Measles, Outbreak

EPP022

Monitoring of Aedes Density in Seremban District Through Ovitrap Sentinel Stations

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Ovitrap is a devise used to detect Aedes presence especially in low Density Aedes locality. The aim of the study was to monitor the Aedes density in Seremban district and its correlation with the amount of rainfall through sentinel ovitrap activities from 2012 until 2015. Localities involved are Taman Semarak Phase 2 (2012), Taman Tuanku Jaafar Phase 3 (2013), Taman Bukit Chedang (2014) dan Garden Homes Phase E (2015). Sentinel localities were chosen based on 'Hotspot' outbreak reported in previous year. Every week, an amount of 60 ovitrap cups were placed randomly and then collected, being incubated for one week in Entomology Laboratory where larvae identification were performed after that for every ovitrap turn out to be positive. The amount of rainfall was measured by using rain gauge together with ovitrap placed in the same localities. *Ovitrap Index* and rainfall reading were recorded every week throughout the year in the Sentinel localities. Aedes density showed an increase in trend one week after there were increase in amount of rainfall. Furthermore, Aedes density showed drop in pattern when total of rainfall collected became less. Result of the study indicates that *Ovitrap Index* showed direct proportion with the amount of rainfall collected. *Ovitrap Index* from all sentinel localities exceed the threshold that was suggested by the Ministry of Health Malaysia. Natural containers that were found to be harboured everywhere in the localities can possibly contributed to be the main source of Aedes breeding.

Keywords : Ovitrap Index ,Aedes, threshold,larvae, sentinel

EPP023

Mumps Clusters Among School Children in The Federal Territory of Putrajaya

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Mumps is caused by *paramyxovirus*, characterised by swelling of the salivary glands and commonly affects young children. In 2017, twelve (12) mumps clusters were reported in eleven (11) schools in Putrajaya. The aim of this study is to share the investigation findings and preventative measures taken to contain the outbreak. A total of 12,382 students and staff from pre-schools, primary and secondary schools

were exposed, with 167 cases were identified during the outbreak (attack rate:1.35%). The median age of the cases was 9 years old and 87 cases (52.1%) were male. More than 70% of the cases reside within Putrajaya. Majority (94.6%) of cases fall in the birth cohort of the year 2005 to 2015 whom received only single dose of the triple Measles-Mumps-Rubella (MMR) vaccine at 1-year of age. Highest attack rate was observed among the pre-school children although the percentage is low (3.9%) as compared to outbreaks among low-to-middle-income countries. From 167 cases, 17 buccal swab samples were sent for virus isolation. Two samples were detected to have mumps strain of genotype G. In Putrajaya, school complexes which combine the pre-schools, primary and secondary schools in one compound may have aggravated the transmission of communicable diseases. This study demonstrated that young children are highly at risk of getting mumps infection and primary prevention such as vaccination is essential to avert severe morbidity or mortality. Thus, the role of all major stakeholders is fundamental to strengthen infection prevention and control measures in schools.

Keywords: mumps, cluster, school

EPP024

Mumps Outbreak: Why There's A Second Wave Coming?

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Between August 2, 2017 and November 1, 2017, 33 mumps cases were reported in the district of Perak Tengah resulting in an outbreak in one of the prestigious boarding school in Perak. Second wave of mumps outbreak struck on September 25, 2017 resulting in another 11 cases. Active case detection at the school; passive case detection from local health clinics; and active case surveillance were conducted. Each student was clinically examined to identify mumps cases according to case definition and treated accordingly. Those have mumps criteria or suspected were isolated in the sickbay. Health education to student and teachers, disinfecting procedure and meeting with the school principal to give guidance on proper implementation of the control measures that was carried out. Of the 912 students, 44 fulfilled mumps criteria and were registered. Median age was 13 years (range: 13-17); 27(61.3%) were form 1 student; 24 (54.5%) female; 43 (97.7%) Malay; presented with parotid swelling 44(100%), fever 39(88.6%), cough 6(13.6%), running nose 3(6.8%) and sore throat 2(4.5%). Total attack rate was 4.82% whereas, the attack rate for students age 13-15 years (double dose MMR) and age 14-17 years (single dose MMR) was 6.6% and 2.3% respectively. Improper isolation, use of school buses to send students home and undetected mumps cases during school holidays resulted in the second wave. Appropriate implementation of isolation procedures and adequate data collection may prevent the second wave and timely stop the outbreak. Interagency collaboration, technical guidance and strictly monitoring control measures by health authorities is necessary.

Keywords: Mumps, outbreak, school

EPP025

An Outbreak of Rotavirus Infection in A Military Base

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Rotavirus is a very contagious virus that transmitted by fecal-oral contact and possibly by contaminated surfaces and hands and respiratory spread. It can cause acute gastroenteritis in children younger than 5 years, and even can cause severe watery diarrhoea which needs to be hospitalized for rehydration. In May 2017, there was an operation and maintenance of water supply systems conducted in a Military Base in District Mersing. Subsequently, we got a total of 14 isolated cases (mild acute gastroenteritis which didn't fulfil the clinical definition of Rotavirus enteritis) began seeking treatment since Day-2 after that operation. This case-control study was conducted in June 2017, aims to determine the infection sources, and the risk factors for Rotavirus outbreak which reported on 9.6.2017. This Rotavirus outbreak involving 8 confirmed cases from 150 exposed children aged 0-5 years old, attack rate was 5.3%. The hypotheses postulated were that drank unboiled water and/or those attended the Gawai Dayak celebration event in the military base were the potential causes to trigger off the Rotavirus outbreak. This was tested via case-control study, in which 24 respondents were enrolled, 8 were cases and 16 were controls (1:2 case and control ratio). This study found out that cases were significantly for those children who drank unboiled water at home, they were 7.2 times more likely to get Rotavirus infection (p value < 0.05). Those attended Gawai Dayak celebration event in that Military Base, they were 9 times more likely to get Rotavirus infection (p value < 0.02) compared to those who did not attend. Knowledge and practices on the prevention of water-borne diseases among communities are essential elements of public health action in this outbreak.

Keywords: outbreak, rotavirus

EPP026

Nosocomial Outbreak of Respiratory Syncytial Virus in Special Care Nursery (SCN)

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Respiratory Syncytial Virus (RSV) is the leading lower respiratory tract infection among newborns. It had been recognized as the major nosocomial hazard in paediatric wards. An outbreak of RSV happened in the special care nursery where high-risk infants were under care. The objective of this study is to describe the outbreak in time, place and person, identify the possible source, postulate the predisposing factors and for implementation of control and preventive actions. A descriptive study was performed. All infants diagnosed clinically as RSV were

included. All contacts among healthcare workers, supportive workers and parents were identified and investigated for source identification. Total of 20 infants diagnosed as RSV with 19 confirmed cases. Two cases died while four infants required mechanical ventilation and support. The attack rate was higher in preterm infants. The disease transmissions occurred as nosocomial and possibly contributed by healthcare worker. The implementation of rigorous control measures were effective in controlling the outbreak including cases isolation, quarantine in cohort among contact, screening of RSV for all infants with symptoms, standard isolation precautions, sick leaves for healthcare personnel with symptoms, symptomatic gate keeping and banned those with respiratory symptoms from entering ward. Lesson learned from this outbreak, standard isolation precautions should be strengthen to prevent further recurrence of the nosocomial outbreak in SCN.

Keywords: respiratory syncytial virus, special care nursery, nosocomial outbreak, infants.

EPP027

Measles Risk Assessment in Port Dickson District.

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Risk assessment is an important measure to guide and strengthen measles elimination programme activities and reduce the risk of outbreaks. Objective of this report is to determine measles risk assessment and identify needs for supplementary immunization activity (SIA) in Port Dickson District for year 2017. Measles risk assessment tool by Ministry of Health Malaysia with 12 indicators was used. Data for past 3 years (2014-2016) were collected from Port Dickson Health District office. Scores for each indicator were given as per guideline. Total indicator percentage of 50% and above was categorised as high risk. Average MCV coverage ranges from 94.7% to 96.3%. Cumulative risk population was 0.77%. No measles outbreak or measles SIA conducted in previous 3 years. Percentage of defaulter of MCV at 12 months (DPT1-MCV) was 4.1% while from form KKK101 was 0.8%. Percentage of MCV defaulter at 12 months old through checking child health card was 0%. The non-measles, non-rubella rate was 22.4/100,000 population. All suspected cases were investigated by serology samples. There was 2 measles case reported in age 13 years and above and none from age group >12 months to 12 years old. Overall percentage of risk assessment is 20.4%. Total percentage from 5 critical indicators was 0%. Therefore, risk assessment showed low risk and no requirement for measles SIA in 2017. However, immunization and surveillance programme in Port Dickson need to be strengthen and need of yearly risk assessment as recommended by WHO can be considered.

Keywords: measles, risk assessment, measles elimination, immunization

EPP028

Did We Miss Something? A Sharing Experience of Handling Tuberculosis in Setiu, Terengganu

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Tuberculosis (TB) remains to be one of the leading cause of morbidity and mortality globally, includes Malaysia. Though a lot of preventive actions are taken by the health department, TB cases keep rising. In Setiu Terengganu, one of its localities (a Felda setting) was noted to have high incidence of TB cases. The incident rate for 2018 was 2.8 (in 1000 population) compared to 0.4 in previous years (2012-2017). A community survey was conducted during Intensive Case Finding (ICF) program in that area. The aim of the survey was to assess the knowledge and practise of the community about TB. A total of 283 locals were interviewed using a questionnaire during that 3 weeks ICF program. About 21.2% claimed they never been informed of TB before. From those who have been informed, 56.5% was informed through mass media, 31.4% from health staffs and 17.7% from other sources. 84.8% stated that prolonged cough is one of TB symptoms, while 41.4% for loss of weight and 33.6% for prolonged fever. Sixteen percent of them did not know symptoms of TB, 77.7% claimed that TB can be transmitted through cough and sneeze, 9.5% through mosquito bites, 6.4 % via touch and food we eat while 18.3% of them admit they did not know the transmission mechanism. For methods of prevention; more than half of them (66%) agreed that we should practise cough etiquette, 48.4 % claimed that TB patient should wear mask, and 27.2% for good hand hygiene. Around 9.5% of them did not know methods of prevention, 77% of the patients diagnosed TB wore mask till sputum conversion, 10.5% wore it for few days only and 12.3% did not wear at all. By looking at the results, there is doubt to the efficacy of prevention action taken before. Health promotion should be more intense, and close contact screening should be more extensive by doing mapping analysis to prevent the spike of incidence.

Keywords: tuberculosis, community survey, knowledge, practise, prevention efficacy

EPP029

Factors Associated with Uncontrolled Type 2 Diabetes Mellitus Patients in Bera District, Pahang

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Pejabat Kesihatan Daerah Bera

Poor glycaemic control often leads to microvascular and macrovascular complications. This study was to determine the prevalence of uncontrolled diabetes and its associated factors among patients with type 2 diabetes mellitus (T2DM) treated in public health clinics in Bera District, Pahang. A cross-sectional study was

conducted using the secondary data from the National Diabetic Registry audited in 2017. A total of 1047 patients with completed dataset were recruited. Uncontrolled diabetes was defined as HbA1c >6.5%. Binary and multiple logistic regression were conducted to identify predictors of uncontrolled T2DM. The mean age of patients was 63.36 ± 9.56 years, 62.8% were female, 72.1% were Malay, 78.0% had duration of T2DM >5 years, 92.1% had T2DM onset at ≥ 40 years and 58.5% were prescribed with oral hypoglycemic agent (OHA) only. The mean HbA1c was $8.47 \pm 2.40\%$ and 77.4% patients had uncontrolled T2DM. Multiple logistic regression analysis revealed that older age (AOR=0.537, 95% CI=0.364-0.793) had reduced risk for uncontrolled T2DM whereas duration of T2DM >10 years (AOR=3.523, 95% CI=2.197-5.647), taking OHA only (AOR=4.321, 95% CI=2.005-9.312), insulin only (AOR=14.952, 95% CI=5.219-42.838), combination of OHA and insulin (AOR=25.332, 95% CI=10.106-63.501), uncontrolled diastolic blood pressure (AOR=1.604, 95% CI=1.156-2.224) and uncontrolled triglyceride (AOR=1.679, 95% CI=1.191-2.368) were factors associated with uncontrolled T2DM. Health care professionals should manage the associated factors to limit disease complications.

Keywords: Uncontrolled, Type 2 Diabetes Mellitus, Bera

EPP030

Comparative Cross-Sectional Study on Factors Associated with Tuberculosis Between Orang Asli And Non-Orang Asli In Perak.

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Tuberculosis (TB) incidence among Orang Asli (OA) in Perak is significantly higher than general population. Little is known about the factors associated with TB among them. This study aimed to describe the characteristics and to identify factors associated with TB among OA compared to Non-OA. A comparative cross-sectional study using database between 2011 and 2015 involved 214 OA and 214 non-OA TB cases. Analysis using SPSS version 22 for descriptive and inferential statistics (simple and multiple logistic regression). Mean age among OA TB significantly younger than non-OA TB [33.9 (16.08) vs. 43.5 (16.52), $p < 0.001$]. Majority OA-TB were males (58.4%), low level of education (72.0%), unemployed (56.1%), from rural area (92.0%) and not overcrowding condition (53.3%), non-diabetes (95.3%), HIV negative (99.5%) and non-smoker (75.7%). After adjusting other cofounders, the significant predictors for TB disease among OA compared to non-OA were age AOR 0.94, 95% CI:0.92-0.96, low education level (AOR 12.6, 95% CI:6.244-25.466), unemployed (AOR 3.668, 95% CI:1.977-6.807), living in rural area (AOR 8.982, 95% CI:4.376-18.439), exposed to overcrowding (AOR 1.883, 95% CI:1.032-3.435) and diabetes (AOR 0.171, 95% CI:0.068-0.430). TB among OA in Perak were influenced by socio-demographic status; age, education, area of living, employment, overcrowding and co-morbidities such as diabetes. Act on these social determinants and effective TB control

strategies tailored to the specific needs for underprivileged group such as OA is needed.

Keywords: Tuberculosis, aboriginal, indigenous, Orang Asli and associated factors

EPP031

Burden of Dementia Among the Elderly in Malaysia, 2014

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Dementia is the most common neurological disease which increases significantly as the population ages. The main objective of this study is to provide detailed gender and age-specific estimates for Dementia in Malaysia as there are no reliable data on its incidence, given the significant implications for social and public policy and planning. Prevalence for Dementia in Malaysia was obtained from estimates reported by the Institute for Health Metrics and Evaluation (IHME). We used DisMod II to derive a set of equations that describes this disease process and allows calculation of the complete epidemiology using three input variables (prevalence, zero remission rates, and age-specific RR mortality). We then adhered to DALY estimation methodology developed by the Global Burden of Disease (GBD) study. The total DALY calculated for dementia in Malaysia in 2014 was 22,276 (0.45%), and the incidence occurs slightly higher among males (4.7%) compared to females (4.4%). The highest incidence was estimated among population above 80 years in both male and female age groups, however among older adults in the age group of 70-79 years, dementia remained in the top 10 leading causes of total burden for both genders. The detailed estimates in this study constitute the best current basis for policymaking, planning, and allocation of health and welfare resources in dementia care. Future projections of numbers of people with dementia may be altered by preventive measures, improvements in treatment, and disease-modifying interventions.

Keywords: Dementia, Burden of disease, DISMOD II, Malaysia, 2014

EPP032

Do Knowledge, Attitude and Lifestyles Really Contributes to Central Obesity? A Survey in An Urban Locality in Malaysia.

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This cross-sectional study was done to determine the prevalence of obesity and knowledge, attitude and lifestyle practices towards obesity at a local urban community in Shah Alam, Selangor, Malaysia. A random of 214 respondents (response rate of 84.92%) were recruited, aged 18 to 81 years old with a median age of 35.50 years. They were given self-administered questionnaires. Majority are females

(60.3%), Malaysian (93.0%), of Malay ethnic (83.6%), Muslim (87.4%), married (68.2%), completed secondary school/SPM (58.4%) and are housewives (33.2%). More than half of them (55.14%) have central obesity. Most have poor knowledge (66.8%), poor attitude (56.1%) and almost half practiced poor lifestyle (49.5%). Factors like i) age, ii) gender, iii) marital status, iv) education level, v) occupation and vi) lifestyle practices have a significant influence on the occurrence of central obesity. Females made up of 72% proportion with central obesity ($p<0.001$) and has three times higher risk of having central obesity compared to males. Age was found to be significantly affecting the attitude towards obesity ($r=-0.213$, $p=0.002$, 95%CI=35.70,39.06) and lifestyle practices ($r=0.226$, $p=0.017$, 95%CI=0.39,0.73) though weakly correlated. Total household income was weakly correlated with the knowledge regarding obesity ($r=0.238$, $p=0.027$, 95%CI=28.01,40.40). This study shows that central obesity was attributed by age, gender, education level, marital status, lifestyle patterns and occupation. Attitude and lifestyle patterns were attributed by age, while knowledge was attributed by education level. Thus, to improve the knowledge, attitude and lifestyle practices towards obesity, more health promotion programs need to be implemented to better educate our community.

Keywords: knowledge, attitude, lifestyle practices, central obesity, urban

EPP033

Molecular Epidemiology of Important Viruses in Malaysia 2014-2017

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Molecular surveillance is important as it provides data on the circulating genotypes in endemic countries and enabling activation of measures to be taken in the event of a pending outbreak. National Public Health Laboratory conducted virus characterization for Measles, Rubella, EV 71 and dengue virus through various samples received from laboratory-based surveillance. Molecular surveillance is carried out by first detecting the virus in susceptible humans. This is followed by sequencing a selected region of the virus which will provide evidence on the source of the virus and possible association of the virus to increased cases of that infections. The circulating genotypes for four important viruses in Malaysia i.e. measles, rubella, EV 71 and dengue were observed from 2014-2017, found that about the same genotypes were circulating. Measles, genotypes B3, D8 and D9 were circulating in our country in the past 4 years. The genotype H1 was observed in 2014 was contributed by an outbreak by imported cases. The circulated genotypes for rubella are 1A, 1E and 2B. Always genotypes B5 for EV71. The circulating genotypes for all dengue serotypes were D1G1, D1G3, D2Cosmo, D2Asian, D3G1,D3G3, D4G2 and each of them were found circulating every year.

Keywords : Genotypes, measles, rubella, EV72 and dengue virus

EPP034

Analysis of Childhood Tuberculosis (TB) Surveillance Data, Kuala Lumpur and Putrajaya Federal Territory, 2013-2017

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Tuberculosis (TB) is the ninth leading cause of death worldwide and the leading cause from a single infectious agent, ranking above HIV/AIDS. At least one million children become ill with TB each year. Children represent about 10-11% of all TB cases. This study aims to determine the burden, trends, distribution and treatment success rates of childhood TB in Kuala Lumpur and Putrajaya Federal Territory. TB surveillance data for the period of 2013-2017 obtained from MyTB was analysed retrospectively. During the five year period, a total of 9550 TB cases registered. Of this, 225 (2.4%) cases were childhood TB. Three deaths (case fatality rate: 1.3%) was recorded over the period. All deaths were females and age ranges from 13 to 14 years old. The incidence per 100,000 population were : 9.9, 10.0, 13.3, 9.6 and 13.2 for 2013, 2014, 2015, 2016 and 2017 respectively. The most affected were females (58.2%), age group 5-14 years old (72%) and Malaysia nationality (83.6%). Of the five districts, Titiwangsa had the highest proportion of childhood TB cases (32.9%). None of the cases were smoker or diagnosed with diabetes mellitus. There were 200 (71.9%) with BCG (bacille Calmette-Guerin) scar and 157 (69.8%) live in flat or apartment type of residence. The treatment success rate for the period was 87.1%. Though the burden of childhood TB in Federal Territory of Kuala Lumpur and Putrajaya is relatively low and 'achieved' the national target, the trend of incidence is increasing and suggestive of improved case detection rate.

Keywords: childhood TB, incidence, fatality, detection

EPP035

HFMD Cluster in Bera 2018: One Analysis

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Hand, Foot and Mouth Disease (HFMD) is endemic worldwide. It is caused by enterovirus and commonly occur among children less than ten years old. The objective of this study is to describe the epidemiology of HFMD cluster that occur in Bera district starting from 16 January until 26 January 2018. There were 12 cases reported during that period. Data were taken from investigation record of Communicable Disease Control Unit. Average age of the cases was 2.75 ± 0.9 years with majority of cases were ages two to three years old. From the 12 cases, there were seven (58.3%) boys and five (41.7%) girls. Only one case did not have complete information regarding immunization. All cases were Malays. Nine (75.0%) of the cases involved were those who was breastfed for more than 6 months and 2 (16.7%) were

breastfed for less than 6 months. There were nine (75.0%) cases who had direct contact with HFMD cases which was from Taman Asuhan Kanak-Kanak, two (16.7%) of the cases were sibling and one (8.3%) of the case was from the same neighborhood. Five sample had been taken for serology and four (80.0%) of them were positive for pan-enterovirus. All of the cases were diagnosed clinically, had no complication and reported from health facility. Surveillance activity and prevention measures are important in order to reduce incidence of HFMD cases in the future.

