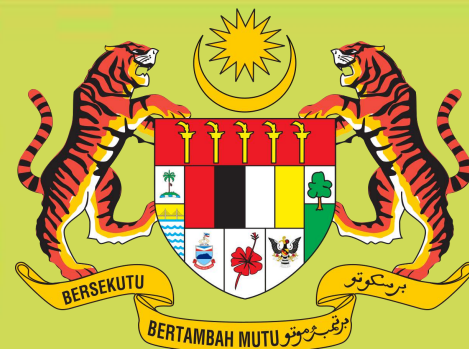


MaHTAS



MALAYSIAN HEALTH TECHNOLOGY ASSESSMENT SECTION E-NEWSLETTER

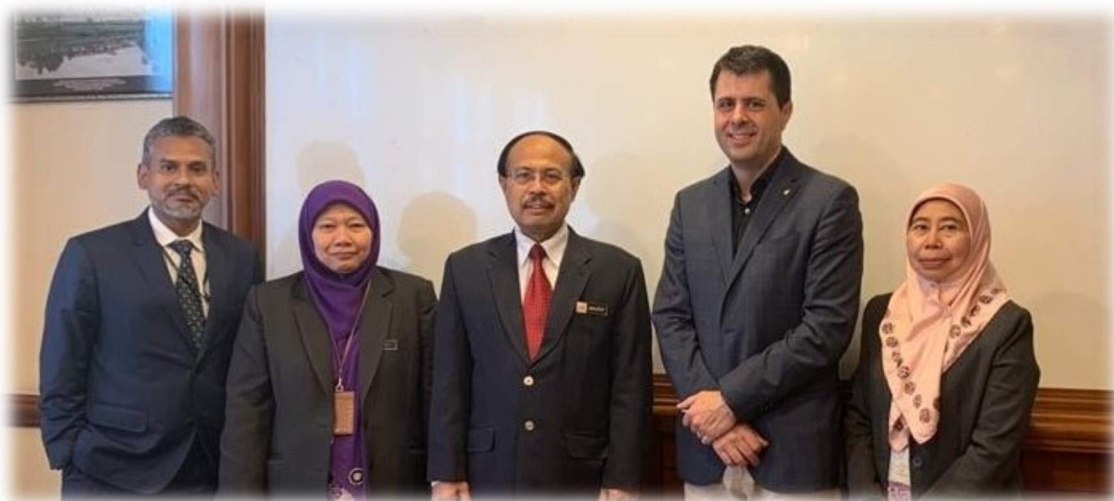
HEALTH TECHNOLOGY FORECASTING

With the advancement and rapid introduction of innovative and disruptive health technologies, healthcare sector needs to match the pace in tandem and timely manner. Some technologies are undeniably flashy and tech-savvy, but the additional health benefit is uncertain. As quoted by Paul Saffo, 'The goal of forecasting is not to predict the future but to tell you what you need to know to take meaningful action in the present'. Therefore, predicting and choosing which technologies have significant and promising impact are something healthcare system needs to be proficient at to maximize efficiency by putting the right action and allocate resources on highly-predictive technologies.

Malaysian Health Technology Assessment Section (MaHTAS) had held a capacity building workshop on 'Forecasting of Emerging Health Technology and Reassessment of Obsolete Technology' on April 16th till 18th, 2019. This highly-anticipated program was a collaboration with World Health Organization (WHO).

Dr. Inaki emphasised that Horizon Scanning is not about making predictions but systematically investigating evidence about future trends. Horizon Scanning helps to analyse whether it is adequately prepared for potential opportunities and threats. This process will ensure that our policies are resilient to different future environments.

MaHTAS was honoured to have Dr Iñaki Gutierrez-Ibarluzea, the Vice-Chairman of EuroScan (the International Network for the identification and assessment of new and emerging health technology) and the Vice President



of Health Technology Assessment International (HTA-i) to share his vast experiences and knowledge. The 3-days-workshop were participated by reviewers from MaHTAS and Technical Advisory Committee members of Horizon Scanning which comprised of clinicians, regulators and policy makers. The events were packed with lectures and interactive role-playing sessions among participants on several process of Horizon Scanning system. Topics on reassessment of obsolete technology had gained much interest among the participants since the system has not been implemented yet in this country.

Great participation from the attendees contributed to the success of the workshop. Several areas in the existing system requires augmentation for better outcomes. It includes expanding the identification process towards PO approach, refining filtration and prioritisation criteria, improving the report's structure and upgrading dissemination process and Horizon Scanning evaluation system. The most anticipating one would be the establishment of assessment of obsolete technology.



HTA & CPG COUNCIL MEETING



Two Health Technology Assessment (HTA) and Clinical Practice Guidelines (CPG) meeting were held on 26th November 2018 (2/2018) and 18th June 2019 (1/2019). Altogether two HTA reports, five CPGs, 12 Technology Review (TR) and five Horizon Scanning Tech Brief reports were presented at the meetings.