Keywords: HFMD. Bera district, social demography aspect, clinical presentation, environmental condition

EPP036

Risk Factors of Tuberculosis Among Diabetes Mellitus Patients In Hospital Sultanah Bahiyah, Alor Setar 2015-2016

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Tuberculosis (TB) and diabetes mellitus (DM) is a double-burden disease and both are known as major global health problem. The objective of this study is to determine risk factors of TB among DM patients in Hospital Sultanah Bahiyah (HSB). A hospital-based case control study with study population and retrospective data taken from the e-Respiratory registry list in the chest clinic of HSB from January 2015 to December 2016. Diabetic information obtained from diabetic clinic registry. Male patients who have DM were two times at risk of having TB as compared to female patients (aOR=2.25, 95% CI=1.18, 4.30). Non-Malays who have DM were three times at risk of having tuberculosis as compared to Malay ethnic patients (aOR=3.35, 95% CI=1.43, 7.86). Patients age of more than 50 years old at DM diagnosis, two times more likely to have TB compared to patients age of less than 50 years old (aOR=2.21, 95% CI=1.18, 4.16). DM patients who smokes cigarette were two times more likely to develop TB as compared to non-smokers (aOR=2.22, 95% CI=1.19, 4.14). DM patients who have history of contact with TB patients have 11 times odds of developing TB as compared with those who never have history of contact with TB patients (aOR=11.07, 95% CI=5.47, 22.40). The important risk factors associated with tuberculosis among diabetics are gender, ethnicity, age at DM diagnosis, smoking status and history of contact with TB patient.

Keywords: tuberculosis, diabetes mellitus, tuberculosis-diabetes, risk factors

EPP037

Can Voice Disorders Provoke Emotions Among Primary School Teachers?

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Voice is the primary instrument of teacher's communication in school. Recently it has been observed there is an upward trend of voice disorder which may eventually lead to occupational based voice disorder. A cross-sectional study was conducted to determine the association between emotional characteristics and voice disorders among government primary school teachers in Kajang, Hulu Langat district. The study involved six primary schools in Kajang and was conducted from February to May 2016. Bilingual self-administered questionnaires were used to obtain the data. DASS-21 was used as a tool to measure emotional characterization among them. Cronbach alpha ranged from 0.89 to 0.95 in this study. Data were analysed using SPSS version 21.0. A total of 370 teachers participated whereby it gave a response rate of 86%. Majority of the teachers were females (89%), of Malay ethnicity (55%), aged 30-39 years (52%) and married (88%). Prevalence of voice disorder was 34% in this study. It was found that prevalence emotional of depression was 43%, anxious was 62%, and stress at 47% among the teachers in this study. Furthermore in this study, depression ($\chi^2 = 30.73$, df = 1, $p < 0.001$), anxiety ($\chi^2 = 26.22$, df = 1, $p < 0.001$) and stress ($\chi^2 = 49.04$, df = 1, $p < 0.001$) had statistically significant association with voice disorders. The findings from this study can be used to plan preventive measure, and screening programmes to curb the psychological aspect and the problem of voice disorders among teachers.

Keywords: Voice disorder, depression, anxiety, stress, teachers

EPP038

Aedes (Stegomyia) Mosquitoes Distribution by Using GIS

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There are two main species of *Aedes* mosquitoes that play a role in transmitting dengue which are *Aedes aegypti* and *Aedes albopictus*. *Aedes* species mapping can be used to assist in planning for control and prevention activities. Data from Entomological Surveillance were tabulated using Geographic Information System (GIS), aimed to map out *Aedes aegypti* and *Aedes albopictus* mosquitoes distribution for Negeri Sembilan in 2017. Data were collected through Entomological Assessment activities and downloads of e-Dengue 2017 from outbreak localities which were then analyzed by using ESRI ArcGIS software. A total of 162 localities have been analyzed. Seremban recorded most abundance *Aedes* sp. (58%), followed by Port Dickson (13%),

Jempol (8%), Jelebu (7%), Rembau (6%), Kuala Pilah (5%) and Tampin (4%). *Aedes sp.* are more concentrated in urban, coastline rather than inland. Seremban and Port Dickson districts contributed about 98% of Negeri Sembilan dengue outbreaks in 2017. *Aedes aegypti* is an efficient vector which prefers to oviposit indoor, 'skip oviposit' and has 'multi-biting' behavior compared to *Aedes albopictus*. The presence of *Aedes aegypti* in inland area indicates as signal of possibility of dengue outbreaks if vector control activities do not work effectively and efficiently. GIS mapping for Entomological Surveillance is a useful tool which can contribute in planning and controlling of Dengue vectors. Localities with abundance of *Aedes sp.* require more precise prevention and control activities in regards with Integrated Vector Management (IVM) concept.

Keywords: *Aedes aegypti*, *Aedes albopictus*, GIS

EPP039

Evaluation Of Receptivity Status For National Malaria Elimination Programme In Negeri Sembilan

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Prevention of Re-introduction Malaria Phase for National Malaria Elimination Programme were conducted to ensure that Malaysia is free from indigenous case. This took into consideration both factors of *Receptivity* and *Vulnerability*. *Receptivity* status is defined as existance of Malaria vector in locality while *receptivity* level is based on vector bionomic. Objectives of the study were to defined vector status and to classified *receptivity* level in green localities in Negeri Sembilan. There were 1692 green localities, out of which 113 localities were studied throughout 2017 as proxy. *Anopheles* larvae were access by using dipping technique in potential areas. *Resting Catch*, *Animal-Baited Trap* and *CDC Light Trap* were techniques used for adult *Anopheles* sampling. Mosquitoes collected were identified. A total of 779 localities from 1692 green localities were found to be receptive (46%). 66 localities turned out to be high receptive (4%), 713 medium receptive (42%), 545 low receptive (32%) and 368 were categorized as pseudofoci (22%). Kuala Pilah had the highest receptive localities (42%) followed by Jelebu (17%), Jempol (13%), Seremban (9%), Tampin (8 %) dan Rembau (8%). Receptive areas were from hilly, forested and farms with breeding places such as puddles,land drainages, streams and ponds. There were 314 adult *Anopheles* collected consists of 14 spesies; 18% are vectors which is *Anopheles maculatus*. *An.donaldi* is a secondary vector in Negeri Sembilan. About 46.0% green localities throughout Negeri Sembilan are receptive with different level of *Receptivity*. Hence, control activities need to be conducted with reference to the level of *Receptivity* that have been evaluated for each localities.

Keywords : Anopheles, Reseptivity, Proxy,Vector, Pseudofoci

EPP040

Melioidosis In Pahang, 2017: Epidemiological and Clinical Presentation

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Melioidosis is a severe and fatal disease caused by gram negative bacillus, *Burkholderia Pseudomallei* and endemic in Malaysia. Infection most probably occurred via contact with soil and water through inhalation, inoculation and ingestion. We carried out a retrospective review of 102 laboratory confirmed cases from Pahang Melioidosis Registry. The incidence of melioidosis was 6.1 per 100,000 populations. The mean age of cases was 51.9 years (SD 16.54). Males predominated (81.4%) and majority of cases were Malay (71.6%). The overall crude mortality rate was 19.6 %. The main predisposing medical conditions was diabetes mellitus (75.5%) followed by chronic renal failure (5.9%). About 20.6% of cases did not have any history of medical illness or premorbid condition. Fever was the most common complaint (87.3%) followed by headache (38.2%) and cough (35.3%). Epidemiological investigation revealed that 44.1% of cases had history of soil contact within their living environment such as gardening and 41.2% of cases were occupationally related. The burden of disease with significantly high mortality rates warrants special attentions to tackle this problem. Prevention and control activities targeted at high-risk groups are urgently required. Thus, the current surveillance system needs to be strengthened and might consider melioidosis as a notifiable disease under Prevention and Control of Infectious Disease Act 1988.

Keywords: Melioidosis, Pahang, *Burkholderia Pseudomallei*

EPP041

Community Ovitrap Project As Additional Measures for Dengue Prevention Activities

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Every year Seremban District recorded the highest Dengue cases and outbreak in Negeri Sembilan. Various control activities have been implemented. Existance of COMBI in the localities were utilized to help in *Aedes* monitoring through Ovitrap Community project. The aim of the study is to monitor the *Aedes* population by Ovitrap Index (OI) as well as *Aedes* dominant spesies presence in the localities. Also to enhance community participation in Dengue preventions. Forty localities around Seremban were chosen based on dengue cases and outbreak recorded in previous years. However only 22 localities committed in continuing the project. Project

started from February 2018 still ongoing and expected to end by July 2018. Twenty houses involved from each locality where they were supplied with 40 ovitraps to place indoor and outdoor. COMBI promoter were trained to take a lead in their communities. Ovitrap were checked weekly. Ovitrap positive with *Aedes* breeding were collected by the promoter and brought to the entomological laboratory for species identification and result recorded. Average of *Aedes* density through OI found to be as 28.75% below threshold that was suggested by the Ministry of Health Malaysia (OI \leq 30%). Outdoor *Aedes* population (71.49%) is higher than indoor (28.51%). *Aedes albopictus* (64.43%) found to be dominant in Seremban district compared to *Aedes aegypti* (35.57%). Study done showed that *Aedes* OI increased weekly. This creates awareness among community to carry massive prevention activities such as 'gotong royong' which indirectly resulted in declining of dengue cases in Seremban districts.

Keywords : Ovitrap Index, *Aedes*, COMBI, threshold, larvae, sentinel

EPP042

Potential of Playgrounds (Neglected Area) As Transmission Hubs for Dengue

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This study was conducted to assess the potential of playgrounds (neglected area) as transmission hubs for dengue in Tampin, Negeri Sembilan. Two sub-districts were selected for the study site which were Tampin and Gemencheh. A total of 180 ovitraps were prepared for this study. Ovitrap surveillance was conducted in 18 localities which has a playground and was listed in the priority areas I to IV from January 2015 to March 2015. The presence of *Aedes albopictus* found in this study. The correlation coefficient between survival rate and mean eggs per trap (MET) is negative 0.51. By using Pearson correlation, the p-value is 0.031. These show that there is an association between survival rate and MET. Positive ovitrap index (POI) and MET were positively correlated. Only species *Aedes albopictus* was captured in the study sites from the ovitraps installed. Playgrounds should be considered as a transmission hub for dengue.

Keywords: Playgrounds, *Aedes albopictus*, Survival rate, Density

EPP043

Diabetic Complications and its Associated Factors In Newly Diagnosed Type 2 Diabetes Mellitus Patients: A Retrospective Cohort Study At A Teaching Hospital In Nigeria

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Newly diagnosed type 2 diabetes mellitus (T2DM) patients commonly presented with complications shortly after diagnosis because of delayed in detection. Thus, the aim of this study was to determine the factors associated with diabetic complications of T2DM among newly diagnosed patients in a teaching hospital of Kano State, Nigeria. A retrospective cohort study was conducted using newly diagnosed T2DM patient case files of the hospital from 2010 to 2015. All patients' case files with follow-up data up-to 6-months of diagnosis were included. The macrovascular complications refer to any of coronary artery disease, cerebrovascular diseases or peripheral arterial diseases, whereas, the microvascular complications refers to any of retinopathy, nephropathy or neuropathy as diagnosed by the doctor. Data was analyzed using IBM-SPSS version 22.0. Multiple logistic regression analysis was conducted to determine the adjusted odds ratio and 95% confidence interval. The incidence proportion of at least one complication was 35.0%. Furthermore, the incidences of macrovascular and microvascular complications were 6.4% and 30.5% respectively. The predictors for at least one diabetic complication were no specific occupation (adjusted OR = 3.33; 95% CI: 2.07, 5.37), on insulin treatment (adjusted OR = 2.047; 95% CI: 1.19, 3.52), and on combination treatments (adjusted OR = 2.039; 95% CI: 1.28, 3.25). The diabetic complication among newly diagnosed T2DM patients was high. Aggressive health promotion and health education programs should be instituted to address late diagnosis and to address factors known to contribute in development of these complications.

Keywords: Diabetic complications, macrovascular complication, microvascular complication, T2DM.

EPP044

Determining Optimal Threshold of Blood Pressure to Height Ratio (BPHR) to Identify Prehypertension and Hypertension Among Adolescents in Secondary Schools in Melaka

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Prehypertension and hypertension among adolescents are currently underdiagnosed because diagnosis is relatively difficult as there is no single universal blood pressure(BP) cut-off level. It requires determination of height and BP percentile.

Prehypertension among adolescents is defined as systolic blood pressure(SBP)/diastolic blood pressure(DBP) of ≥ 90 th-95th percentile for age, gender and height whereas hypertension is defined as SBP/DBP ≥ 95 th percentile. Therefore, new simplified method has been developed using ratios of SBP to height and DBP to height. This study aims to determine the optimal threshold of BP to height ratio(BPHR) to identify prehypertension and hypertension among adolescents in secondary schools in Melaka. This is a cross-sectional study conducted among 712 adolescents from March to August 2016, involving anthropometric and BP measurement. SBP to height ratio (SBPHR) is calculated as SBP (mmHg)/height(cm) and DBP to height ratio (DBPHR) is calculated as DBP (mmHg)/height(cm). The mean SBP and DBP were 106.62mmHg and 67.74mmHg, respectively. The prevalence of prehypertension was 11% and hypertension was 8%. The optimal thresholds for SBPHR and DBPHR to identify prehypertension were 0.72 and 0.46 in males and 0.75 and 0.48 in females. To identify hypertension, the optimal thresholds for SBPHR and DBPHR were 0.80 and 0.50 in males and 0.78 and 0.52 in females. Accuracies were 91.9-99.8% (defined by area under ROC curve) with specificity and sensitivity of >80%. The results were consistent with findings of other studies. BPHR is simple, accurate and valid method for detecting prehypertension and hypertension among adolescents.

Keywords: prehypertension, hypertension, SBPHR, DBPHR, thresholds, adolescents

EPP045

Risk Factors Associated with Dengue Fever - Urban and Sub-Urban Analysis Among Population in Melaka Tengah From 2012 To 2017

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The incidence rate of dengue and number of outbreak localities was the highest in Melaka Tengah district compared to the other two districts in Melaka state in 2014. A situational analysis was carried out to describe dengue epidemiology by time, person, place and its associated risk factors in Melaka Tengah district in Melaka, Malaysia. All dengue cases were registered in eDengue, an online data notification system used in Malaysia. Records were reviewed retrospectively from 2012 to 2017. Dengue cases showed an increasing trend annually with overall 7955 cases registered. The highest number of cases was in 2014 with 1949 cases. Most cases in age-group 13 to 30 years old (41%), Malays (54%), males (55 %) and live in urban areas (75.6%). Dengue fever contributed to 97.7% of all cases of dengue from 2012 until 2017. Cases which were confirmed using NS1 Antigen test was 91% in 2017. About 0.3% of dengue mortality occurred in Melaka Tengah. The increasing trend most probably due to increased breeding sites in high risk localities. Attention should focused on prevention activities in high risk urban localities.

Keywords: Dengue, Urban, Melaka Tengah

EPP046

The Hazard Ratio of Stroke In Adult Population 25 Years And Above: A Prospective Cohort Study 2011 - 2017 In Bogor, Indonesia

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In Indonesia, stroke still ranks the first cause of death and disability, and the incident is high although the control program was implemented. Our study objective was to determine the strongest predictors of stroke among adult in Bogor, Jawa Barat Province, Indonesia. The study involves prospective cohort sample of 5605 of non-stroke subjects at the beginning, which was a part of the subjects from the "Cohort study of risk factor for non communicable diseases." Data were collected by interview using structured questionnaires, blood pressure and anthropometry measurements (repeated three times a year), laboratory investigations and neurological assessment every two years during the six years follow up (2011-2017). The incidence of stroke was based on anamnesis and physical examination by a neurologist. The data were analyzed by chi-square test and cox-regression. During the six-years of follow up, the incidence of stroke was 78 cases (1.6%), 28 cases in males (35.9%) and 50 cases in females (64.1%). As for the hazard rate (HR) of stroke was 330 per 100,000 person-years (95% CI 130-670). After adjusting with age, stroke predictors are hypertension with HR 2.8 (95%CI: 1.8 - 4.5), and total cholesterol levels with HR 1.8 (95%CI: 1.1 - 2.8). Hypertension is the strongest predictor of stroke incidence, hypertension prevention and control should becomes a top priority in the stroke control programs in the community.

Keywords : hazard ratio (HR), stroke, cohort study

EPP047

Implementing Innovations: "Smart Magic Pen" And "Modified Slope Container 2.0 (Mosco 2.0)" In Enhancing The Quality Of Sputum Acid Fast Bacilli Smears to Diagnose Tuberculosis In Microscopic Centers In Selangor

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Both innovations are designed after conducted study on sputum Acid Fast Bacilli (AFB) smear quality at Tuberculosis (TB) diagnostic centres throughout Selangor in 2014 under the Blinded Re-checking External Quality Assessment (BR-EQA) program. Poor sputum quality samples from patients and the aftermath of manual coiling technique for AFB smears contribute to diagnostic errors. The BR-EQA report showed increment in interpretation errors (0.5%) and more than 50% were non-AFB smear, in which 59% of sputum samples given by patients were poor quality. "SMART MAGIC PEN" can replace manual hand-coiling techniques while Modified Slope Container 2.0 (MoSCo 2.0) is used to separate mucopurulents from the saliva and preserve moisture of the sample thereby enhancing smear quality of AFB slides. Smear quality due to coiling method and poor sputum samples defies WHO standards, making it difficult for microscopic examination of smear, resulting in screening and grading errors in AFB sputum test results. Manual coiling technique takes a long time and is not uniformed, hence not conforming to WHO standards, causing treatment errors. MoSCo 2.0 and SMART MAGIC PEN is proven to meet WHO standards, hence saves time, energy and manpower in preparing the smears apart from improving the Malaysian medical lab technicians competency in interpreting results. The quality of smears produced generates more accurate test results and ensures better patient care. The cost of SMART MAGIC PEN and MoSCo 2.0 is RM50.00 and RM 1.50 respectively. This brings added value to the TB control program.

Keywords: Tuberculosis, smear, innovation

EPP048

Factors Associated with Seropositivity Of Hepatitis C Virus Antibody Among Methadone Maintenance Treatment Clients in Malaysia

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The risk of getting bloodborne viruses infection among injecting drug users are high. Among the known infection, hepatitis C (HCV) infection is the most common. We aimed to investigate factors associated with seropositivity of HCV antibody among clients who received methadone maintenance treatment (MMT) in Malaysia. We retrieved data on active MMT clients from the Malaysian Methadone Treatment Outcome Study, a cross-sectional study conducted in 103 treatment centers in Malaysia. We included clinical variables for blood; HCV, HIV and information on sociodemography and drug use profiles. Descriptive and categorical analyses were performed to examine the characteristics of MMT clients with HCV and selected variables. There were 1,233 clients who received MMT in this study with a mean age of 39.2 (SD=9.3). The mean of MMT duration was 46 months (SD=23.3). Currently 14.1% were HIV positive and half of them were previously prisoned (56.7%) while 35.8% were prisoned when they were on MMT. At baseline, 401 (33.1%) were HCV negative while 29 (2.7%) seroconvert positive and only 12 (1.1%) seroconvert negative ($p < 0.001$). Current injection status ($p=0.007$), anal sex ($p=0.001$), condom use with paid sex ($p=0.001$) and condom use with casual partners ($p=0.003$) were associated with HCV seropositivity. The seropositivity of HCV is alarming despite clients received MMT at the treatment centers. HCV has been considered a curable infection, prioritization for HCV treatment is essential to prevent further transmission in community.

Keywords: HCV antibody, Methadone maintenance treatment, Seroconversion

EPP049

Herpes Simplex Type-1 Outbreak in A Rural Primary School, Melaka 2017

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On 14 August 2017, Alor Gajah District Health Office received notification from a rural primary school named Pantai Kundor Primary School (PKPS) where 26 schoolchildren had painful mouth sores. We investigated to ascertain the magnitude

of the outbreak, find the source and implement control measures. We did case finding with a case definition of anybody in PKPS presented with lip sore with any of the following symptoms; lips oedema, buccal mucosal petichae or sore throat from 5 July to 23 September 2017. Cases were described by time, place and person. Clinical human samples sent to National Public Health Laboratory for Polymerase Chain Reaction (PCR) on HSV DNA. Case-control study conducted to find the risk with ratio 1:1. Control was defined as PKPS students who were asymptomatic. Forty-three cases were identified out of 588 with crude attack rate of 7.3%. The causative pathogen was Herpes Simplex Virus Type-1 (HSV-1). Median age of cases was 8.5 years old (± 1.4 IQR). Male to female ratio was 1.8:1, (OR=2.17, 95% CI=0.85,5.53). The risk of infection was higher among those who shared food and drinking bottles (OR=5.63, 95% CI=2.07,15.3). All cases were given symptomatic treatment. Outbreak was declared over when no cases detected after two incubation periods. This was a HSV Type-1 outbreak at PKPS from 5-23 September 2017 involving 43 cases. Virus possibly was transmitted through fomites while sharing food and drinking bottles. Health promotion and education on personal hygiene so as eating behavior was carried out and the outbreak was controlled.

Keywords: Herpes simplex 1, eating behavior, schoolchildren, fomites

FAMILY HEALTH

FHPP001

Association of Internet Addiction with Adolescents' Lifestyle: A National School-Based Survey

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Excessive internet use among adolescents poses a major public health concern that is internet addiction. This study aims to examine the prevalence of internet addiction among school-going adolescents in Malaysia and its associated lifestyle factors. A nationwide cross-sectional school-based survey was conducted in 2017 among Form 1 to Form 5 students (n=27497) from 212 randomly selected secondary schools. Data on socio-demography, lifestyle and internet use was obtained using anonymous self-administered questionnaire. Internet addiction was assessed using the Malay Version of Internet Addiction Test (MVIAT). Data were analysed using descriptive statistics, univariable and multivariable logistic regression. The majority of respondents (85.6%) were internet users. Among the internet users, 29.0% were classified as internet addicts. After adjusting for socio-demographic factors, multivariable analysis showed that adolescents who practiced unhealthy eating behaviour [inadequate fruits and vegetables intake (aOR=1.21, 95%CI:1.10-1.33),

consumed carbonated soft drinks at least once a day (aOR=1.16, 95%CI:1.07-1.26), consumed fast food at least 3 days/week (aOR=1.40, 95%CI:1.26-1.55)], had sedentary behaviour (sitting activities of ≥ 3 hours/day when not in school or doing homework; aOR=2.44, 95%CI:2.25-2.65), being current E-cigarette users (aOR=1.37, 95%CI:1.20-1.57), and being ever/current alcohol drinkers (aOR=1.20, 95%CI:1.05-1.37) were significantly more likely to have internet addiction. Internet addiction is prevalent among school-going adolescents and requires awareness and intervention. Unhealthy lifestyle behaviour was found to be associated with internet addiction and needs to be considered while developing strategies for interventions.

Keywords: internet addiction, adolescents, lifestyle, Malaysia

FHPP002

Unplanned Pregnancy and Its Associated Factors

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Unplanned pregnancy is a major concern globally. Numerous studies found various factors that can predict or determine unplanned pregnancy. The objective of this study is to determine the prevalence and the associated factors of unplanned pregnancy in Malaysia. This cross-sectional study was conducted among selected mothers with infants in the postnatal period (6-16 weeks) recruited from government primary health care clinics. A face-to-face interview was conducted by trained nurses using a structured questionnaire and mobile devices as data collection tools. The factors studied included mothers' age, husband's age, ethnicity, religion, marital status, education, occupation, household income, polygamous marriage, family support, contraception used, and disagreement of husband on contraception, smoking and alcohol consumption and history of emotional, physical and sexual intimate partner violence (IPV). A total of 5727 Malaysian postpartum mothers were involved in this survey. The prevalence of unplanned pregnancy was 42.9% (95% CI: 38.6, 47.4). The multivariable logistic regression revealed that older mothers aged 45-49 years old; aOR [8.01 (95% CI: 1.91, 33.01)] and Muslim mothers; aOR [2.47 (95% CI:1.43, 4.24)], mothers earning less than RM1000 per month, 1.71 (95% CI: 1.08, 2.71) and history of emotional intimate partner violence; aOR [1.72 (95% CI: 1.01, 2.93)] were significantly associated with unplanned pregnancy. Based on our findings, family planning has to be emphasized particularly among those who were at a higher risk on unplanned pregnancy.

Keywords: unplanned pregnancy, unwanted pregnancy, prenatal care, contraception, Malaysia.

FHPP003

Childhood Undernutrition in Malaysia And Its Associated Factors: What's The Next Step?

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The rate of undernutrition has seen a decreasing trend since 2011 to 2015 in Malaysia. Undernutrition was related to low income households as well as poor child care practices. This study aimed to assess the prevalence of underweight, wasting, and stunting in children under five years, and to determine its prevalence by socio-economic factors using a nationally representative data. Data was derived from National Health and Morbidity Survey (NHMS 2016), conducted throughout Malaysia simultaneously between March and May 2016. A total of 11,845 living quarters were selected with eligibility of mothers aged 15-49 years with last childbirth less than two years prior to data collection and children below five years. The WHO Growth Standards were applied to classify malnutrition (World Health Organization, 2006). Based on the results, the prevalence of underweight, stunting, and wasting were 13.0%, 17.0%, and 11.6%, respectively. Undernutrition was more prevalent in rural areas and it was higher among boys, unemployed mothers and low household income. In children aged below 6 months, poor index quintile were associated with underweight children, living in rural and girls were associated with stunted children, while living in rural area and mothers with primary and lower educational status associated with wasted children as shown by multivariate logistic regression analyses. For children aged 12 to 23 months old, living in rural and girls were associated with undernutrition. In conclusion, wasting, stunting, and underweight are still a problem in this country with poor socio-economic status were regarded as significant predictor for undernutrition.

Keywords: undernutrition, under five years, NHMS 2016

FHPP004

Illicit Drug Use Among Malaysian Adolescents: A Five Years Trend

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Illicit drug use is associated with multiple deleterious health outcomes and numerous social problems among adolescents. This study was carried out to determine the changed of prevalence of illicit drug use from year 2012 to 2017 among school going adolescents in Malaysian. Data was obtained from the National Health and Morbidity Survey (NHMS) 2012 and NHMS 2017, a cross-sectional survey targeted Malaysian

school-going adolescents aged between 13 to 17 years. A two stage stratified cluster sampling was applied and data collection was done using validated self-administered questionnaire for both survey. A total of 25,507 (NHMS 2012) and 27,497 (NHMS 2017) students participated in these surveys. A complex sample analysis was applied. The overall prevalence of ever illicit drug use was 4.3% (95% CI: 3.64, 5.08) which an estimated of 92,385 Malaysian adolescent's population in 2017. The prevalence rose by 2.6% from year 2012 (1.7%, 95% CI: 1.46, 2.04). Male reveal significant higher prevalence of ever illicit drug compared to female for both year [year 2017 (6.6% versus 2.0%), year 2012 (2.5% versus 0.9%)]. The trend for ever marijuana use and ever amphetamines or methamphetamines use also showed the increment pattern after 5 years period and it showed similar pattern across the gender. The findings suggest that after half a decade, the prevalence of illicit drug use increased gradually among adolescents. Prevention campaigns should target groups at risk for substance abuse and focus on improving the attitude about drug, belief about the risk of drug and peer norms against drug use.

Keywords: Prevalence, Illicit drug use, adolescent, school-going adolescents

FHPP005

Physical Activity and Sedentary Behaviour Among Malaysian Adolescents: Findings from Adolescent Nutrition Survey 2017

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Physical activity in adolescence may contribute to development of healthy lifestyle in adulthood. This study aimed to report the prevalence of physical activity and sedentary behaviour among Malaysian adolescents age 10 to 17 years old. Data was extracted from the Adolescent Nutrition Survey (ANS) 2017, a cross sectional study using a two-stage stratified sampling method. The physical activity status was determined using validated Physical Activity Questionnaire for Older Children (PAQ-C). Sedentary behaviour information was assessed using questionnaires regarding time spent on viewing TV, playing video games, computer and internet use. A total of 40,087 adolescents were involved in the study. The prevalence of physically active was 44.6% (95% CI: 42.8-46.4), and 55.4% (95% CI: 53.64-57.19) were physically inactive. Boys and younger adolescents were more active compared to girls and older adolescents. A total of 75.2% of adolescents spent more than 2 hours on screen time daily. Among adolescents who spent more than 2 hours on screen time, 55.1% of them were physically inactive and 44.9% were physically active. Higher prevalence of girls and rural adolescent engaged to screen time more than 2 hours daily as compared to boys and urban adolescents. This study indicated that the prevalence of Malaysian adolescents who were physically active was low and three-quarters of adolescent spent more than 2 hours on screen time daily. There is an urgent need for national policy makers promoting active living and reducing sedentary behaviour among adolescents in Malaysia.

Keywords: Physical activity, sedentary behaviour, screen time, Adolescents Nutrition Survey

FHPP006

Prevalence and Associated Factors of Food Label Reading Among Adolescents in Malaysia: Findings From Adolescent Nutrition Survey 2017 (ANS)

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Food label is a bridge communication between food manufacturers and consumers. It is also an instrument in shaping food choices and dietary habits. This study aims to determine the prevalence of adolescents aged 13 to 17 years in food label reading and its associated factors in Malaysia. Adolescent Nutrition Survey was a cross sectional study with a nationally representative sample that employed a two-stage stratified cluster sampling design. This study was carried out using a self-administered questionnaire. Answers were captured whether they had or never read food labels. Descriptive and multivariate logistic regression (MLR) analysis were used to analyse the data. Findings from this study showed that 84.5% (95% CI: 83.5,85.4) of adolescents had read food labels when buying or receiving food. Among those ever-read food label, 78.6% (95%CI: 78.61,77.21) read the expiry date, followed by 42.5% (95%CI: 39.9,45.1) read the halal logo, 28.7% (95%CI: 27.2,30.2) read food ingredients and 24.8%(95%CI: 23.37,26.26) read the nutrition information panel. MLR analyses showed that girls (aOR 1.65, 95%CI: 1,471,86), Indian ethnicity (aOR 2.50, 95%CI:1.89,3.31) and active adolescents (aOR 1.26, 95%CI:1.14,1.38) were more likely to read food label when buying or receiving food. This study indicates that about 85% of adolescents in Malaysia read food labels and majority of them read the expiry date. Efforts need to be taken to make sure that the food label are more interesting and adolescents are encouraged to read the important facts such as nutrition information panel and food ingredients when making their food selection.

Keywords: Food label, Adolescent, Malaysia, NHMS 2017

FHPP007

Pre-Pregnancy BMI Is Associated with Vitamin D Deficiency Among Pregnant Malaysian Women

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Vitamin D [25(OH)D] deficiency (VDD) is associated with adverse health problems in pregnancy and to newborns. This study aims to determine the prevalence of Vitamin D deficiency and its associated factors among pregnant Malaysian women. This study was part of The Seremban Cohort Study (SECOST) in which 259 pregnant women were recruited from maternal and child health (MCH) clinics in Seremban district, Negeri Sembilan between the year 2013 and 2015. Blood samples were taken at <14th weeks of gestation. Serum 25(OH)D level was categorized as severe deficiency (< 25 nmol/L), mild deficiency (25 - <50 nmol/L), insufficiency (50 - < 75 nmol/L) and sufficiency (\geq 75 nmol/L). A set of pre-tested interviewer-administered questionnaire was used to obtain information on socio-demographics, obstetric history, anthropometry and physical activity levels. Descriptive statistic was used to determine the prevalence and means. Multiple logistic regression was carried out to determine the association between factors and VDD. Mean serum 25(OH)D was 32.83 \pm 11.37 nmol/L. The prevalence of severe and mild serum 25(OH)D deficiency was 23.2% (n=60) and 68.3% (n=177), respectively. About 8.5% (n=22) had serum 25(OH)D insufficiency and none had sufficient serum 25(OH)D (>75 nmol/L). Overweight/obese pregnant women were at higher risk of VDD compared to non-overweight/obese pregnant women (AOR= 2.95, 95% CI= 1.03 - 8.47). This study showed there was a high prevalence of VDD among pregnant women in Malaysia.

Keywords: Vitamin D deficiency, serum 25(OH)D, pregnant women, Malaysia

FHPP008

Risky Sexual Behaviour Among School-Going Adolescents In Malaysia: Findings From The National Health And Morbidity Survey 2017

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Sexual activities among school-going adolescents are currently one of the major problems in public health which can lead to sexually transmitted infection (STI) and also unintended pregnancies. This study aims to determine the prevalence of the risky sexual activities among school going adolescents. A cross-sectional study was carried out among selected school students from Form 1 to Form 5 in the whole Malaysia. A self-administered structured and validated questionnaire was given to students to answer. The prevalence of ever had sex among school adolescents in Malaysia was 7.3 percent (95% CI: 6.7, 8.0) and mostly among males and Indians. The most significant risk factors from the multivariate analysis were; ever used drugs

with an adjusted odds ratio (aOR) of 10.201 (95% CI: 7.891, 13.187) followed by ever smoked with an aOR of 1.628 (95% CI: 1.365, 1.941). Among those who ever had sex, the prevalence of adolescents who did not use condoms was 87.3 percent (95% CI: 84.8, 89.4), while the prevalence of having multiple sexual partners and having sex before the age of 14 were 16.6 percent (95% CI: 14.0, 19.6) and 31.7 percent (95% CI: 28.4, 35.1) respectively. Risky sexual behaviour among these adolescents are relatively high. More health educations and programmes should be done in schools to prevent any sexual-health related issues.

Keywords: sexual activity, risky sexual behaviour*, youth, adolescent

FHPP009

Truancy Among Malaysian School-Going Adolescents: Where Are We Now?

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Truancy among adolescents is a serious problem around the world, and it is associated with various negative health and socio-economical outcomes. This study aims to describe the prevalence of truancy among school-going adolescents in Malaysia. Data from the National Health and Morbidity Survey (NHMS) 2017 were used. A two-stage stratified cluster sampling was applied and 27 497 school-going adolescents aged between 13 to 17 years old participated in this survey. Data collection was done using a validated self-administered questionnaire adopted from the Malaysia Global School Health Survey (GSHS) 2012. The national prevalence of truancy was 29.4% (95% CI: 27.78, 31.06). The prevalence of truancy among male adolescents were higher than female adolescents (Male: 32.6%, 95% CI: 30.61, 34.65; Female: 26.2% (95% CI: 24.46, 28.10). Adolescents which parents staying together were significantly less truant [27.9% (95% CI: 26.21, 29.67)] than those which parents were not living together [36.2% (95% CI: 34.20, 38.26)]. There was no significance difference between truancy and school locality, forms and ethnicity. The prevalence of truancy was slightly low compared to the GSHS 2012 [30.9% (95% CI: 29.34, 32.44)], but the difference was not significant. Truancy remains a significant problem among the adolescents in Malaysia. Parents, teachers and school management need to be aware of their shared responsibility to combat truancy among the adolescents.

Keywords: truancy, NHMS, adolescent

FHPP010

Sugar-Sweetened Beverages Consumption Among Adolescents In Malaysia: Adolescent Nutrition Survey 2017

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Accessibility and availability of sugar-sweetened beverages (SSBs) which are liquids sweetened with various form of added sugar in almost everywhere has risen the obesity issue among adolescents. This study aims to investigate the associated factors in terms of sex, ethnicity, school category, school locality, and body mass index-for-age (BMI-for-age) with consumption of selected SSBs among adolescents in Malaysia. Data for this study was obtained from Adolescents Nutrition Survey 2017 with a national representative sample of school-going adolescents aged 10-18 years. Face-to-face interviews were conducted using food frequency questionnaire by nutritionists to obtain information of SSBs intake. Body weight and height of respondents were measured for calculation of BMI. A total of 2021 respondents were participated into this study and data from 2009 respondents were used for statistical analysis. General Linear Model was used in statistical data analysis. Respondents comprised of 50.0% boys, 65.1% Malay, and 68.0% secondary school students. Majority of the adolescents were normal weight (63.9%). Almost all (98.6%) respondents ever consumed SSBs with mean intake of 2059.3 ml in the past one month. Based on the analysis, sex ($F= 13.827$, $p <0.001$) and BMI status ($F= 5.719$, $p = 0.001$) were significantly associated with SSBs consumption. SSBs consumption is common among school-going adolescents in Malaysia. Further investigation of SSBs consumption and other associated factors such as accessibility of SSBs in school neighbourhood will provide information that can help policy makers or program managers in designing more effective strategies to promote healthy food choices among Malaysian adolescents.

Keywords: sugar-sweetened beverages, teenagers, healthy eating, NHMS 2017

FHPP011

Being Bullied Is Associated with Depression Among Malaysian School-Going Adolescent: National Health and Morbidity Survey 2017.

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Depression is a global mental health problem among adolescents and it may caused by various factors such as being bullied etc. This study aims to determine the prevalence of depression among Malaysian school adolescent and its association with bullying. Data from National Health and Morbidity Survey 2017 was used. Total of 26 872 school-going adolescents were randomly selected. Validated Depression, Anxiety, Stress Scale (DASS-21) was used in the study as tool. Descriptive and

multiple logistic regression analysis has been done using SPSS version 20 to identify the prevalence of depression and its associated factors. A total of 18.3% of Malaysian school going adolescents were depressed. By sociodemographic factors, Indian showed 2 times odd as compared to Malays, and those whose parents not living together have 1.5 times odd of having depression. Adolescents that were being bullied reported to be 3 times odd of having depression as compared to those who were not. The prevalence of depression among school going adolescent was high and significantly associated with bullying. Preventive strategies should be implemented to stop bullying at school and therefore lessen the chance of depression among adolescent.

Keywords: Depression, Bully, DASS-21, School-going adolescent

FHPP012

Non-Pharmacological Measures for Preventing Opportunistic Infection in Patients With Haematological Malignancies: A Systematic Review

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Haematological malignancies are cancers affecting the blood, bone marrow and lymph nodes. Non-pharmacological interventions play an important role in preventing opportunistic infections in these patients. The objective is to evaluate the efficacy and safety of non-pharmacological measures for preventing opportunistic infection in patients with haematological malignancies. Electronic databases were searched using standard methods from the Cochrane Haematological Malignancies. Five randomized controlled trials (RCTs) were included as follows: One study evaluated a four-arm comparison between chlorhexidine-nystatin, nystatin, chlorhexidine and saline mouth rinse. One study compared the use of amine fluoride stannous and sodium fluoride mouthwash. One study compared the use of well-fitted mask with no mask. A single study evaluated the use of chlorhexidine silver-sulphadiazine coated center venous catheter versus standard, uncoated catheters in cancer patients. Lastly, one study evaluated low-bacterial diet versus standard diet. The effectiveness and safety of various interventions included in the review, such as various mouth wash, mask and low-bacterial diet need to be evaluated further in high-quality RCTs in a dedicated setting among patients with haematological malignancies.

Keywords: non-pharmacological, malignancies, opportunistic infection, systematic review

FHPP013

Prevalence of Adverse Birth Outcome Among Women With Chronic Hypertension And Pregnancy Induced Hypertension In Malaysia: NHMS MCH 2016

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Hypertension was associated with a higher risk for adverse pregnancy outcome such as perinatal mortality, premature birth and low birth weight. The objective of the study was to determine the prevalence of adverse birth outcome among women with chronic hypertension and pregnancy induced hypertension(PIH). The study used data from National Health and Morbidity Survey, Maternal and Child Health Survey 2016. It was a cross sectional study with stratified random sampling design. Consent form were made available to every respondent. All mothers aged 15-49 years with last childbirth less than 2 years prior located within the selected living quarters were included in the study and given structured questionnaire via face-to-face interview. Descriptive analysis using complex sampling design and chi square analysis was used to describe the relation of adverse birth outcomes among chronic hypertensive pregnant women and with gestational hypertension. The overall prevalence of chronic hypertension and pregnancy induced hypertension was 0.9% and 4.4% respectively. The prevalence of adverse birth outcome were higher among mothers with chronic hypertension compared to PIH such as premature birth [22.4%(13.6,34.4) vs 15.6%(12.4,19.5)], low birth weight [22.1%(13.1,34.8) vs 21.4%(16.5,27.2)] , poor Apgar Score [11.7(5.4,23.4) vs 9.4%(5.3,16.2)], ever stillbirth [2.7(1.0,6.8) vs 1.3%(0.4,3.7)] and cesarean delivery [49.0%(39.1,58.9) vs 36.6%(30.5,43.2)]. The results emphasize that it is prudent to observe pregnant woman more carefully to prevent the risk of adverse pregnancy outcomes.

Keywords: hypertension, birth outcome, pregnancy outcome

FHPP014

Bullying Victimization Among Truant Adolescents In Malaysia

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Bullying is widespread among school children where up to 20% of students stated that they would play truant to avoid being bullied. This study was carried out to determine the proportion of being bullied among truant students by socio-demographic characteristics. Data was obtained from the National Health and Morbidity Survey 2017, a cross-sectional survey which targeted Malaysian school-going adolescents aged 13 to 17 years. A two stage stratified cluster sampling was

applied and data collection was done using validated self-administered questionnaire. A total of 27,497 students participated in this survey. A descriptive analysis complex sample was applied. The overall prevalence of truancy and students who have been bullied were 29.4% (95% CI: 27.8, 31.1) and 16.2% (95% CI: 15.3, 17.1) respectively. Approximately one-fifth of truant students (21.1%) reported that they were bullied. Study revealed a significantly higher proportion of bullying among male students [23.1% (21.3, 25.0)] than female students with truant behaviours [18.7% (16.4, 21.1)]. Similarly, older truant students (16-17 years) had a higher proportion of bullying [25.0% (22.8, 27.2)] compared to the younger students (13-15 years) [16.1% (13.9, 18.6)]. There was a significantly higher proportion (33.2%) of being bullied among truant Indian students compared to Malay or Chinese students. Truancy is an early warning sign for future problems. Intervention programs aimed to reduce truant behaviours should incorporate knowledge of the factors associated with bullying.

Keywords: Adolescent, Bullying, Malaysia, School-going adolescents, Truancy

FHPP015

Clearinghouse for Research on Disability: Caring For Malaysian Older Persons

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The Clearinghouse for Research on Disability is a disabled friendly website that collects, organises and disseminates both local and international publications as well as grey literature on all types of disability in all age groups. This paper examines the characteristics of materials on older persons research available in the Clearinghouse website. A periodic literature search was performed by dedicated Clearinghouse website officers to look for new and updated materials on older persons. Search terms included elderly, older person, senior citizen and disability. Data was extracted, and materials vetted for quality and content before being uploaded onto the website. Descriptive analysis of materials was performed. Totally, 136 research materials on older persons contributed towards 7.8% of the overall materials on the website. Of these, more than half (52.2%) were full texts, while 25.0% were local studies and 75.0% were international. Research on physical disability was most common (49.3%) followed by mental disability (18.4%) and multiple conditions (16.9%). The most common study design was cross-sectional (56.6%) followed by cohort (19.9%), with the scope of study encompassing health (91.9%) and social issues (8.1%). The distribution of older persons materials in the website reflects the availability of research at both local and international levels. Promotion and gathering of more local studies on older persons is crucial. Continued expansion of Clearinghouse via booths at conferences as well as raising public awareness is

essential. In spite of having a good database, more research materials on older persons are needed, especially local literature.

Keywords: clearing house, literature, disable friendly, older people

FHPP016

Acupuncture as a Complementary Treatment for Opioid Dependence Patients on Methadone Maintenance Therapy (MMT)

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Acupuncture is used in Malaysia as a form of complementary medicine. There is evidence on usage for addiction which shows release of substrates in mediating analgesic effects. This study was conducted to determine the efficacy of acupuncture as a complementary treatment in reducing the dose of methadone by 50% among opioid dependence patients on MMT. It was conducted in Kuala Lumpur Hospital (HKL), Batu 9 Cheras Health Clinic and Jinjang Health Clinic from August 2015 until November 2017. Patients recruited were diagnosed to have opiate dependence based on the fourth edition of Diagnostic and Statistical Manual of Mental Disorders (DSMIV) criteria, on MMT for at least one year, drug free at least two weeks prior to study, on Methadone dose 40 mg or less and a Malaysian citizen. Four patients completed the study. The selected patients would either receive true or sham acupuncture. Based on this case series, randomization of participants showed three patients who received true acupuncture, where two of them achieved reduction in methadone dose of more than 50% from the baseline at 14 weeks and throughout the study while another patient showed 33.3% reduction of methadone dose. One patient who received sham acupuncture showed similar reduction of methadone dose more than 50%. From these cases, it is concluded that acupuncture could reduced the dose of MMT among opioid dependence. Since acupuncture is evolving from invasive to non-invasive techniques, both methods maybe beneficial to be studied in RCT settings.

Keywords: Acupuncture, Methadone Maintenance Therapy, Complementary Medicine

FHPP017

Predictors of Child Overweight and Obesity: A Cross Sectional Study

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Childhood obesity posed a threatening health epidemic especially in developing countries. This study aims to determine the early life factors that contribute to

childhood overweight and obesity among preschoolers in Putrajaya in 2017. This is a cross sectional study involving 897 preschoolers focusing on sociodemographic, pre- and perinatal factors, infant feeding and weaning practices, early child care, family structure and parental behaviours, and psychosocial factors. Body weight and height measurements were performed on the preschoolers and questionnaires were distributed to the mothers. BMI was used to determine child's overweight and obesity status following BMI-for-age z-scores of WHO Growth Standards 2006 and WHO Growth Reference 2007. The mean age of the preschoolers were 5.4 ± 0.58 years with the prevalence of overweight and obese children at 7.3%. Increasing child's age (AOR: 2.595; 95%CI: 1.281 - 5.254), higher mother's education level (AOR: 4.909; 95%CI: 1.065 - 22.621), higher maternal BMI (AOR: 1.122; 95%CI: 1.034 - 1.219) and unknown caregiver's education status (AOR: 2.907; 95%CI: 1.144 - 7.386) were strongly associated with child obesity. Hence, three domain of early life factors of socio-demographic, pre-and perinatal, and early childcare can predict childhood overweight and obesity. Future longitudinal study should be conducted in future to address this early life predictors of childhood overweight and obesity as to reduce the prevalence of obesity and related non-communicable diseases in the country.

Keywords: childhood obesity, early life, preschool

FHPP018

Association Between Maternal Socio-Demographic Risk Factors And Preventable Perinatal And Under Five Mortality In District Of Port Dickson

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Death of an infant or a child has always been a devastating experience for the mother and of concern in public health. The objectives of this study were to assess the trend of perinatal and under-five mortality and to identify maternal socio-demographic factors associated with preventable death. A retrospective cross-sectional study was conducted among all perinatal and under-five mortality cases reported to Maternal and Child Health Unit, District Health Office of Port Dickson from 2015 to 2017. Data were extracted from the antenatal records and mortality consolidation reports. Modified ICD-10 was used to classify the cause of death. Overall, the trend of perinatal and under 5-year-old mortality was increasing from the year 2015 to 2017. Out of 80 mortality cases included in the study, 26(32.5%) were considered preventable. In bivariate analysis, factors such as maternal age group, marital status, and household income were found to be significantly associated with preventable death. However, after controlling for the confounding effects of various factors, maternal age group was the only factor found to have a significant robust association. Compared to the reference group (20-34 years), younger (≤ 19 years) mothers were associated with a higher risk of preventable death (AOR: 8.14; 95% CI 1.70,10.97) while in older mothers, the increased risk was not statistically significant ($p>0.05$). Younger mothers had increased risk of having

preventable child mortality which might be due to socio-economic and biological factors, thus they should be followed up more closely during the antenatal period.

Keywords: maternal socio-demographic, preventable, perinatal, under-five, mortality

FHPP019

Risk Behaviours Among Injecting Drug Users in Negeri Sembilan: Results From Integrated Biological And Behavioral Survey

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Injecting drug users (IDUs) have played a major role in the spread of HIV in many states in Malaysia. Therefore, this study aims to identify the personal profile of IDUs and their health-seeking behavior in the first wave of integrated biological and behavioral survey in Negeri Sembilan. A cross-sectional study was conducted in Felda Jelai, Tampin and Palong 7 & 8, Jempol between May to October 2017,. Due to the hidden nature of injecting drug use, we used the peer referral method of respondent-driven-sampling to recruit 120 male IDUs in both localities. Behavioral data were collected through face-to-face interviews after which a sample of blood was taken for rapid HIV testing. The overall prevalence of HIV was 13.3%. The mean age of the participants was 36 ± 7.7 years, and the majority (99.2%) were Malays. Half of the participants had never been married, 72.5% completed secondary school, and a majority (83.3%) had an income of less than RM 1,000 per month. Heroin was the drug of choice for 96.7% of participants, and 54.2% first started injecting drugs at the age 20 to 29 years old. Over the last month, 40.8% had used a non-sterile needle, and 59.2% shared injections. Condom use during the last intercourse was only 35.8%. Unsafe injection and sexual risk behavior are still frequent among IDUs, thus intensified efforts are needed to prevent further spread of HIV among IDUs and their partners in Negeri Sembilan.

Keywords: injecting drug users, integrated biological behavioral survey, HIV infection

FHPP020

Milk/Milk Products Intake Among Malaysian Adolescents: Finding from Adolescent Health Survey (AHS) 2017

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Milk/milk products intake during adolescence are highly encouraged for its nutrient rich components to support growth, development of bones and absorption of calcium. Recommendations for milk/milk products intake for Malaysian adolescents is at least two servings per day. This study aims to determine milk/milk products intake among adolescents in Malaysia. A cross sectional study was conducted among secondary school-going adolescents between March and May 2017 using a two-stage cluster sampling design. Two hundred and twelve (212) schools were selected and more than 30,000 students were eligible to participate in this survey. Data analysis was done using SPSS version 21.0. Overall, about 31.0% (95%CI: 30.02, 31.99) students consumed milk/milk products at least two servings per day in the past 30 days. Kelantan (24.2%; 95% CI: 20.79, 27.96) and Pulau Pinang (24.4%; 95% CI: 22.07, 26.80) showed the lowest prevalence. Significantly, the upper secondary students consumed less milk/milk products (27.9%, 95%CI: 26.51, 29.38) compared to the lower secondary students (33.0%; 95%CI: 31.82, 34.11). Chinese students reported the lowest frequency in consuming milk/milk products (21.9%; 95%CI: 19.99, 23.88) compared to other ethnics. In conclusion, milk/milk product intake of Malaysian adolescents was less than 50%. Consumption that is below recommended levels may contribute to the negative effect on bone and dental health of adolescents. Suggestion for program managers or stakeholders to aggressively pledge on milk/milk product consumption as one of the key nutrients in daily healthy dietary intake.

Keywords: Milk, milk product, adolescents, Malaysian Adolescents Health Survey

FHPP021

Predictors for Inadequate Knowledge And Negative Attitude Towards Childhood Immunization Among Parents In Hulu Langat, Selangor, Malaysia

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Vaccine hesitancy among parents has led to re-emergence of vaccine preventable diseases. In Malaysia, measles cases had increased by three times in 2015 compared to previous year. immunization coverage has always been above 95% since 2009. However in 2014, Mumps-Measles-Rubella (MMR) coverage has a significant drop to

93.4%. The aim of the study was to identify predictors for inadequate knowledge and negative attitude towards childhood immunization among parents in Hulu Langat, Selangor. A cross sectional study design was conducted from January to July 2016 with 760 respondents. Respondents were selected by cluster random sampling and a validated self administered questionnaire was used. The majority of respondents were female (70%), Malay (87%), employed (92%) and parents with tertiary education (99.7%). In this study, 12.8% parents have an inadequate knowledge on childhood immunization and 47.6% have a negative attitude towards childhood immunization. The predictors of inadequate knowledge of childhood immunizations were last child's age of 2 years old or more (AOR=1.413 95% CI 0.28-0.69); parents without tertiary education (AOR=2.02 95% CI 1.15-3.54); parents without educational exposure on childhood immunization (AOR=2.87 95% CI 1.59-5.18) and parents who obtained information on childhood immunization from non healthcare provider (AOR=2.66 95% CI 1.50-4.70). Predictors for negative attitude on childhood immunizations were being male (AOR=1.44 95% CI 1.04-2.01); parents without tertiary education (AOR=1.67 95% CI 1.04-2.68); household income of less than RM5000 (AOR=1.85 95% CI 1.28-2.67) and unsatisfactory religious belief (AOR=2.76 95% CI 2.03-3.75). Therefore, these predictors should be considered in any health intervention on childhood interventions for parents.

Keywords: Childhood immunizations, Parents, Knowledge, Attitude, Predictors, Malaysia

FHPP022

Sociodemographic Factors and Pregnancy Outcomes of Teenage Pregnancies In Tenom In 2017

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Pregnancy at age 13 to 19 years old is defined as teenage pregnancy and was known to effect pregnancy outcome such as prematurity and low birth weight. Study aims to determine sociodemographic factors of teenage pregnancies and its outcomes in Tenom. All teenage pregnancies booked in all Health Clinics in Tenom was included in this study. Information such as nationality, marriage status and education level were included as factors. Data was collected from antenatal cards of teenage mothers. Study shows that in 2017, 105 teenage pregnancies were booked in all Health Clinic in Tenom. Among 105 teenage pregnancies, 97(92.38%) were Malaysian and 8(7.62%) were non Malaysian. 75(71.43%) were married and 30(28.57%) were not married. 82(78.10%) received education up till secondary school level, 12(11.43%) up till primary school level and 11(10.47%) with no formal education. As for pregnancy outcomes, 8(7.62%) was noted gave birth before 37 weeks gestation and 6(5.71%) out of 105 teenage pregnancies result in baby born with birth weight less than 2500g. Given by this study, it is shown that Sexual and Reproductive(SRH) education should ideally given from primary school and secondary school students to have a better impact on awareness of teenage pregnancy.

Keywords : Tenom, teenage pregnancy, pregnancy outcomes

FHPP023

Factors Associated with Bullying Victimization Among Adolescents In Malaysia

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Victimization due to school bullying is associated with behavioural, emotional, and social problems. The aims of the present study were to assess the prevalence and correlates for bullying victimization among Malaysian adolescents. This study used data from the Adolescent Health Survey 2017, a cross-sectional nationwide survey which employed a self-administered questionnaire adapted from the Global School-based Health Survey (GSHS). The prevalence of bullying victimization among adolescents aged 13-17 years (N = 27,458) was assessed and its associated factors determined using multivariate logistic regression analysis. The overall prevalence of being bullied on one or more days during the past 30 days was 16.2%, 18.7% among males and 13.7% among females. Overall, the prevalence decreased with age. The strongest factors associated with bullying victimization were having ever been involved in physical attacks (aOR = 2.46, 95% CI 2.17, 2.79), having ever used drugs (aOR = 2.44, 95% CI 1.78, 3.34), having ever been in physical fights (aOR = 1.97, 95% CI 1.74, 2.23), being younger than 14 (aOR = 1.95, 95% CI 1.59, 2.38), and having ever attempted suicide (aOR = 1.83, 95% CI 1.51, 2.21). Meanwhile protective factors include being of Chinese ethnicity (aOR = 0.71, 95% CI 0.58, 0.88), having close friends (aOR = 0.59, 95% CI 0.47, 0.73), and the perceived presence of peer support (aOR = 0.67, 95% CI 0.61, 0.75). Bullying is a multi-faceted phenomenon and the factors that have been identified in this study should be given due consideration in planning effective school-based anti-bullying interventions.

Keywords: bullying, adolescent, risk factors, Malaysia, students

FHPP024

Body Weight Misperception and Their Action Among Malaysian Adolescent: Findings From Adolescent Nutrition Survey 2017.

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Body weight misperception refers to the wrong perception either they underestimated or overestimated their own body weight irrespective of actual body mass index. This study aims to determine action taken according to body weight

misperception among Malaysian adolescents. A cross sectional study with two-stage stratified cluster sampling data was obtained from Adolescents Nutrition Survey 2017 which involved adolescents aged 10 to 17 years old. Socio-demography and body weight perception data were obtained using a self-administered questionnaire. Descriptive analysis using complex sample was performed for data analysis. Findings showed that among adolescents who were actually in overweight categories but wrongly perceived themselves to be thin, 15.7% (95% CI: 12.58, 19.42) wanted to increase weight, 15.5% (95% CI: 12.60, 19.00) have no plan to change their weight and 6.8% (95% CI: 5.21, 8.85) just wanted to maintain their weight. Similar pattern showed among adolescents who were actually thin but wrongly perceived overweight, 31.3% (95% CI: 15.94, 52.33) wanted to lose weight, 20.6% (95% CI: 10.18, 37.40) have no plan to change their weight and 8.9% (95% CI: 3.54, 20.78) just wanted to maintain their body weight. Regardless of the perception, the action taken would be considered inappropriate if an overweight adolescent wanted to increase weight and thin adolescents wanted to lose weight. This finding should be utilised by relevant programme managers in developing school-based health promotion program through curriculum syllabus to inculcate healthy body image.

Keywords: Body weight, misperception, Adolescent Nutrition Survey.

FHPP025

Social Determinants And Mental Health Problems In Malaysia: Any Changes After 20 Years?

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Evidence from low- and middle-income countries emphasize the importance of social determinants in describing changes in the trends of mental health problems. This study aims to compare differences in social determinants of mental health problems in 2015 and 1996. We analysed data from a repeated nationwide cross-sectional study, the National Health & Morbidity Surveys (NHMS 1996 and 2015), which employed multi-stage sampling design. Mental health problems among 16 years and above were assessed using locally validated self-administered General Health Questionnaire (GHQ-12) in both years. A threshold of 3/4 points was used to classify mental health problems. Analysis found that the prevalence of mental health problems in 2015 was doubled than the prevalence in 1996 (22.8%, 95% Confidence Interval, CI: 21.7, 24.0 vs 10.2%, 95% CI: 9.7, 10.8). Mental health problems were significantly higher among females in both years. By ethnicity, in 1996, mental health problems were significantly higher among Indians compared to Malays (13.8% vs 9.2%). In contrast, in 2015, the problems were significantly higher among Other Bumiputras compared to the Malays (31.7% vs 22.0%). Socially disadvantaged groups; widowed/divorcees, low education level and unemployed, were more prevalent to have mental health problems in 1996. While, in 2015, the problems were noted across all social groups. Various factors might influence the differences in these

social determinants throughout the 20-year period; such as the effect of economic challenges and urbanisation. Intervention strategies planned should consider these inequities distributed across Malaysian population.

Keywords: mental health, GHQ12, social determinants

FHPP026

Socio-Demographic, Risky Behaviors, And Perceived Stigma Experiences Among Transgender Population in Seremban, Negeri Sembilan: Descriptive Findings From An Integrated Biological And Behavioral Survey

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Transgender people are vulnerable to HIV infection. Despite their high vulnerability, we are still lacking in the epidemiological and surveillance data of this population. In this study, we sought to explore their socio-demographic characteristics, sexual risk behaviors, substance abuse, access to treatment as well as perceived stigma and discrimination. A cross-sectional study was conducted between August and November 2017. Participants were recruited from various sites in Seremban District using respondent-driven sampling method. Behavioral data were collected through structured questionnaire interviews, and rapid finger-prick HIV testing was performed. Descriptive data analyses were conducted using SPSS version 22.0. This study included 104 transgenders with a mean age of 32.1 years (SD = 8.1). The overall prevalence of HIV was 23.1%. Almost one in ten had never been tested for HIV prior to the study. 13.5% reported not using condoms during their last sex, 86.5% had engaged in sex in exchange for money or gifts, and only 24% visited an STI clinic for a check-up within the past 3 months. About 14.4% reported having used some form of amphetamine-type stimulant drugs, while 24% knew that their client had used drugs before sex. A substantial number of participants experienced stigma and discrimination related to fear of HIV transmission (13.5%), disapproval of transgender identity (51.9%) and ill-treated while seeking health care (10.6%). Risky behaviors among sexual active transgender are of great concern, suggesting an urgent need to expand tailored prevention interventions for this key population.

Keywords: transgender, risky behavior, perceived stigma, HIV, respondent driven sampling

FHPP027

Why Do Male Adolescents Drink Alcohol? Findings from The Adolescent Health Survey 2017

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The World Health Organization (WHO) estimates that alcohol consumption contributes to one in 20 deaths globally. Adolescents are the most vulnerable to the initiation of alcohol drinking, which exposes them to numerous health and social consequences such as motor vehicle accidents, suicide, interpersonal violence, unintentional injuries, risky sexual activities, academic problems and poisoning. This study was aimed to determine factors associated with current alcohol drinking among male adolescents. Data from the National Health and Morbidity Survey (NHMS) 2017, a nationwide cross-sectional survey using a two stage stratified cluster sampling design was used. The target population were school going adolescents aged 13 to 17 years. Descriptive analysis and logistic regressions were applied. The prevalence of male current drinkers among the adolescents surveyed was 12.8% (95% CI: 11.3, 14.5). Those who were current drug users [aOR: 13.72 (95% CI: 10.94, 17.21)]; current cigarette smokers [aOR: 1.81(95% CI: 1.578, 2.08)]; attempted suicide [aOR: 2.05 (95% CI: 1.66, 2.52)]; having depression [aOR: 1.64 (95% CI: 1.42, 1.90)]; truant [aOR: 1.18 (95% CI: 1.04, 1.35)] and physically abused at home [aOR: 1.64 (95% CI: 1.39, 1.95)] were more likely to be current drinkers. Knowing that these factors were highly associated with alcohol consumption, relevant agencies should work together in preventing and solving alcohol-related problems among adolescents in Malaysia. Nevertheless, parents should also play a pivotal role in monitoring their children's activities and whereabouts.

Keywords: adolescents, alcohol, male adolescents

FHPP028

Peer Support Among School-Going Adolescents In 2012 And 2017: Are There Any Differences?

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Adolescence is the phase where peer support plays an important role especially among school-going adolescents. Positive peer support leads to positive outcomes such as increasing levels of self-esteem, confidence and could also prevent them

from negative aspects. The objective of this study is to determine the prevalence of peer support among school-going adolescents by socio demographic profiles and to compare the prevalence between 2012 and 2017. This study was part of the National Health and Morbidity Survey (NHMS) 2017 involving 27,497 randomly selected students aged 13 to 17 years old from randomly selected schools all over Malaysia. Self-administered validated questionnaires were given to the students and the data was analyzed using SPSS version 21. Peer support was significantly higher among females [58.6% (95%CI: 55.62, 61.55)] compared to males [41.4% (95%CI: 38.45,44.38)]. It was also significantly high among Malays [64.6% (95%CI: 60.47, 68.49)], followed by Chinese [14.2% (95%CI: 11.27, 17.68)] and Indian [7.4% (95%CI: 5.97, 9.21)]. However, no significant difference was observed between locality of the school and the classes of the students. In comparison with previous study, there was no significant difference of the prevalence of peer supports in 2012 [44.3% (95%CI: 42.6, 46.0)] compared with the prevalence in recent survey in 2017 [44.2% (95%CI: 42.6, 45.8)]. Peer support among school-going adolescents was less than 50% and peer programs are needed to develop healthy social skills and peer relationships among adolescents.

Keywords: peer support, adolescents, Malaysia, NHMS

FHPP029

Common mental health disorder: Prevalence and health related quality of life among antenatal mothers attending health clinic in Negeri Sembilan

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Pregnancy increases the vulnerability to emotional and psychological conditions. It can have adverse effect on quality of life of pregnant women. Worldwide about 8-10% of pregnant women experience mental disorder. The aim of this study was to estimate the prevalence of common mental health disorder among antenatal mother and to assess the health related quality of life. A cross sectional study was conducted among pregnant women receiving antenatal care in 14 health clinics in Negeri Sembilan. The Depression, anxiety and stress scale (DASS-21) questionnaires were used to screen for mental health disorders. Quality of life was evaluated using EuroQol five dimensions (EQ-5D) questionnaire. A total of 225 participants were enrolled. The mean age of respondents was 30.16 (SD=4.67) years. The prevalence of common mental health disorder among antenatal mothers were 16.9%. The prevalence of stress, anxiety and depression were 8%, 13.8% and 5.3% respectively. About 3% of them had severe stress, anxiety and depression. The health related quality of life assessment showed pregnant women with common mental health disorder reported pain and discomfort 28.9%(11), limitation of usual activities 21.1%(8), limited mobility 18.4%(7) and poor self-care 7.9% (3). Pregnant women with common mental health disorder significantly had limited mobility

(p=0.017, OR=8.63, CI:2.62-28.45). This study showed higher prevalence of common mental health disorder especially anxiety among antenatal mothers in Negeri Sembilan. Common mental health disorder among pregnant women significantly affect their mobility. Therefore, it is important to screen pregnant women for common mental health disorder to ensure good quality of life during the antenatal period.

Key word: Antenatal, mental health disorder, quality of life.

FHPP030

Prevalence of Chronic Illness And Its Impact On Quality Of Life Among Elderly Population In Shah Alam, Selangor

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Life expectancy in Malaysia has increased but it does not necessarily lead to a better quality of life as older people are commonly afflicted with non-communicable diseases. The objective of this research is to determine the prevalence of chronic illness and its impact on quality of life among the elderly in Shah Alam, Selangor. A cross-sectional study was conducted among elderly 60 years old and above in Seksyen 16, Shah Alam. Validated questionnaires adapted from previous studies were used to assess chronic illness and outdoor leisure activities. Quality of life, which comprised of social, environmental, physical and psychological domain, was assessed using the validated WHOQOL-BREF Questionnaire. A total of 150 respondents participated with the mean age of 65.93 years (\pm 5.73). The prevalence of chronic illness was 72.7%. For quality of life domains, social domain had the highest mean score of 77.28 (\pm 17.49) and physical domain had the lowest score of 69.72 (\pm 17.55). Higher mean walking score was significantly associated with absence of chronic illness (p=0.03). There was significant correlation between walking score and quality of life in the physical domain ($r=0.318$, $p<0.001$), psychological domain ($r=0.216$, $p=0.008$) and environmental domain ($r=0.264$, $p=0.001$). Higher physical domain score was associated with absence of chronic illness ($p<0.001$). In conclusion, the prevalence of chronic illness is high among the elderly but they had good quality of life in all the domains. Walking should be advocated as it can be an effective physical activity to prevent chronic illnesses and improve quality of life.

Keywords: non-communicable disease, WHOQOL-BREF, aging, physical, walking score

FHPP031

Teenage Pregnancy and Its Adverse Outcome: Findings From A Nation-Wide Study In Malaysia

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Teenage Pregnancy is defined as a pregnancy occurring in adolescents aged 15 to 19 years by the World Health Organization (WHO). This study aimed to determine maternal and perinatal outcomes of teenage pregnancy. This cross-sectional nationwide study implemented stratified random sampling design. A face to face interview was conducted by research assistant using a structured questionnaire installed into mobile devices. A total of 18,247 respondents aged 15 to 19 years old were involved in this study from 1st March 2016 to 30th May 2016. The prevalence of teenage pregnancy was 15.5% (95% CI: 11.3, 20.8). Teenage pregnancies were significantly associated with higher risk of preterm delivery compared to those 20 years or more with 12.9% (95% CI: 9.4, 17.5) and 6.4% (95% CI: 4.8, 8.4) respectively. Significantly more teenage pregnancies did not receive antenatal care compared to those 20 years or more with 3.8% (95% CI: 1.0, 13.0 and 0.1%; 95% CI: 0.0, 0.6). However, there are no significance difference in the prevalence of pregnancy induced hypertension, diabetes, anaemia during pregnancy, instrumental delivery, or postpartum haemorrhage between these two groups. Teenage pregnancy remains one of major contributors of maternal and child mortality and morbidity. The findings suggest there is still an unmet need of antenatal care for teenage pregnancies. Maternal and perinatal adverse outcomes could be avoided with the optimum care during pregnancy.

Keywords: Teenage pregnancy, maternal outcome, preterm delivery, perinatal outcome, postpartum haemorrhage.

FHPP032

Anxiety Among Adolescents in Malaysia

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Anxiety disorders is common physiological disorder. The risk greatly increases during adolescence period. The objective of this study is to determine the prevalence of anxiety among school-going adolescent in Malaysia and the associated risk factors. A cross sectional study was conducted among school-going adolescents aged 13-17 years in Malaysia. The sampling frame used was from the list of secondary schools from the Ministry of Education and Ministry of Rural and Regional Development. A self-administered questionnaire was used as a tool in this survey. A total of 30496

students were randomly selected. A self-administered Depression, Anxiety, Stress Scales questionnaire was used in this study. Descriptive analysis was done using SPSS version 20. In general, the prevalence of anxiety among adolescents was 39.7% (95% CI:38.39-41.06). The prevalence of anxiety was higher among females with 42.3% (95% CI:40.66-44.01) compared to males 37.1% (95% CI:35.31-38.86). By ethnicity, Bumiputera Sabah was the highest prevalence with, 47.3% (95% CI:44.66-52.05) and by strata, the schools in urban area showed higher prevalence with 40.1% (95% CI:38.02-42.25). About 74% (95% CI:68.26-79.10) of those with anxiety symptoms used marijuana, and 52.1% (95% CI:48.53-55.73) had sexual activity. In conclusion, the prevalence of anxiety among adolescence is worrying. Accumulative efforts should be done such as effective awareness campaigns about anxiety and improving our education system by not only targeting the school children but to parents, teachers and surrounding community.

Keywords: anxiety adolescents, National Health and Morbidity Survey Malaysia.

FHPP033

Perception on Hpv Self-Sampling in A Public Medical Centre

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Human Papillomavirus (HPV) self-sampling is a screening tool to detect high-risk HPV strain that causes cervical cancer. The objectives of the study were to describe the perception of HPV self-sampling and associated factors among the patients in a public medical facility. A cross-sectional study was conducted in Universiti Teknologi MARA(UiTM) medical centre from February 2017 till July 2017. A total of 220 female patients were shown a diagram of the HPV self-sampling kit before they completed the self-administered questionnaires. The questionnaires on the perception of HPV self-sampling consisted of 17 items and had a 5 Likert scale response (1=very disagree to 5=very agree). The mean age of the respondents was 32.55 (7.70) years old, a range of 18-55 years old. Majority of the respondents was Malays (94/1%), attained tertiary education (79%) and married (80%). Only 15% of the respondents heard of HPV self-sampling. The highest mean score for the perception was regarding the type of aid for HPV self-sampling. A mean of 4.06 (1.06) for “use of diagram”; mean=3.99 (1.05) for “use of video illustration” and mean=3.66 (1.19) for “having less technical language in the instruction”. The lowest mean of 2.75 (1.27) was for “performing self-sampling without the presence of a trained staff” and age was a significant factor ($r=0.18, p\text{-value}=0.01$). About 84.9% were interested in performing the self-sampling. Performing HPV self-sampling away from health facilities was a main concern for the women.

Keywords: HPV, self-sampling, perception, patient

FHPP034

The Usage of Self-Report And Direct Measure Of Physical Activity Among Overweight And Obese Women In The Mybfff@Home Study

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Several methods have been developed to determine a person's physical activity level. This study aims to determine the level of physical activity and the agreement between short version International Physical Activity Questionnaire (IPAQ-SF) and pedometer among overweight and obese women who were involved in the My Body is Fit and Fabulous at home (MyBFF@home) study. Baseline and sixth-month data from the MyBFF@home study were used for this purpose. A total of 169 of overweight and obese respondents were available to answer IPAQ-SF and were asked to use pedometer for seven days. Data from IPAQ-SF were categorised as inactive and active while data from pedometer were categorised as insufficiently active and sufficiently active by standard classification. Cohen's kappa was applied to measure the agreement and pre-post cross tabulation table was created to evaluate the changes in physical activity over six months. From 169 respondents, 167 (98.8%) completed the IPAQ-SF and 107 (63.3%) utilised the pedometer. A total of 102 (61.1%) respondents were categorised as active from the IPAQ-SF and 9 (8.4%) respondents were categorised as sufficiently active via pedometer. Cohen's κ found there was a poor agreement between the two methods, $\kappa=0.055$, $p>0.05$. After sixth months, there was +9.4% increment in respondents who were active from IPAQ-SF but -1.3% reductions for respondents being sufficiently active from pedometer. The IPAQ-SF and pedometer were both able to measure physical activity. However, poor agreement between these two methods were observed among overweight and obese women.

Keywords : Physical activity, International Physical Activity Questionnaire (IPAQ), pedometer, obese women, Malaysia

FHPP035

Are social support and perinatal distress predictors of GDM? Results from a Kelantan state survey

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Both social support and perinatal distress affects pregnancy outcomes. This study aimed to determine the social support scores, perinatal distress scores and their association with gestational diabetes mellitus (GDM) among gravida two (G2) and

gravida 3 (G3) antenatal mothers in Kelantan. A cross-sectional study was conducted in 28 government health clinics. Validated questionnaires were used to obtain primary data from 684 G2, and 480 G3 antenatal mothers. The median social support scores were 65 (IQR 23) for both groups of mothers. More G3 mothers had moderate to extremely severe stress (7.3% versus 6.4%) and depression (4.3% versus 3.2%) scores compared to G2 mothers. Whereas more G2 mothers had moderate to extremely severe anxiety than G3 mothers (8.6% versus 7.6%). 10.4% of G2 mothers and 11.3% of G3 mothers had GDM in their current pregnancy. Multivariate analysis for G2 mothers revealed that maternal age, employment status (AOR: 0.49, $p=0.016$), interpregnancy interval of 24-35 months (AOR:3.32, $p=0.038$), being overweight (AOR: 2.75, $p=0.004$) or obese (6.56, $p<0.001$) at booking in previous pregnancy, inadequate (AOR: 2.71, $p=0.014$) or excessive (AOR: 2.25, $p=0.043$) gestational weight gain in current pregnancy were associated with GDM. For G3 mothers, being obese at booking in current pregnancy predicted the development of GDM (AOR:2.64, $p=0.016$). Both social support during pregnancy and perinatal distress were not associated with GDM.

Keywords: social support, perinatal distress, GDM

FHPP036

A retrospective study of anaemia at third trimester of pregnancy in Port Dickson.

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Records of antenatal patients attending primary care clinic at 36 weeks of pregnancy between January to June 2017 to determine the prevalence of anemia were reviewed. The prevalence of anemia at 36 weeks of pregnancy was 10.9% (61/555) and majorities were having mild anemia (98%). Among Malays, 10.6% of them were anemic, Chinese 12.1% and Indian 10.8%. The prevalence of anemia was highest among the age group of 21-30 years old (62%) and among multiparous patients (84%). Iron Deficiency Anemia was found to be the commonest cause of anemia (72%). Only 3% were having B Thalassemia trait. At booking, 22 (36%) were already having anemia and 44 (72%) were first detected to have anemia at second trimester. The predisposing factors for anemia were mainly poor spacing (38%) and late booking (31%). All respondents were treated with oral iron supplementation where 10% were only on Ferrous Fumarate, 49% were on Iberet-folate and 25% were on Maltofer. Four (7%) received Total Dextran Infusion. Almost half of them were noted to be noncompliance to medication. Complications of anemia reported 7% (4/61) had low birth weight babies of those 3 were SGA and 1 was IUGR and 2 cases of postpartum hemorrhage (3%). This study shows that anemia in pregnant women is still prevalence in Port Dickson considering all the measures taken. There is a need to strengthen the intervention measures with emphasis on programs that will increase awareness among pregnant women and general public

Keywords: anemia, pregnancy, iron deficiency, Maltofer, prevalence

FHPP037

Controlling Behaviour of Husband/Partner Against Postpartum Mothers And Its Associated Factors

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Controlling behaviour is a form of intimate partner violence that could lead to a significant mental health effect on postpartum mothers. This study aims to look at the prevalence of controlling behaviour among husband/partner against postpartum mothers and its associated factors. Data was derived from a nationwide cross-sectional study conducted at government primary healthcare clinics targeting women at 6-16 weeks postpartum. Cluster sampling design was used to ensure a nationally representative sample of 5727 respondents. A face-to-face interview was conducted by trained nurses and controlling behaviour of husband/partner was assessed using a locally validated WHO multi-country study on Women's Health and Life Events Questionnaire. The factors studied included mothers' and husband's age, household income and alcohol consumption. History of emotional, physical and sexual intimate partner violence (IPV) were also assessed. A total of 1547 women [30.2% (95%CI: 24.3, 36.9)] reported exposure to controlling behaviour by husband/partner. Controlling behaviour is more prevalent among husband/partner of younger age group [45.2% (95%CI 36.5, 54.1)] and experienced more by younger mothers in age group 18-24 [42.5% (95%CI 33.4, 52.1)]. It is also more prevalent among lower household income group [39.6% (95%CI 30.9, 29.5) and women with husband/partner who consumes alcohol [37.6% (95%CI 22.3, 55.8)]. Women who reported controlling behaviour by husband/partner had a higher likelihood of experiencing physical violence [OR=1.89; 95%CI 1.28, 2.78] and emotional violence [OR=1.61; 95%CI: 1.17, 2.22]. This study provides evidence for the need to educate society on healthy relationships and build awareness of the associated risks of controlling behaviour.

Keywords: Controlling behaviour, intimate partner violence, postpartum women, Malaysia.

FHPP038

Knowledge on Thalassaemia Among Health Care Professionals In Primary Care Setting In Malaysia

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Thalassaemia population screening in Malaysia was introduced in 2008. In order to encourage public to come forward for screening, medical professional in primary care must be competent in delivering accurate Thalassaemia information. This study aimed at assessing the medical officers (MO) and Family Medicine Specialist (FMS) knowledge on Thalassaemia and Counselling. Data was analysed based on pre and post test results during counselling training in 2014 and 2016. The structured questionnaires developed by the experts in various fields related to Thalassaemia prevention and management were completed by the participants before training commenced and immediately at the end of the training. Questions were divided into 7 domains: Thalassaemia genetic, epidemiology, clinical features, investigation, treatment, complication and counselling. Content validity was carried out by an expert clinical team and reliability was verified using test- retest methods, followed by pilot test. Of 380 respondents, 75.3% were female and 24.7 % were male. Most of them (73.9%) were MOs. There was an increase in the mean score of Thalassaemia knowledge in both MO and FMS group before and after the training. However, there was no association between period of working experience and the mean score of Thalassaemia knowledge among MOs before and after the training. Significant improvement in the mean score was observed in all domains for MO and FMS except in epidemiology domain at the end of the training. Thalassaemia Counselling module was shown to be beneficial in improving MO and FMS knowledge. The epidemiology component need to be improved to help young MO to develop clear understanding of Thalassaemia in Malaysian context.

Keywords: Thalassaemia, Thalassaemia knowledge, counselling training

FHPP039

What Does It Take To Be An Adolescent Bully Perpetrator? : A Pilot Study

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The phenomena of bully had come to limelight in the recent years, especially among adolescent aged students in Malaysia. However there are numerous sociocultural or environment aspects which shapes an individual to be a bully perpetrator. Sadly they are often stigmatized. This study was a pilot study conducted on identifying factors of being a bully perpetrator among adolescent. A cross-sectional study was conducted among Form One students in a national secondary school in Petaling,

Selangor. Data studied included individual, family, peer, school factors which were obtained using self-administered questionnaire and analysed using SPSS version 21. A total of 106 students completed the questionnaires. Cronbach alpha ranged from 0.66 to 0.83. Prevalence of bully perpetrator was 16%, meanwhile 8.5% played dual role of being a perpetrator and victim. Significant factors were being male sex (OR = 3.28, 95%CI=1.13- 9.53), witnessing violence at home (OR = 3.20, 95%CI=1.01- 10.13) and sibling violence (OR = 6.14, 95%CI=1.96 -19.23). The extension of this pilot study which will be conducted in a larger scale will help to identify protective and risk factors among adolescents upon its embarkment. It is important to identify and manage the bully perpetrators as it can reduce delinquency behaviours or mental health disorders in society once the perpetrator outgrows to be an adult. Besides prevention programme should be planned and intertwined accordingly with school health education programmes to prevent the increment of bully perpetrators, as it may help to disrupt the bully cycle.

Keywords: Bully Perpetrator, factors, adolescent, school student

FHPP040

Iron Deficiency Anaemia Among Form 4 School Children: Findings From School-Based Thalassaemia Screening Program

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In Malaysia prevalence of Iron Deficiency Anaemia (IDA) may be superimposed by the present of Thalassaemia traits. Failure to diagnose and treat during adolescent can lead to maternal anaemia in future. The aim of this study was to describe the prevalence of anaemia among Form 4 students who were screened for Thalassaemia. Data presented was a preliminary finding of IDA reported in the school based Thalassaemia screening aggregated return in 2016. Simultaneously IDA was tested as part of Thalassaemia screening program. Screening was offered to all form 4 students in public school. Only students with parental consent were included in the study. Blood sample were taken in school and Full Blood Count test were carried in nearest health clinic within 6 hours. Students were classified as suspected IDA when Hb < 13gm/dL(male) or Hb<12 gm/dL(female) and MCH≤27pg. Diagnosis of IDA was confirmed with improvement of the Hb and MCH value over 3 months of Iron challenge. A total of 199,174 Form 4 students with parental consents' were screened for Thalassaemia. The screening result showed 50,854 (10.5%) of Form 4 students have IDA with higher prevalence in female (16.13%) compared to male (2.71%) . The highest prevalence of IDA was observed in Perlis (18.9%) , Wilayah Persekutuan Labuan (18. , followed by Selangor, and Sabah. IDA is more prevalence among Indian (28.4%) followed by Bumiputra Sabah (22.2%), Malay(16.0%), Bumiputra Sarawak (12.7%) and Chinese (8.7%). Prevalence of IDA differ by gender, ethnicity and locality.

Keywords: Iron deficiency Anaemia, adolescent, school-based Thalassaemia screening

FHPP041

Knowledge Of Anemia Among Pregnant Women In Tampin

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Anemia in pregnancy defined by World Health Organization (WHO, 2012) as a haemoglobin concentration below 11g/dl and is a common problem which effect both the mother's and her child's health. This study aims to assess the knowledge level of anemia among pregnant women in Tampin, Negeri Sembilan. A descriptive study was conducted to assess the knowledge of anemia among pregnant women at Klinik Kesihatan Tampin. A sample size consists of 30 pregnant women which in the age range 20- 35 years old. The data was collected by using pretested structured knowledge questionnaire. 55% of pregnant women belong to the age 20-30 years old, maximum percentage (58%) of pregnant women had high school education and most of them are (70%) labour. Nearly (62%) of the samples had income RM 1500-2500 per month. The majority of the pregnant women (54%) had satisfactory knowledge, 38% had poor knowledge, and 8% had good knowledge regarding anemia. The overall knowledge in the study population was 30%. Early detection and management strategies should be adopted to prevent anemia. The main focus of research studies should be behaviour modification of individual.

Keywords: anemia, pregnant women, knowledge

FHPP042

Maternal Death From Pulmonary Embolism In Malaysia: Who Is At Risk?

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Malaysia has witnessed steep decline in maternal mortality ratio (MMR) since 1960s as maternal and child health services progressed. Most direct causes of maternal deaths showed remarkable improvement in cause-specific MMR, however an alarming trend is seen in deaths due to pulmonary embolism (PE) where it has increased from 2.1 in 2001 to 4.6 per 100,000 livebirths in 2015. A retrospective study using maternal death surveillance data was conducted to identify the characteristics and risk factors associated with maternal deaths due to PE in Malaysia for the period of 2010 to 2015. A total of 89 deaths attributed to pulmonary embolism were analyzed. It showed highest age and ethnic specific MMR among mothers 40 to 49 years and Malay, respectively. Most (75.3%) of deaths happened in postnatal phase and among these, 49% occurred within the first 10 days postpartum. Common risk factors reported were caesarean section (58.4%), obesity (44.9%), parity more than three (40.4%) and age more than 35 years old (34.8%). Other risk factors include immobility, hospitalization, pre-eclampsia in current pregnancy, preterm birth, medical comorbidities and current systemic infection.

Detailed analysis revealed that 22.7% of the mothers have two risk factors, 18.7% have four risk factors and 17.3% have three risk factors while 6.7% of the mothers have no identifiable risk. Therefore, risk assessments and appropriate management based on the risk stratification is crucial in the prevention of VTE and reducing maternal deaths.

Keywords: maternal death, pulmonary embolism, MMR, risk factor

FHPP043

Body Weight Misperception And Their Action Among Malaysian Adolescent: Findings From Adolescent Nutrition Survey 2017.

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Body weight misperception refers to the wrong perception either they underestimated or overestimated their own body weight irrespective of actual body mass index. This study aims to determine action taken according to body weight misperception among Malaysian adolescents. A cross sectional study with two-stage stratified cluster sampling data was obtained from Adolescents Nutrition Survey 2017 which involved adolescents aged 10 to 17 years old. Socio-demography and body weight perception data were obtained using a self-administered questionnaire. Descriptive analysis using complex sample was performed for data analysis. Findings showed that among adolescents who were actually in overweight categories but wrongly perceived themselves to be thin, 15.7% (95% CI: 12.58, 19.42) wanted to increase weight, 15.5% (95% CI: 12.60, 19.00) have no plan to change their weight and 6.8% (95% CI: 5.21, 8.85) just wanted to maintain their weight. Similar pattern showed among adolescents who were actually thin but wrongly perceived overweight, 31.3% (95% CI: 15.94, 52.33) wanted to lose weight, 20.6% (95% CI: 10.18, 37.40) have no plan to change their weight and 8.9% (95% CI: 3.54, 20.78) just wanted to maintain their body weight. Regardless of the perception, the action taken would be considered inappropriate if an overweight adolescent wanted to increase weight and thin adolescents wanted to lose weight. This finding should be utilised by relevant programme managers in developing school-based health promotion program through curriculum syllabus to inculcate healthy body image.

Keywords: Body weight, misperception, Adolescent Nutrition Survey.

FHPP044

Dietary Factors Associated With Adolescents Obesity In Hulu Langat District

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The prevalence of obesity in Malaysia are in increasing trends, and obesity during adolescent will add to the increased risk for adult obesity later on. The aim of this study was to identify the risk factors associated with adolescent's obesity in Hulu Langat district. This is a cross-sectional study, conducted between January till December 2017 using the Adolescence's Health Screening Form (BSSK). Probability proportional to size sampling was done for schools in Hulu Langat district with total sample size of 500 respondents. The data was entered and analysed using SPSS version 21. Findings from this study shows that 54.3% were female, 68.4% Malays with the median age of 15 years old. Breakfast was the lowest meal intake by the respondent which is 72.8%, meanwhile lunch is 92.2% and dinner is 91.7%. In contrast, the consumption of dairy products and vegetables was the lowest which is 78.3% and 84.3% respectively. More than half of the respondent (66.4%) did exercise at least once a week, however only 31.2% did exercise for 30 minutes in each session. 65.4% of the respondent had normal BMI, 13.1% overweight, 7.2% obese and others were underweight. Male (13.5(2), P value <0.05), who takes grains and the dairy product was found to be associated with obesity (8.28 (2) p value <0.05, 4.86(2) p value <0.05). In conclusion, the participation of male adolescents in weight management activities should be encouraged in future programs. Nevertheless, further studies on type and the quantity of food taken by adolescents could be considered.

Keywords : adolescent, obesity, dietary intake

FHPP045

Factors Associated with Preconception Care Among Mothers With High Risk Pregnancy In Kinta District, Perak.

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Preconception care is a promising new approach to improve the health of future children through primary intervention and to ensure appropriate action and avoid risks in early pregnancy. This study aimed to determine the factors associated with preconception care utilisation among mothers with high risk pregnancy in Kinta District, Perak. This study was a cross-sectional study conducted from March 2016 to February 2017 in Kinta District, Perak. Perak is one of the states in Malaysia.

Mothers with high risk pregnancy was defined as a mother with high risk condition such as diabetes, hypertension, heart disease, hyperthyroidism and obesity. Antenatal mothers chosen to participate in the study were informed about the study and written consent were obtained. A proforma was used in this study. Simple and multiple logistic regressions were used for data analysis. A total of 490 respondents were included in the study. The mean age of the respondents was 29.92 (SD 5.56) years and Malay accounted for 347 (70.8%), followed by Indian 74 (15.1%), Chinese 65 (13.3%) and others 4 (0.8%). After controlling for confounders with multiple logistic regression, mothers who had previous history of complicated pregnancy and planned pregnancy were shown to be significantly associated with preconception care utilisation. Strategies should focus on awareness and promotion on preconception care especially among mothers with high risk pregnancy in order to increase their uptake.

Keywords: Preconception Care, Utilisation, High risk pregnancy

FHPP046

A Study on The Effectiveness Of Sensory Based Integration Activities In Children With Disabilities In Seremban 2 Health Clinic

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Sensory integration (SI) therapy is an intervention widely used to focus on the neurological processing of sensory information among children with disability. Interventions based on the needs of the child and are characterized by an emphasis on sensory stimulation and active participation of the client and involve client-directed activities. This is to improve the sensory modulation related to behavior and attention and to increase abilities for social interactions, academic skills, and independence in daily activities. Objective: This study aims to explore the effectiveness of the sensory integration activities based on the sensory problems among children with disabilities. Method: A self - administered questionnaire by using a standardized form (Short Sensory Profile) were used in this study to assess the level of sensory problems experienced by the children. The evaluation will be carried out during the first visit at the sensory integration room (upon enrollment) and the final assessment will be done after 3 months receiving the intervention. Result: Study indicated that a total of 133 cases (n=133) undergone the intervention from 2016 to April 2018. Study shows that the highest referred cases was diagnosed as speech problem (33%) followed by Autism Spectrum Disorder (30%) and Attention Deficit Hyperactive Disorder (12%). A total of 74% (98) children show positive effects after the interventions carried out by the Occupational Therapist. In conclusion, the intervention done show positive effects to sensory problem experienced by the children that may help the children to improve their concentration, self management, behavior and academic.

Keywords : Sensory Integration, Sensory Processing Disorder, Occupational Therapy

FHPP047

Our Success Story - Culturally Appropriate Vaccination Programme In A Targeted Community In Gombak

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Many parents are not getting their children vaccinated. The factors involved in their decision must be truly analysed in order to increase immunisation uptake. Study was to establish that culturally appropriate health interventions are effective in increasing immunisation coverage by taking into context their cultural and lifestyle aspects. Descriptive analysis of a targeted community with poor immunisation coverage in Gombak was conducted over a 3 year period from June 2015 to June 2018. Various health interventions were implemented during this time period and their effectiveness were documented and analysed based on case notifications, clinical reports, lab findings and immunisation clinic attendance records. Significant increase in immunisation uptake was documented from March 2017 onwards following the implementation of the monthly outreach clinic within this community's premises. The immunisation coverage among children below 7 years in this community has reached 83.6% in June 2018 from 25% in June 2015. It was also noted that there were an additional 167 children from the same community but living outside Gombak who were immunised during these outreach clinics. The culture centred approach based outreach clinic was successfully able to convince and engage the community regarding the importance of immunisation. Culturally appropriate interventions are the key in influencing health related behaviours.

Keywords : Culturally appropriate ; health intervention ; immunisation ; targeted community

FHPP048

Under 5 Mortality in Keningau Sabah Year 2017

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The Sustainable Development Goals (SDGs) aim to reduce neonatal and under 5 mortality (U5M) as well as to end preventable death in this age group. It is important to identify the health determinants in the local setting and develop a community-focused action in achieving this goal. This study aims to describe the characteristic of neonatal and U5M in Keningau district. This study uses Maternal and Child Health (MCH) census 2017 and Death Notification forms. The perinatal mortality rate in Keningau district is 18.0/1000 births, neonatal mortality is 9.6/1000 livebirths, infant mortality rate is 12.7/1000 livebirths and U5M rate is 14.4/1000 livebirths. Major cause of neonatal mortality are lethal congenital malformation (48.1%) and prematurity (29.6%). 70% of deaths between ages 1 month to 1 year are due to infectious cause. 20.5% of under 5 years old deaths are preventable, of preventable

deaths; 44.4% occurs within the neonatal period, 77.7% occurs in infancy and 55.6% are local citizens. 47.7% of U5M come from a low income family (monthly income less than RM1000). Knowing the determinants affecting infant and child mortality in local setting help us understand the issues and determine plan of action to improve maternal and child healthcare services in Keningau. Another issue worth highlighting is the lack of readily available digital or online data to help analyse the health determinants and causes of maternal and child mortality.

Keywords: neonatal mortality, under 5 mortality, preventable deaths, health determinants

FHPP049

Anaemia In Pregnancy: Are We Neglecting The White Elephant In The Room?

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It's been a challenging situation in managing anaemia in pregnancy despite improved antenatal guidelines, accessible treatment and first line interventions in the primary care. A cross sectional study was conducted to evaluate healthcare personnels' knowledge, attitude and practice towards managing anaemia in pregnancy. Of 99 respondents, majority were nurses (53.0%), medical students (25.0%) and medical officers (21.0%). 75.0% of them were clinically practiced either in primary care or hospital-based settings. Majority of the respondents were able to define anaemia (99.0%), but only 62.6% knew that anaemia reduces the oxygen carrying capacity. Most of them agreed that anaemia in pregnancy is caused by poor maternal nutrition (99.0%) and inadequate iron or folic acid supplements (96.0%). However, only 75.8% knew that it could be hereditary, contributed by poor pregnancy spacing and affects not only vegetarians. Majority acknowledged that anaemia could be prevented by taking iron supplements (98.0%) and eating red meat (91.9%) but only 65.7% knew the role of folic acid. With regards to laboratory test to diagnose anaemia, 89.9% and 83.0% of the respondents knew on the measurement of serum haemoglobin and ferritin. Minimal respondents knew about stool for parasites (48.5%) and urinary iodine level (56.6%) as an adjunct test. Majority of them were able to assess anaemia clinically (90.9%) but a quarter (44.4%) were lacking with regards to further management. Patient related factors (88.9%) were the most identified barrier to treat and educate anaemia. Empowering the frontliners healthcare practitioners in managing anaemia will further improve maternal & perinatal morbidity and mortality.

Keywords: Anaemia, pregnancy, primary care

FHPP050

40 Years: Prevalance Of Visual Acuity Defect Among School Children Detected By School Health Team In Malaysia

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Detection of visual acuity (VA) among school children is one of the main activities during school health examination in Malaysia. Study has shown that there was significant relationship between impaired visual acuity and academic performance. The aim of this study was to describe the trend of visual acuity defect among school children. Data were collected from national database on school health service from 1990 until 2017. VA screening on school children was regularly done by trained health care providers. This screening was carried out every year in government schools in year 1, year 6 and form 3. Those with visual acuity less than 6/12 were identified as having VA defect. The prevalence of VA defect among year 1 varied from 7 per 1000 to 80 per 1000 school children while for year 6 varied from 24.8 per 1000 to 74.4 per 1000 school children. Among form 3, the prevalence of visual acuity varied from 28.9 per 1000 to 72.5 per 1000 school children. From 1990 onwards, there was uprising trend of school children having VA defect, however there was a decreasing trend for all school years starting year 2013 onwards. Few factors might contributed to the increasing trend of VA defect among school children such as increased use of electronic devices. Screening for visual acuity in school children must be carried out for early intervention.

Keywords: Visual Acuity (VA) defect, screening, school children

FHPP051

Baby Friendly Clinic Initiative And Exclusive Breastfeeding: A Malaysian Experience

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World Health Organization (WHO) has set a target of 50% exclusive breastfeeding (EBF) at 6 months by 2025, while Malaysia target is 70%. Currently Malaysia EBF rate at 6 months is 47.1%. Malaysia has implemented Baby Friendly Hospital Initiative since 1993 and Baby Friendly Clinic Initiative (BFCI) since 2010 to provide maternity services for protecting, promoting and supporting breastfeeding. The aim of this study is to study breastfeeding practices at selected BFCs and factors affecting it. This is an observational study of antenatal care (ANC) attendees who were followed up from 36 weeks pregnancy until 6 months post-delivery. BF observations were made during initiation at delivery, 1 month, 3 months and 6 months post-delivery. The respondents were all eligible attendees who came for ANC in 6 selected BFCs in Selangor, Malaysia. Data on socio-demographic background and feeding practices were collected. Among the 300 multi-ethnic respondents, breastfeeding initiation

rate was 93.7%. However EBF rate was 87.7% and it subsequently declined to 78.3%. 43.7% and 36.0% at 1 month, 3 months and 6 months post-delivery, respectively. The factors influencing discontinue EBF were not enough milk to breast feed their babies (48.0%) as well as mothers started back to work (40.7%). Both WHO and Malaysia target has not been achieved in the BFCs in this study. Thus, health providers in the BFCs need to increase the support, education and awareness of breastfeeding for mothers since antenatal phase in order to achieve a target in 2025.

Keywords: Exclusive Breast Feeding, Baby Friendly Clinic Initiative

FHPP052

Measles Found The Anti-Vaxxers

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Anti-vaxxers is the colloquial term commonly used to describe individuals that oppose vaccination. Measles is a highly contagious vaccine preventable disease with a basic reproduction number (R_0) of between 12 to 18 in a susceptible population. A measles outbreak was declared at a residence in Pulau Hilir, Kota Bharu on the 14 January 2018. The aim of the investigation was to determine the epidemiology, source and contributing factors of the measles outbreak at the residence in Pulau Hilir as well as to prescribe appropriate control and prevention measures for the containment of the outbreak. The outbreak investigation included interviews, case and contact investigations, active case detections (ACD), surveillance and laboratory samples. This outbreak identified 6 measles cases from the same family. There were 4 (66.7%) males, 2 (33.3) females and all of 6 (100%) had symptoms of fever, rash, cough, coryza and conjunctivitis. Five (83.3%) cases were between ages of one and six and 2 (33.3%) of them required hospitalization. All cases had no or incomplete vaccination status. Five (83.3%) cases were laboratory confirmed and 1 case was by epidemiological link. Ultimately, vaccination remains to be the most effective approach to achieve the measles elimination globally and should remain to be the paramount goal.

Keywords: measles, outbreak, anti-vaccination, Kota Bharu

FHPP053

Toward Zero Discrimination; Analysis On Implementation Of Prevention Mother To Child Transmission Service In Melaka

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Stigma and Discrimination towards people living with HIV (PLHIV) are still prevalent in Malaysia and it can be a barrier to seek medical treatment. Ministry of Health is now going toward the elimination of HIV /Syphilis vertical transmission and zero HIV stigma and discrimination. This study explores the intentions of stigma and discriminates against infected pregnant mother by the medical staffs that run the PMTCT program in Melaka. A cross-sectional study with a stratified systemic sampling of staffs managing HIV infected mother was conducted in mother and child health (MCH) unit from 8 health clinics in Melaka in March 2018. A self-administered knowledge, attitude and practice (KAP) questionnaire on sociodemographic, HIV knowledge, perceived HIV-related stigma and discrimination (S&D) and HIV related issues concern by staffs was adapted and validated. Data were calculated and rated on a matrix scale of 1 to 100. then categories for comparison. Total respondent was 253. All respondents have experienced managing HIV positive pregnant mother. Majority of the respondents has high knowledge of HIV (Knowledge score > 79). However, 32% of respondents still think HIV can be transmitted by sharing utensil with PLHIV and 23.7% respondents believed they can identify PLHIV only by looking at them. Finding on stigma and discrimination shows that 95.3% staffs have a negative opinion about HIV- positive person enrolled in the workforce and 70.7% believed that PLHIV gets infected due to their irresponsible behaviour, thus PLHIV should be blamed for their illness. The stigma and discrimination matrix score were alarming high (matrix score: 97.4). Other finding shows that 79.8% of staff claimed they do not have enough training on HIV/STI and 74.3% staff concern of getting infected when helping HIV-positive clients. In conclusion, despite having high knowledge on HIV and experienced in handling HIV patients at the workplace, the majority of the respondents worried regarding HIV nosocomial on them and inquired further training on HIV/STI. The intentions of stigma and discriminates against infected pregnant mother by the medical staff who run the PMTCT program in Melaka is also high.

Keywords: HIV , Discrimination, PMTCT

ENVIRONMENTAL AND OCCUPATIONAL HEALTH

EOHPP001

Leptospirosis Prevention: Low Level Of Knowledge And Poor Attitude Among Food Handlers In Kajang, Selangor

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Leptospirosis is one of the most important zoonotic diseases. Not much information is known on awareness regarding leptospirosis prevention among food handlers. This study aims to determine the knowledge and attitude level among food handlers in Kajang, Selangor. A cross-sectional study was conducted among food handlers in Kajang. Information from selected 112 respondents on gender, age, ethnicity, educational level, household income, nationality, and high-risk activities were recorded. A survey of knowledge and attitude on leptospirosis prevention using a modified and content validated questionnaire was also carried out. The questionnaire, which was in the Malay language, consisted of 5 sections and 44 items; its Cronbach's Alpha was 0.711. About 56.3% of respondents were less than 35 years old with mean (SD) age of 33.91 (11.06). There were more male respondents (58.9%) compared to female respondents (41.1%). More than half (53.6%) of the handlers were foreigners (Indonesia and Thailand). Most of the respondents received secondary education and mean(SD) household income was RM1462.50 (985.31). Most of the respondents had poor knowledge (88.4%) with a mean (SD) percentage score of 39.49 (33.67) and 87.5% had a poor attitude. Findings from this study indicate that strategic health education should be strengthened with emphasis on improving knowledge on leptospirosis and proper attitude among food handlers. In addition, it should be extended to include foreign workers together with local operators as they make up more than half of those handling food.

Keywords: knowledge, attitude, leptospirosis, food handlers

EOHPP002

Factors Associated with Distribution of *Anopheles Sundaicus* in Coastal Area, Kuala Penyu, Sabah

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Malaria is still one of the most important diseases in Malaysia. A study was conducted in the coastal area of Kuala Penyu, Sabah, where the malaria vector, *Anopheles sundaeicus* is highly abundant. This study aims to determine the biting patterns and the relationship between meteorological factors and the abundance of *An. sundaeicus*. Mosquitoes were collected indoors and outdoors by human landing collection from 1800 to 0600 h. All collected mosquitoes were identified to the species level. Meteorological parameters including monthly temperature, rainfall, relative humidity and wind speed were analyzed. A total of 2,294 *An. sundaeicus* 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. sundaeicus* appeared to be influenced by monthly temperature patterns ($p=0.0044$), compared to other meteorological parameters. The population densities of *An. sundaeicus* showed the greatest abundance during high temperature season, April to August with the highest density was recorded in May, while December was the lowest. This study provides information on biting patterns throughout the night and seasonal abundance of *An. sundaeicus*. This information serves as a basis for providing health education on the importance of personal protective equipments among residents to prevent mosquito bites, as well as to improve vector control strategy planning to be more efficient, effective and reduce operating costs.

Keywords: *Anopheles sundaeicus*, malaria vector, biting time, seasonal abundance, meteorology

EOHPP003

Fish Consumption Pattern and Genetic Polymorphism among Pregnant Women in Petaling District, Selangor

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Fish is one of the risk factors for methylmercury exposure. Methylmercury is the most toxic mercury species which can accumulate in aquatic organism, transfer through food chain, and entered human body. In human body, Glutathione S transferase mu-1 (GSTM1) and theta-1 (GSTT1), which are phase II enzymes, act as detoxifier to metabolize the toxic substances including methylmercury. The absence of these enzymes resulted in gene polymorphism (detoxification interruption). This study aims to associate the fish consumption pattern with the GSTM1 and GSTT1 polymorphism as well as to describe the sociodemographic information of the respondents. Data collection which involved sociodemographic information, fish intake information and blood samples were conducted between December 2016 and May 2017. The results showed that among 105 pregnant women aged (mean \pm SD) 30 \pm 5 years old, majority were in third trimester (50.5%), followed by first and second trimester (24.8% each). The household income per month was RM4610 \pm 2223. Majority of the respondents were Malay (93.3%) and currently working at private and government sectors (63.8%). For educational background, most of them pursued their study up to *Sijil Pelajaran Malaysia*, SPM (33.3%). Most of the respondents preferred to consume medium size of fish (47.6%). The top five types of fish consumed by the respondents during pregnancy were *kembong* > *cencaru* > *selar kuning* > *tenggiri* > *bawal*. The blood analysis found that 66.7% and 34.3% of respondent had the GSTM1 and GSTT1 polymorphism, respectively. Statistical analyses showed that those who frequently consumed these type of fish (*bawal*, *tongkol*, *gelama*, and *selar kuning*) were more likely to have GSTM1 polymorphism ($p<0.05$). Therefore, this result can contribute to food consumption advisory for policy makers to provide a safe guideline of fish consumption to susceptible person especially pregnant women.

Keywords: fish frequency intake, GSTM1, GSTT1, PCR method, Malaysia

EOHPP004

Market Traders Perceptions On Rats Control In Modern Market, Section 6 And Section 16 Shah Alam, Selangor.

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Rats are often found in market areas and it is the most common pest that causes nuisance and a vector for disease transmission. Market traders are responsible to control the presence of rats in the market area to ensure the market is free from rats' infestation. This study aimed to examine the perception on rats control among the market traders in Section 6 and Section 16, Shah Alam. This study used a standardized self-administered questionnaire and data were analyzed using SPSS version 21.0. Descriptive statistics were used to examine the sample characteristics. Independent t-test was used to examine the mean differences on perception scores between market traders from two markets. There were 56 respondents participated in this study where 32 (57%) from Section 6 and 24 (43%) from Section 16. Findings showed that rat trap planning is the most dominant aspect for market traders to control rat with an overall mean of 4.05 (SD = 0.648) compared to other aspects. There was no significant difference on the perceptions on rats ($p = 0.676$), rat trap installation planning ($p = 0.666$), market cleanliness and design ($p = 0.138$) and co-operation with the local authorities ($p = 0.616$) between traders in both markets. The local authorities are encouraged to enhance health education to inculcate awareness on rats control. Collaboration between market traders and local authorities is necessary to implement rats control program.

Keywords: rat control, rat trap, modern market, disease control

EOHPP005

Heavy Metals (Arsenic and Lead) Contamination In Selected Popular Instant Noodle

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Many food products have been contaminated with heavy metals and this is nearly unavoidable. Instant noodle has become one of the top favourable foods due to its cheap, easy to prepare and taste good. However, the safety of instant noodle from heavy metals contamination is still in doubt. This study was conducted to determine the heavy metals (arsenic and lead) concentration in selected popular instant noodle brands available in Malaysian market. Seven different brands of instant noodles were chosen. The samples were prepared by wet acid digestion method and analysed by using Inductively Coupled Plasma Mass Spectrophotometer (ICP-MS) for the detection of heavy metals. The result found that lead and arsenic were detected in all samples

analysed with the concentrations were higher in the instant noodle compared to in the seasonings. The concentrations of heavy metals found were below the Malaysian Food Regulation 1985 permitted level of 1 mg/kg for arsenic and 2 mg/kg for lead. Heavy metals may cause long-term health effects through consumption of contaminated food even though at low concentration. Further studies on extensive monitoring of the safety of food and the health consequences of the consumption of contaminated instant noodles should be considered.

Keywords: Instant noodles, Food contamination, ICP-MS

EOHPP006

Effect of Ammonia Exposure on Respiratory System Among Fertilizers Manufacturing Workers

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Ammonia are commonly used by the industry to make fertilizers. Ammonia is an irritating and corrosive chemical and interact with the moisture in the skin, eyes, oral cavity and respiratory tract. The aim of this study was to determine the effect of ammonia exposure on workers respiratory system in fertilizer manufacturing factory in Johor. This was a cross sectional study involving 67 workers which was randomly selected to participate in this study. They were required to filled up a self-administered questionnaire and underwent spirometry test to determine their lung function test. The workers exposure to ammonia were divided into high risk and low risk based on their exposure level to ammonia by using chemical health risk assessment report (CHRA) of the plant. In this study, 53.7% of the respondents claimed that they were having respiratory symptoms at work with shortness of breath (88.9%) was the highest complaint among them. Male gender, non-compliance with the use of personal protective equipment and smoking habit were found to have significant association with respiratory symptoms but spirometry tests results did not show any significant differences with the variables tested in this study. In conclusion, emphasizing the importance of compliance with the use of personal protective equipment in the right way is very important in reducing the risk of respiratory symptoms due to continuous exposure to ammonia odor in the workplace.

Keywords: ammonia exposure, fertilizer, respiratory symptoms, lung function test, manufacturing workers

EOHPP007

Relationship Between Cement Dust Exposure and Respiratory System Among Cement Industrial Workers In Perlis

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Cement dust can be generated during production processes in a cement factory. Prolonged and excessive exposure to cement dust could potentially affect respiratory system of the workers. The aim of this study was to determine the association between the exposure to cement dust and its effect on respiratory symptoms and function. This was a cross sectional study involving 93 workers in cement factory in Perlis. The effect of cement dust exposure on respiratory function were being assessed using respiratory symptoms questionnaire and pulmonary function test. Total Suspended Particulates (TSP) were used to measure workers exposure to cement dust at their workplace. Five areas were chosen which were the administration, raw mill, kiln, cement mill and packing area. The highest reading for TSP was recorded in packing area and the lowest reading was recorded at the administrative office. All TSP readings at these areas exceeded the PEL which is 260 $\mu\text{g}/\text{m}^3/24$ hours except for the administrative office. Among the workers participated in this study, 62 workers were identified as highly exposed to cement dust at their workplace and 31 workers with low exposure level. In this study there were no significant differences on workers respiratory symptoms and functions between those who were highly exposed and those with low exposure to cement dust. It can be concluded that the Healthy Workers Effect might be one of the cause of such findings.

Keywords: cement dust, respiratory symptoms, pulmonary function test, exposure, healthy workers effect

EOHPP008

Tuberculosis Infection Among Healthcare Workers In Negeri Sembilan.

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Tuberculosis (TB) is a known occupational hazard for healthcare workers (HCW) in Malaysia. We explored the data of TB incidences among HCW in Negeri Sembilan between 2012 and 2017. Aim of the study was to determine the incidence rate and the contributory factors. 49 out of 61 reported cases (80.3%) were categorized as work-related primary source of infection. The rate of incidence increased in between 2015 and 2017 as compared to between 2012 and 2014. Descriptive analysis of the 49 cases: the majority of cases occurred among female HCW (65.3%); worked in hospital setting (83.7%); and doing clinical work (83.7%). The main tertiary

referral centre in Negeri Sembilan had the highest number of incidence (53.1%). Emergency and medical units were the high-risk settings. 10.2% claimed they had not gone through any screening for TB. 83.7 % received training about TB. 57.1% were categorized as TB pulmonary smear positive and among those in this category, 57.1% had the symptoms for more than 4 weeks when diagnosed. 93.9% reported of exposure to TB patients at workplace in which 16 cases (32.7%) reported of frequency of more than once a week. Out of this higher perceived risk group, 5 cases either seldom or never wearing personal protective equipment (PPE) during work. The study suggested the need for better training programs among HCW for awareness and change of attitude, to increase screening uptake and better PPE usage. Proper environmental risk assessment and mitigation measures should also be done in high risk area.

Keywords: tuberculosis, healthcare workers, primary infection

EOHPP009

Prevalence of Workplace Violence and Its Associated Factors Among Healthcare Providers At International Islamic University Malaysia Medical Center (IIUMMC)

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Workplace violence in the healthcare setting is a serious problem in Malaysia. However, this issue is not well recognized as there is limited amount of study done within this area. Thus, our study aims to measure the prevalence of workplace violence and its associated factors among healthcare providers in IIUMMC. A cross-sectional study was conducted among 265 randomly selected healthcare providers at IIUMMC, Kuantan, Pahang from 27th March to 26th April 2018. Prevalence and associated factor of workplace violence were measured using self-administered validated questionnaire. Descriptive statistic was used to measure the prevalence while logistic regression was used to explore the association of workplace violence with the background variables. The prevalence of workplace violence among healthcare providers in IIUMMC was 35.1% (n=68). Verbal abuse (94.1%) was the commonest form of workplace violence followed by bully (23.5%), physical abuse (14.7%) and sexual harassment (1. 5%). Older age was protected from workplace violence ($aOR=0.86$, 95% CI 0.766 to 0.965), longer working years were at higher risk to have workplace violence ($aOR=2.099$, 95% CI 1.053 to 4.183) and those from other professional groups were protected from workplace violence ($aOR=0.106$, 95% CI 0.029 to 0.387). In conclusion, in every three staffs, one of them had experienced workplace violence in which verbal abuse has the highest prevalence. Age, working years and profession group has been identified as factors associated with workplace violence.

Keywords: workplace violence, healthcare provider, IIUMMC

EOHPP010

Pesticide and Effect of Abnormal Glucose Level Among Employee in The Health District Office: Cross Sectional Study

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Previous studies have shown that exposure to pesticides may interfere with glucose metabolism in hepatic and subsequently cause abnormal glucose levels. The purpose of this study was to determine the abnormal level of glucose level among workers exposed to pesticide based on the characteristics of occupational practice such as the number of years of exposure, spraying intensity, cumulative exposure of pesticides and also practices and attitudes regarding the use of personal protective equipment. The exposed group consists of 287 employees who are exposed to pesticide. While the unexposed group consisted of 248 workers. Results showed that 23.4% of respondents had abnormal levels of glucose, 73.6% of respondents had abnormal body mass index, 38.3% of respondents had family history of diabetes. Chi Square Test found no significant relationship between abnormal levels of glucose and characteristics of work practices. The results of the analysis of Simple Logistic Regression Test for the confounding factors found that, family history of diabetes (OR 2.00, 95% CI 1.33-3.00, p = 0.001), body mass index (OR 2.99, 95% CI 1.70- 5.26, p <0.001), and higher ages (OR of 1.64, 95% CI 1.31- 2.06, p <0.001) have significant relationships with abnormal levels of glucose. However, the results of the Multiple Logistic Regression Test revealed that characteristics of occupational practice have no significant relationship with abnormal levels of glucose among groups of workers exposed to pesticides. In conclusion, this study has not been successful in proving the relationship between glucose level abnormalities and occupational factors among workers exposed to pesticides.

Keywords: pesticide, abnormal glucose, exposed group, unexposed group

EOHPP011

Quality of Life and Its Associated Factors Among House Officers Under Flexi Hour Shift System in A Tertiary Hospital

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Housemanship is the most challenging period of one's medical career. As newly graduated doctors, they are expected to be directly responsible for the health and wellbeing of patients under their care. Therefore, in the hierarchy of a clinical

management team, a house officer is found to be the one suffering from occupational stress the most. In 2011, the Flexi Hour Shift System (FHSS) was introduced in Malaysia to help reduce such burden and to improvise the concurrent system as well. This study aims to describe the quality of life and its' associated factors among house officers after the implementation of FHSS. A cross sectional study using WHOQOL-Bref was conducted among 110 house officers working in Hospital Raja Perempuan Zainab II, Kelantan in January 2018. Majority of them (56.4%) perceived their overall quality of life as 'neither poor nor good'. Using Cummins' norm of 70%, we found that these house officers were far from achieving the threshold score for physical health (50%), psychological health (56%) and environmental health (63%) but were barely border-lined for social relationships (69%). Therefore, further detailed probing of this issue might be required in the near future.

Keywords: quality of life, house officers, flexi hour shift system

EOHPP012

The Malaysian Army Recruits' Foot Profile – A Study Utilising Arch Index Measurement

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Pre-recruitment medical examination is essential to exclude military candidates with medical conditions. Studies shown that those with flat-arched feet were prone to develop musculoskeletal disorders (MSDs). However, most of foot structure examination was performed through direct visualisation of foot imprint, and this method is imprecise. This study aimed to describe the pattern of foot structures among recruits in the Malaysian Army, measured using an objective measurement instrument and investigate the relationship between foot structure and MSD prior to entry. A cross sectional study was used over 611 newly accepted Malaysian Army recruits. Sociodemographic was obtained prior to the study's conduct. The foot Medial Longitudinal Arch (foot structure) was measured using an objective instrument. Self-reported symptomatic MSD prior to joining the training were ascertained using the Nordic Musculoskeletal Survey questionnaires. Average participants age was 20.4 (SD 1.9), and majority was Malay (82.2%) and completed Secondary schooling (93.8%). We found approximately 30.3% of the participants having flat foot. 44% of respondents having either single or multiple regions MSD 3-months before starting their basic training. Test of association between MSD status and Arch Index (AI) categories did not support association. The present direct visualisation of foot imprint is a poor method in ascertaining an individual foot structure. The AI method is preferable. Our study did not find association between foot structure and past MSD.

Keywords: Recruits, Flat-arched feet, Musculoskeletal Disorders

EOHPP013

Work place promotional gap on TB-related perceptions in Gombak

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Transmission of TB at work place is a public health concern. A study was conducted to explore TB-related perceptions among workplace contacts among in various industries in Gombak; and to determine existing challenges for promotional success in the workplace environment associated with socio demography aspects of worker. A cross-sectional survey to assess TB-related perceptions among 271 contacts in selected workplaces was conducted in various industries. Data was collected through self-administered close-ended questionnaires. Descriptive analysis and chi-squared analysis were primarily used to analyze the data. Majority were married (81.9%), 60.5% did not know they were exposed to a TB patient. Male (P=0.03, score= 5.3-10.3) and non-graduates (P <0.01, score= 5.3-10.4) had less acceptance score on TB -related information among the survey participants. Barrier of acceptance on information towards attitudes on TB treatment was significantly associated with gender and educational level. Occupational health and safety officers at workplaces should be competent in TB management and comply with WHO guidelines (2012) on TB prevention in workplace, adopting Advocacy, Communication and Social Mobilization (ACSM) to increase acceptance of TB prevention information among workplace contacts. Interventions should address a combination of the varying levels of influences on continuity of information, focusing on specific gaps identified to improve health promotional impact post active case detection activities.

Keywords: Knowledge and Attitude; Tuberculosis (TB); Advocacy, Communication and Social Mobilization (ACSM); Cross-sectional; Gombak

EOHPP014

Workplace Environment: Significant Determinants On Quality Of Life For Workers In A Medical Faculty: A Single Centre Study

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Workers' quality of life (QOL) might be influenced by the environment where they do their daily task. This study aims to determine the QOL status of workers in a medical faculty in one centre and its determinants. A cross sectional online survey was conducted from November 2016 until April 2018 in a medical faculty of a public higher institution in Malaysia. QOL measurement was done based on validated Medical Outcome Short Form 36 (MOS-36) questionnaire. A total of 196 respondents completed the survey. Median age of respondents was 36 years old (IQR=9) with majority of them women (58.7%), married (66.3%), had master degree (20.4%) and

were permanent non-academic workers (42.9%). Perfect scores were observed in the domain of role limitation by physical health (median= 100 \pm 50) with lowest score in general health domain (median= 60 \pm 25). The overall summary scores for respondents' Physical Health (median=76.9 \pm 35.0) was higher than the Mental Health scores (Median= 53.4 \pm 38). The only factor that was significantly associated with Physical Health scores were the perception that their job exposed them to dangerous elements (U=2184.5, p=0.01). Meanwhile, significant association was found between friendly working environment (U=2540.0, p<0.01), work satisfaction (U=2037.0, p<0.01) and perceived inadequate salary (U=2559.0, p=0.04) with mental health domain scores. QOL for workers in medical faculty was influenced mostly by the workplace environment, therefore, initiative for healthy workplace will be beneficial to ensure good QOL status among this population.

Keywords: quality of life, worker, determinants

EOHPP015

Oral Health Status Among Dental and Allied Health Staff In A University Setting

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Limited access to oral healthcare and lack of oral health awareness are frequently cited as the main limitations to achieve an optimal oral healthcare in a developing country. This study aims to assess the oral health status of a population in university setting that does not have the aforementioned limitation to oral healthcare accessibility and oral health education. This allows an understanding of the factors contributing to the oral health and wellbeing in a developing country. This is a cross sectional study involving 150 staff in a university campus. Comprehensive dental checkup was performed to assess Decayed Missing Filled Teeth (DMFT) index and Community Periodontal Index (CPI). The mean age of subjects was 28 (SD = 9.19) and 81.5% of subjects were female. They were 62 (41.3%) dental staff and 88 (58.7%) allied health staff. The mean DMFT was 4.0 whereas the mean number of sextants with healthy periodontium and periodontal conditions were 0.27 and 0.73 respectively. The proportion of individuals with periodontal conditions based on CPI was high with 90.7% of subjects affected and it was significantly difference (p<0.05) when compared with National Oral Health Survey of Adults (NOHSA) 2010. In conclusion, the oral health status of staff in university setting is better than general population. This can be attributed to higher education status of the staff and easy access to a dental clinic.

Keywords: oral health status, caries severity, periodontal health

EOHPP016

Knowledge, Perception, Acceptance and Willingness To Pay For Dengue Vaccine In An Urban Community, Malaysia

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The incidence rate of dengue fever in Malaysia showed an upward trend from 132.5 cases per 100000 population in 2004 to 343.1 cases per 100000 population in 2014. This number has exceeded the national target for the incidence rate of dengue fever and dengue hemorrhagic fever. Many factors contributed to the increase in some dengue cases including urbanization, the fast rate of industrialization and economic growth which causes large infrastructure development. There is no specific treatment for dengue disease and dengue vaccine is one of the preventive measures to prevent the disease. The study aims to determine the knowledge and perception towards dengue vaccine, acceptance and willingness to pay of dengue vaccine among an urban community in Putrajaya, Malaysia. A cross sectional study was conducted among residents in Putrajaya by applying self- administered questionnaire from April 2017 until August 2017. A simple random sampling using a table of random numbers was applied. The data were analyzed using IBM SPSS 23.0. The respondents had poor knowledge (73.6%) and perception (79.4%) towards dengue vaccine. On the contrary, they had good acceptance towards the vaccine (61.5%). The respondents were willing to pay for dengue vaccine, only, at a low price (up to RM100.00). They perceived that the government should be responsible for the health of population by providing free vaccine or charge people at a low price. Good perception on dengue vaccine plays a major role in determining their acceptance and their willingness to pay.

Keywords: Dengue Vaccine, knowledge, perception, acceptance, willingness to pay

EOHPP017

Melaka Health Challenge: 6 Months Weight Reduction Intervention Program Among Healthcare Workers In Melaka State Health Department 2017

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The Melaka Health Challenge is a six months weight reduction programme among healthcare workers in the Melaka State Health Department. All weight lost existing programme been adjusted using the same approach. The objectives were 80% remains in the program and all participants had weight loss once enter the programme. Total of 139 healthcare workers had been registered. A module included notes and activities related to health education on understanding their own health

status, healthy diet, exercise prescription and behavioral motivational been given to all participants. The anthropometry, biochemistry, and fitness assessment pre and post-intervention been collected and monitored. There were 121 of the participants were completed in the programme giving a response rate of 87%. A total of 85 (70.2%) participants had shown weight reduction with a mean (SD) of 3.0kg (4.6). However, 9.9% had lost weight more than 10% from their baseline. The mean (SD) reduction of fasting blood sugar was 0.4mmol/L(1.9) and total cholesterol 0.6mmol/L(2.1). All the physical fitness assessment and that been measured were showed improvement in the push-ups test (40.5%), 3-mins YMCA steps test post-exercise (40.5%), sit and reach box test (29.8%) and the partial curl-up test (23.1%) among participants. This programme had successful weight management. We recommended this programme and similar module been applied and continued to all health facilities. Thus the programme benefited all healthcare workers in Melaka State Health Department.

Keywords: Overweight, weight reduction programme, healthcare workers

HEALTH MANAGEMENT

HMPP001

Specialists Resignation from Ministry of Health (MOH), Malaysia: Does (Full Paying Patient) FPP Services Retain Our Specialists?

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Full Paying Patient (FPP) Services was initially introduced into Malaysia Ministry of Health (MOH) hospitals in 2007 to provide additional incentives to specialists as part of a retention package. The aim is to reduce the attrition rate of government specialists to the private sector. Through FPP guidelines and Fee Act (2007), there was minimal emphasis on its real effectiveness in addressing the problem of MOH specialist attrition from the public sectors. A cross sectional study involving all the specialists from 2 pioneered hospitals (Putrajaya and Selayang Hospital) which offers FPP services was carried out. The objectives were to determine the resignation rate among these specialists as compare to the whole MOH specialists as well as the uptake of FPP services by the specialists. The resignation rate of specialists from FPP hospitals improved for the past 2 years. However, there is an increased in resignation from 2014 to 2015 for all the MOH hospitals including the 2 FPP hospitals. Most of these resigned specialists are from the age of 36-45 and grade 51-54. The uptake of FPP services by the specialists is very encouraging. Newly enrolled FPP specialists from the 2 pioneered hospitals showing increment from the year 2013 to 2016. Furthermore, yearly enrollment of FPP specialists in both of these hospitals improved from 14.6% to 16% for the past 4 years. FPP Services does retain specialists to a certain extent, however addressing and solving all the issues in FPP is important to maintain the sustainability of the services.

Keywords: Full Paying Patient Services, Specialist Perspective, Specialist Resignation

HMPP002

Support for Smoke-Free Policies Among Malaysian Adults: findings from the Global Adult Tobacco Survey, Malaysia(GATS-M)

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Public opinion and support provide a powerful mandate for the establishment of smoke-free policies. However, the scarcity of evidence regarding public opinion in Malaysia necessitates further study. The aim of this study was to determine the level of support for smoke-free policies and their associated factors among Malaysian adults in various public places. Data was derived from the Global Adult Tobacco Survey, Malaysia (GATS-M). The GATS-M is a nationwide study which employed a multi-stage proportionate to size sampling method to select a representative sample of 5112 Malaysian adults aged 15 years and above. Data was obtained from selected respondents using a pre-validated questionnaire adapted from GATS-M core and optional questionnaire. Multiple logistic regression analysis was applied to identify factors associated with support for smoke-free policies in workplaces, restaurants, bars, hotels, casinos, karaoke venues, public transport terminals, and shopping centers. The level of support for smoke-free policies in various places varied from 37.8% to 94.4%. Support was highest in localities that had been gazette as smoke-free, namely : shopping centers (94.4%, 95% CI: 93.2-95.3), and public transport terminals (85.2%, 95% CI: 83.3-86.9). Multivariate logistic regression further substantiated that nonsmokers were more likely to support smoke-free policies in all the investigated areas. In addition, respondents who worked in areas with total or partial smoking restrictions were also more likely to support smoke-free policies [(total restriction adjusted odds ratio (AOR): 14.94 (6.44-34.64); partial restriction AOR: 2.96 (1.138-6.35); non-restriction was applied as a reference]. Majority of the Malaysian adult population support smoke-free policies and the likelihood of support are significantly higher among nonsmoker and those who worked in smoke free localities. Therefore, expansion of total smoke-free policies strongly recommended in Malaysia, in order to enhance the protection for the community from second-hand smoke exposure besides de-normalizing the smoking behavior.

Keywords: Smoke-free policy, second-hand smoke (SHS), level of support, GATS-M

HMPP003

The Positive Effect of Integrated Medical Response Protocol on Knowledge, Attitude And Practice Of Healthcare Providers Managing Flood Disaster In Kelantan: A Randomized Controlled Study Outcome

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The Integrated Medical Response protocol (IMP) is a newly protocol during the response phase of a flood disaster in Kelantan. It integrates response workflows of various rescue agencies involved in patient care. Traditionally, health care services in this region used either an all-hazard protocol or other approaches that are not specifically designed for Kelantan. The present study is aimed to test the effectiveness of IMP to improve the knowledge, attitude and practice (KAP) of healthcare providers (HCP) involved in managing patients during flood disaster. This study involved a prospective, parallel-group, single-blinded, randomized controlled trial. The unit of randomization included the districts within Kelantan on a 1:1 basis into either the control or intervention group using cluster randomized method. Then, hospitals within those districts were subsequently assigned to the allocated groups. Investigators were blinded to the assignments. The knowledge, attitude and practice scores of HCP were assessed using FloodDMQ-BM[®] and evaluated 2 weeks before and immediately after a flood disaster table-top exercise. Data was analyzed using a two-way repeated measures ANOVA. Our findings showed that intervention was essential to improve the knowledge [$F(1,100) = 6.947$, p-value 0.010 (<0.05)] and attitude scores [$F(1,100) = 31.56$, p-value 0.001]. Meanwhile, the practice score improved in both groups with time [$F(1,100) = 226.56$, p-value 0.001]. Thus, we believed that our localized IMP, was crucial to further enhance the knowledge and attitude levels among HCP while their practice level showed similar improvement in both control and intervention group post table-top exercise.

Keywords: flood, disasters, protocol, randomized controlled trial

HMPP004

Analysis of Demand for Healthcare

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Analysis of demand for healthcare measures price and income effect on utilisation of healthcare and healthcare expenditure. Moreover, the analysis may determine the elasticities of demand. The inelasticity of healthcare consequently raises

healthcare expenditure even when there is increment of price. Based on the dependent variables, analysis of demand can be either discrete or continuous choice models. This review was aimed to synthesise the different approaches for analysis of demand for healthcare. A scoping systematic review was performed. The domains used were PubMed and ScienceDirect, using the following Keywords; "analysis of demand" AND healthcare OR "analysis of demand" AND health OR "demand elasticity" AND "medical care" OR econometric AND "medical care". The inclusion criteria were English articles, fully available and published in the recent 30 years. Articles that were previously reviewed were excluded. The preliminary searched resulting in 243 articles. Another nine were from other sources. Upon removal of duplicated articles, primary screening was conducted for 158 articles. Based on the eligibility, 61 articles underwent secondary review. Lastly, the articles chosen were from 20 articles and included as the final search. Majority of the analyses of demand used Probit and/or Logit to obtain demand for healthcare. Different analysis of demand methods has pros and cons to analyse the demand for healthcare. Therefore, the best analysis need to be decided based on the researcher's aim of research that could best explain and portray the demand for healthcare.

Keywords: Analysis of demand, demand elasticity

HMPP005

Upgrading of MOH Colleges: What Really Matters

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Ministry of Health (MOH) aspires to expand and upgrade training capacity and capability in all thirty-three MOH colleges. Currently, these colleges are offering certificate, diploma and advance diploma courses training for nurses, assistant medical officer (AMO), and allied health professionals such as physiotherapist, pharmacist assistant and laboratory technician. This study aimed to explore the MOH colleges' trainers on the proposed upgrading to university college (UC) or university through qualitative methodology. Qualitative methods allow deeper understanding of the stakeholders' perception on the idea of upgrading especially on the readiness and foreseeable challenges. Trainers from various profession backgrounds and representatives from relevant organisation were interviewed through Focused Group Discussion (FGD). In Depth Interview (IDI) were conducted among college directors using semi structured questions. Fourteen FGDs and eleven IDIs were completed among 104 respondents. Six major themes were identified after thematic analysis performed on the verbatim transcription of all the interviews. The themes emerged are lecturer workforce, research activities, quality of training, quality assurance process, students affairs and internationalisation. Respondents acknowledge that upgrading of the MOH colleges will open opportunity for professional career development, better equipped facility, and improved training curriculum. High quality training programme for healthcare profession is very important to produce skilful personnel who are competent, safe and market competitive.

Keywords: training, upgrade, perception

HMPP006

Workplace Violence Among Healthcare Workers in Health Clinics, Melaka Tengah District: A Cross Sectional Study

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Workplace violence (WPV) among healthcare workers (HCW) is an important issue that needs to be tackled as it can affect performance of healthcare workers who in turn impact the general population's well-being. This research aims to determine the proportion of workplace violence and its associated factors among HCW in health clinics, Melaka Tengah district. A cross sectional study was conducted in November 2017 among all healthcare workers in all health clinics, Melaka Tengah District. Validated Malay Version of Workplace Violence Questionnaire was administered to all 214 respondents. The proportion of workplace violence among HCW in all health clinics, Melaka Tengah District were as follows: Nearly half (43%) claimed they were verbally abused, followed by 8.4% were bullied, 4.7% were physically violence, 4.7% were racially harassed and 0.5% claimed they were sexually harassed. Mean (SD) for age of the victims was 33.5 (7.93) years old. Female victims were 77.2% while male was 22.8%. Majority of the victims were paramedic (39.1%) and others were from support group (34.8%) and doctors (26.1%). In this study, we can conclude that healthcare staff who one-year younger will have one times the odds to be a victim of workplace violence (95% CI: 0.98, 0.99, *p* value < 0.005). A staff who is working in shift will have 16.01 times the odds to be a victim of workplace violence (95% CI: 1.61, 159.04, *p* value = 0.018). Thus, if a staff of health clinics is younger and works in shift, he or she is more likely to be a victim of workplace violence.

Workplace violence, healthcare workers, health clinics

HMPP007

myCPD Version 2.0: Post Implementation Review

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The myCPD version 2.0 system was developed by Ministry of Health Malaysia. This study was carried out in a cross-sectional way using questionnaire to examine the user's knowledge and experience in relation to the new look and system that is more easily understood than the previous version, and readiness of staff who have been trained to teach other members of the system. Analysis shows that users agree and are satisfied with the new look and the system easier to use and to understand compared to previous version. 75.5% of users agree MyCPD version 2.0 is easier to use (User Friendly) than previous versions (*p*-value <0.05). Consumer confidence in

applying and teaching other health professionals on average has the highest percentage of 76%. This high percentage can be viewed for the Main Admin Module (p-value <0.05). This study has been able to identify the understanding and acceptance of the users of the myCPD 2.0 system, thereby enabling the project team to identify the technical requirements needed for innovation for improvements as well as change management requirements to improve efficiency

Keywords: myCPD, CPD, APC, PIR

HMPP008

Assessment of Primary Care Accessibility in Rural Population Through GIS: Scoping Review

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Primary healthcare accessibility has been a concern of policy makers, providers and academicians. Access to healthcare can be defined as patients' easiness to come to the facilities while accessibility can be defined as the potential for certain health facilities to be reach by the patients. Literature search was done using public domain. All articles within 15 years of publication were included. Any articles which were review articles would be excluded. Content of the articles was then further synthesized into location of study, purpose of the study, method of spatial accessibility assessment and aspatial factors which involve as accessibility determinants. Most of study in article were done in developed countries using geographical information software for the analysis. Most of these studies used gravity method (floating catchment method), three studies using physician population ratio and one studies used travel impedance. Travel impedance and physician population ratio been described descriptively however it is also can be correlated with other outcome such as utilization and mortality. Several aspatial factor also been associatied with spatial accessibility through correlation, integration through formula calculation, aggregation in index and overlaying through geographical information system. Determinants of accessibility cannot be generalized and very much dependent on the local population situation. This knowledge about accessibility determinants able to facilitate health planner and policy maker to understand the situation needs and improve the accessibility by overcoming the barriers.

Keywords: Spatial Accessibility; Geographical Accessibility; Primary Health Care; Primary Care; Rural; Non-Urban and Remote

HEALTH PROMOTION

HPHP001

Correlates of Self-Reported Exposure To Advertising And Promotions of Cigarettes Among Malaysian Adults

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Despite the ban on advertising of cigarettes in Malaysia, outlets for promotion of cigarettes still exist. This study aimed to assess the correlates of self-reported exposure to cigarette advertising or promotions in Malaysia. We analysed data from the National Health and Morbidity Survey 2015. The questionnaire was adapted from the short version of Global Adult Tobacco Surveillance questionnaire. Nationwide representative data was selected using two-stage stratified random sampling technique. Data were collected from respondents aged ≥ 15 years via face-to-face interviews. Analyses were performed by using SPSS. Overall, 32.1% (95%CI: 30.3, 33.9) of the respondents were exposed to advertisement or promotions on cigarettes in the last 30 days prior to interview. Those in age groups of 18-19 (36.8%), 20-29 (34.9%) and 30-39 (33.1%) were significantly more exposed to cigarette advertising and promotion than those in 40-49 (30.7%) and 50-59 (30.7%) age groups. ‘Others’ ethnicity (37.6%), those with college or above education (33.5%) and smokers who made quit attempts in the past 12 months (36.6%) were significantly more exposed to cigarette advertising and promotion. A third of Malaysian adults self-reported having been exposed to cigarette advertising or promotion; they were younger adults, ‘Others’ ethnicity and with college or above education. Further studies are needed to evaluate the effectiveness of banning on advertising and promotion of cigarettes in Malaysia. In addition, tough enforcement with rigorous monitoring for bans on advertising and promotion of cigarettes is needed.

Keywords: self-reported exposure, advertising, promotion, cigarette

HPHP002

Sugar Sweetened-Beverages (SSB) Excise Tax

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The consumption of SSB have received attention from public concern worldwide, is likely linked to risks for overweight, obesity, diabetes, and heart disease. Taxation has been proposed for reducing the intake of SSB. We described process in gathering evidence for knowledge synthesis on the effect of sugar sweetened beverages (SSB)

tax on the SSB consumption using the Cochrane systematic review method. We screened titles and abstracts of articles on SSB tax to identify important components of SSB tax and the operational definition of SSB. We conducted literature searches in PubMed, CENTRAL, EMBASE and google scholar to identify evidence on the key structures, processes and effectiveness of the SSB tax delivery. A range of SSB definition, type of SSB tax, different policy contexts and potential effects of SSB tax to the consumers were identified through a series of workshops and discussion. A total of 375 studies were retrieved with full text, and only 11 studies were included after duplication was removed. Three studies from Australia were primary study, two studies from the USA, one study was a modelling; and a control-cohort before and after, one study from Brazil was a survey, one study from New Zealand was an RCT, one study from Mexico was a survey, one study from Germany was a modelling and the last 2 studies were a systematic review. Out of the 11 studies, only 10 studies showed decreased on SSB consumption when SSB tax was implemented and 5 studies showed on health-related outcome. In conclusion, SSB tax showed reduced in SSB consumption.

Keywords: sugar sweetened-beverages, SSB, excise tax

HPPP003

Community Participation in Health Screening Activities And Its Barriers: Findings From The Community Empowers The Nation Program (KOSPEN), Malaysia

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Community-based health screening program (KOSPEN) has been implemented in Malaysia in 2013 to address the growing burden of non-communicable diseases (NCDs) in population. This study aimed to identify community participation in screening activities and its barriers. This nation-wide cross-sectional survey was conducted in May to June 2016 in KOSPEN localities. A total of 2354 adult aged 18 years and above were selected in the survey using two-stage stratified cluster sampling design. Demographic variables, participation in health screening and its barriers were obtained through face-to-face interviews using validated questionnaires. Out of 2156 respondents interviewed (response rate of 91.6%), only 20.6% had ever participated in the KOSPEN health screening program. Among those participated (n=532), the prevalence of abnormal blood pressure (hypertension), blood glucose (diabetes) and body mass index (BMI) were 18.8%, 16.1% and 15.4% respectively. Among those who are not participated in the health screening (79.4%, n=1624), the commonly reasons given were “did not know health screening was conducted in their localities” [(43.5%, 95% CI: 30.1 - 57.9)], followed by ‘no time’ [(18.4%, 95% CI: 9.0 - 33.9)] and “had ever undergone health screening elsewhere” [(4.2%, 95% CI: 2.5 - 7.0)]. The study revealed that the majority of communities in the KOSPEN localities are not aware of the health screening activities. Thus,

appropriate strategies such as the use of social networks and reminder notices should be considered to increase the participation in KOSPEN health screening program.

Keywords: non-communicable diseases, KOSPEN, health screening, Malaysia.

HPPP004

Adequate Plain Water Intake Among Malaysian Adult: Findings from The National Health and Morbidity Survey 2015

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Water is the core chemical constituent in the human body. The World Health Organization recommends consuming plain water adequately as it is essential for good health. The aim of this study was to determine the prevalence of adequate plain water intake among Malaysian adults. A two-stage stratified sampling design was used to ensure national representativeness of the Malaysian adult population. Data were obtained from the National Health and Morbidity Survey 2015 which was carried out via face-to-face interviews using mobile devices. Data analysis was done using SPSS version 21.0 and complex sample analysis was carried out at 95% confidence interval. The results showed the overall prevalence of adequate plain water intake (≥ 6 glasses per day) among Malaysian adults was 72.9% (95% CI: 71.8, 74.1). The prevalence of water intake was higher among Malaysian adults from urban areas [73.3% (95% CI: 12.7, 16.4)], aged 35-39 years [77.8% (95% CI: 75.2, 80.3)] and Chinese ethnicity [78.6% (95% CI: 76.5, 80.5)]. A significant difference was seen between both genders [females 70.2% (95% CI: 68.8, 71.6) vs males 75.5% (95% CI: 74.0, 76.9)]. The lowest water intake was among adults aged 75 years and above [54.7% (95% CI: 50.1, 59.4)]. Majority of Malaysian adults drink enough plain water, however, more efforts to encourage adequate water intake should be done especially among the elderly according to the Malaysian Dietary Guidelines 2010 recommendations.

Keywords: plain water, adult, NHMS 2015

HPPP005

Inter-Rater Reliability of Telephone Interview In Obtaining Long-Term Stroke Outcome

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Telephone has turned into a popular gadget for consultation, follow-up reminder, clinical education and research tool. The reliability between the telephone

interviewers is important as it could affect the accuracy of the findings published. We aimed to determine the interrater reliability between the telephone interviewers when assessing the stroke patients' Barthel Index (BI) scores at 1-year post discharge. Patients whom status was alive at discharge selected in a retrospective cohort stroke project were recruited in this study. Telephone numbers were obtained from the medical folders. Patients and/or proxies were interviewed based on a standardized script in Malay or English version, to collect the functional status (BI score) at 1-year post discharge. BI score was collected simultaneously by three assessors. Pre-calculated sample size with expected intraclass correlation coefficient (ICC) $\rho = 0.85$, precision = 0.05, and confidence level 95% required a minimum of 86 subjects. The ICC was computed by a two-way mixed-effects-model, single measure, and absolute agreement across all subjects. Data analysed using the software R version 3.4.4. Out of 193 patients, 29 (15.0%) were uncontactable, 2 (1.0%) were not consented, and 35 (18.1%) were informed death status. In 127 subjects analysed, present study marked an interrater reliability between interviewers at 0.996, with 95% confidence interval = 0.995, 0.997, $p\text{-value} < 0.001$. Excellent inter-rater agreement supports the evaluation of the patients' functional status post discharge via phone interview in local setting. The role of telephone interview is verified in updating the clinicians on their acute clinical management towards the long-term stroke prognosis.

Keywords: inter-rater reliability, telephone interview, stroke outcome

HPPP006

Dedicated Team in Oral Health Promotion Activities - Why Do We Need Them?

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Dental caries is a preventable disease. It can be stopped and even potentially reversed during its early stages. If appropriate promotion and prevention programs are implemented, the result will be fruitful. This pilot study was aimed to describe the oral health promotion activities by "Dedicated Team" and determine its effectiveness in Federal Territory of Kuala Lumpur & Putrajaya. It was conducted in January 2017 in which the team was headed by forty-eight dental personnel with eighteen teams comprised of Dental Officers and Dental Therapists in WPKL & P. The effectiveness was measured by the observed number of activities and patients seen. The team were divided according to five zones and consisted of different number of dental personnel with Lembah Pantai (15), Titiwangsa (11), Kepong (9), Putrajaya (7) and Cheras (6). Their role did not only confine to the oral health promotion aspect, but we had identified four other aspects which were clinical prevention, collaboration with other agencies, quality initiatives and administration. In 2017, the promotion activities had shown an increment of approximately 40% compared to 2015. The increment was due to additional activities by the Dedicated Team which were "Doktor Muda", Young Adult and collaboration with other agencies

program. In addition, the number of patients who received Mouth Self Examination training was also noted increased tremendously from 4233 in 2015 to 11,385 in 2017. Therefore, we observed that having a “Dedicated Team” is effective in ensuring the oral health promotion and prevention program. This is because, the team can focus on planning, implementation and evaluation of oral health promotion and prevention program effectively.

Keywords: Dedicated Team, promotion, prevention

HPPP007

Physical Activities Among KOSPEN Communities in Malaysia

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The increasing burden of non-communicable diseases (NCD) and their risk factors in Malaysia is worrying. KOSPEN, a nationwide community intervention initiated by Ministry of Health aimed to reduce NCD risk factors by promoting healthy lifestyle which includes physical activities. The objective of this study was to determine the level of physical activity and its sociodemographic factors among KOSPEN community. A community based cross sectional study was conducted to evaluate the implementation of KOSPEN in 2016. Adults aged 18 years and over in KOSPEN communities throughout the country were sampled via two-stage stratified cluster sampling method. Level of physical activity was determined using International Physical Activity Questionnaire. Data was collected via face to face interview. Multivariable logistic regressions was performed to determine the socio-demographic factors associated with physical activity. A total of 2156 respondents participated in the study. The study revealed 43.6% (95% CI: 38.1, 49.2) of the respondents were highly active, 33.2% (95% CI: 29.4, 37.2) were minimally active and 23.3% (95% CI: 18.8, 28.4) were inactive. The probability of being highly active were associated with males, Malay, respondents aged less than 60 and those in the lower quintiles of household income compared to the non-highly active group. Physical activity should be promoted among female and those in higher socioeconomic group for a better healthy lifestyle.

Keywords: physical activities, community intervention, KOSPEN

PPP008

A Study on The Effectiveness Of Domiciliary Health Care Service To Improve The Functional Outcomes After 3 Months Rehabilitation Intervention

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Domiciliary Health Care Service (DHCS) was been introduced since 2014 in Malaysia. This program was designed to provide continuation of care to stable bedridden patients after discharged from the hospital. Rehabilitation service aims to encourage the patients to achieve their optimum functionality level through carer's education to help the patients to improve their functionality level and also to reduce the readmission rate by providing quality health care at home and community. The objectives of this study was to explore the effectiveness of the rehabilitation service provided to the patients in improving the functional outcome following three months interventions at home and community. Methods: A retrospective cohort study design was conducted on stable bedridden patients registered for DHCS in Seremban Health Clinic from Jun 2017 to Mac 2018. A standardized assessment form by using Modified Barthel Index (MBI) were used in the study to assess the level of functionality of a patient. The evaluation scores will be carried out during the first visit to their home (upon enrollment) and the final assessment will be done upon discharge (after 3 months receiving the rehabilitation intervention). Result: A total of 39 stable bedridden patients were registered for DHCS program, 12 cases (30.7%) were excluded from the study due to death. Mean age of the patients is between 16 and 92 years. A total of 19 cases (48%) shows improvement in MBI score. There was significant improvement of MBI after three months undergone rehabilitation interventions.

Keywords: Domiciliary Health Care Service (DHCS), Modified Barthel Index (MBI), Rehabilitation

PPP009

Relationship Between Health Screening Practice with Quality of Life Among Community In Seksyen 9, Selangor

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Health screening practice could empower individual in community to take care of their own health and assist those who already suffered from chronic illnesses in managing their condition. However, direct impact of screening toward quality of life

(QOL) status remains controversial. Hence, a cross sectional study was conducted in six residential areas in Seksyen 9 Selangor with the aim to determine the relationship between health screening practice with QOL status in this community. The QOL status was measured based on data collected using validated WHOQOL-BREF questionnaire. A total of 197 respondents were recruited with majority were Malays (86.3%), female (60.9%), had tertiary education (80.2%), with household income category between RM3000-13000 (61.4%) and with median age of 41 years old. More than 80% of respondents suffered from chronic illnesses (either diabetes, hypertension or asthma). About 86% of them had undergone health screening with median age during first screening at 25 years old. Respondents showed highest QOL scores in social relationship domain (64%) and least scores (61%) in psychological domain. Health screening practice to monitor for blood pressure showed significant relationship with scores in social relationship domain ($\chi^2 (2) = 6.30$, $p=0.04$), while screening for blood glucose had significant relationship with environment domain ($\chi^2 (2) = 8.64$, $p=0.01$). Evidence that health screening practice influence QOL status should be explored further to provide in-depth knowledge into the importance of this practice in the general population.

Keywords: health screening, quality of life, practice, community

HPPP010

Stages of Change For Healthy Eating Towards Nutritional Status Among Healthcare Staff In Bera District

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Stages of change (SOC) studies found that people move through a series of stages when modifying towards a healthier behaviour. The aim of the study was to determine SOC for healthy eating towards nutritional status among the healthcare staff of Bera District Health Office. A cross-sectional study was conducted using universal sampling. Those who fulfilled the inclusion criteria were recruited using a self-administered questionnaire. Socio-demographic and SOC for healthy eating data were obtained and anthropometric data was measured. A total of 198 subjects were examined with a mean age of 34.57 ± 7.75 years, majority was female (68.7%), Malay (91.4%), married (82.3%), graduated with diploma or degree (70.2%) and was in the pre-contemplation/ contemplation stage (52.0%). One-way ANOVA and Chi-square tests revealed that no significant difference or association was found between SOC and all characteristics except for Body Mass Index (BMI) and waist circumference (WC) ($p<0.05$). Bonferroni Post Hoc test shown that both BMI and WC were significantly different between pre-contemplation/contemplation (BMI: 27.17 ± 5.24 kg/m²; WC: 87.00 ± 11.32 cm) and maintenance stage (BMI: 21.51 ± 2.58 kg/m²; WC: 77.51 ± 7.94 cm) as well as between preparation/action (BMI: 27.51 ± 6.12 kg/m²; WC: 88.26 ± 13.74 cm) and maintenance stage ($p<0.05$). No significant difference in BMI and WC between pre-contemplation/contemplation and preparation/action stage was found. Being in the maintenance stage was likely to have a lower BMI and WC, thus

an intervention program that could encourage people move from the preaction stage to the later SOC may help people achieve a better nutritional status.

Keywords: stages of change, obesity, nutritional status

HPPP011

Health Beliefs and Knowledge On Zika Virus Infection Among Pregnant Women In Johor Bahru District

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In February 2016, Public Health Emergency of International Concern had announced zika virus outbreak after sudden increasing of microcephaly cases and other neurological disorders in some areas which affected by zika virus. Some studies proven that other than transmitted via mosquito bites, zika virus can also be transmitted through blood-borne and sexual intercourse. This study aims to describe health beliefs and level of knowledge on zika virus infection among pregnant women in Johor Bahru district. A cross sectional study with self-administrated questionnaire was conducted in April 2017 on 724 women attending antenatal care at public health clinics. Median (IQR) score for respondents' health belief toward zika virus infection (maximum scale of 5) were 4.0 (0.75) for perceived severity, 4.0 (1.0) for perceived susceptibility, 2.4 (0.8) for perceived barrier, 4.25 (1.0) for perceived benefit and 4.0 (0.43) for self-efficacy. Majority of the respondents had high level of overall knowledge related to zika virus infection (62.2%), but majority of them wrongly answered most of the questions pertaining to transmission of zika virus and signs and symptoms of disease. From multivariate analysis, the predictors for level of knowledge on zika virus infection were average household income less than RM3000, high perceived severity and high self-efficacy. Result from this study suggest that population had the awareness on zika virus infection but further health promotion should be continued especially on transmission and sign and symptoms of zika virus infection and other new diseases.

Keywords: zika virus, health beliefs, knowledge