HTA: Bone Targeting agents in preventing skeletal related events for metastatic cancers of solid tumours and Economic Evaluation

CPG:

- Management of Diabetic Foot (Second Edition)
- Management of Haemophilia

TECHNOLOGY REVIEW

- Whole Body Computed Tomography in adult with major blunt trauma injuries
- Saltmeter for food
- Botulinum toxin type A injection for chronic anal fissure
- Photodynamic therapy for cancer treatment-an update
- Phytotherapy for autism and attention deficit hyperactive disorder
- Immunotherapy for metastatic melanoma and economic evaluation

HORIZON SCANNING (HS) TECHBRIEF:

- Rotasiil
- I-MRT

**HTA
& CPG
COUNCIL
MEETING
2/2018**

HTA: Integrated Vector Management for Aedes Control

- ST Elevation Myocardial Infarction (STEMI) 4th edition
- Management of Rheumatoid Arthritis

CPG:

- Management of Major Depressive Disorder in Adults 2nd Edition
- Management of Mandibular Condyle Fractures (Second Edition)

TECHNOLOGY REVIEW

- Palliative Care Services
- Indwelling Pleural Catheter (IPC)
- Non-invasive Diagnostics Tests for Liver Fibrosis
- Intradermal (ID) Injection for Rabies Vaccine: Post– Exposure (PEP) and Pre-exposure (PrEP) Prophylaxis and Economic Evaluation
- Sodium-Glucose Co-Transporter 2 (SGLT2) Inhibitors Versus Gliclazide in the treatment of Type 2 Diabetes Mellitus
- Detection of Asymptomatic Dengue Infection

- Intranasal Esketamine
- Targeted Low Dose Radiotherapy for Early Breast Carcinoma Post Breast Conserving Surgery
- EZ Weigh

**HORIZON
SCANNING
(HS)
TECHBRIEF:**

**HTA
& CPG
COUNCIL
MEETING
1/2019**

HTA: BONE TARGETING AGENTS (BTAS) IN PREVENTING SKELETAL RELATED EVENTS (SRES) FOR METASTATIC CANCERS OF SOLID TUMOURS AND ECONOMIC EVALUATION

-HTA IN BRIEF-

What you already know?

Metastatic cancer mostly affects skeleton and weakens bone integrity that lead to Skeletal Related Events (SREs). SREs may include spinal cord compression (SCC), pathological fracture, the need for bone radiation and bone surgery. In Malaysia, according to the National Cancer Registry Report, a total of 64 275 cancer deaths occurred within the period of 2007 and 2011 and over the years, the numbers have gradually increased. The major solid tumour types that tend to metastases to bone include breast, prostate, lung, kidney and thyroid cancers, which are among the common cancer in Malaysia.

Why this review is important?

Two types of BTAs currently used for the prevention and treatment of SREs are Bisphosphonates and Denosumab. The aim of this review is to determine which BTAs should be used in routine clinical practice?

What are the main results that we found?

Effectiveness,

Group 1: BTAs vs placebo/ no treatment/ best supportive care (BSC)

BTA significantly delayed time to first SREs, reduced the risk of first and subsequent SREs in all types of cancer except non-small cell lung cancer (NSCLC). Denosumab was superior in reducing risk of developing SREs followed by Zoledronic acid (ZA) and Pamidronate. Bisphosphonates significantly reduced the number of patients with SREs in patients with breast and prostate cancer only. ZA reduced the number of SREs compared with placebo in lung cancer. Skeletal Morbidity Rate (SMR) occurred less frequent in breast, prostate cancer and Other Solid Tumors (OST) for patients who received ZA and Pamidronate. The result showed significant pain relief and better quality of life with Biophosphanates in patient with breast and prostate cancer.

Group 2: Bisphosphonates vs alternate Bisphosphonates

ZA was the most effective agent in delaying the time to first SREs followed with Pamidronate and Ibandronate in breast and lung cancer. ZA significantly reduced risk of first and subsequent SREs in patients with breast cancer. There was no significant difference in other types of cancers.

Group 3: Denosumab vs Bisphosphonates

Pooled data from meta-analysis showed that Denosumab significantly delayed the time to first SREs by 18% [Hazard Ratio (HR): 0.82, 95% CI: 0.77, 0.87] and reduced the risk of first

and subsequent SREs by 17% (HR: 0.83, 95% CI: 0.78, 0.88) for all types of cancer. Overall survival was similar for all types of cancer (HR: 0.94, 95% CI: 0.87, 1.01) except for lung cancer where patients who received Denosumab significantly delayed the overall survival by 21% (HR: 0.79, 95% CI: 0.65, 0.96)

Group 4: Different regimen of BTAs (12-weekly vs 4-weekly)

ZA given either 12 weekly or 4 weekly did not change the risk of first and subsequent SREs in breast and prostate cancer patients (HR: 0.987, 95% CI: 0.83, 1.12) and also the overall number of patients with SREs (RR 100, 95% CI; 0.88, 1.15).

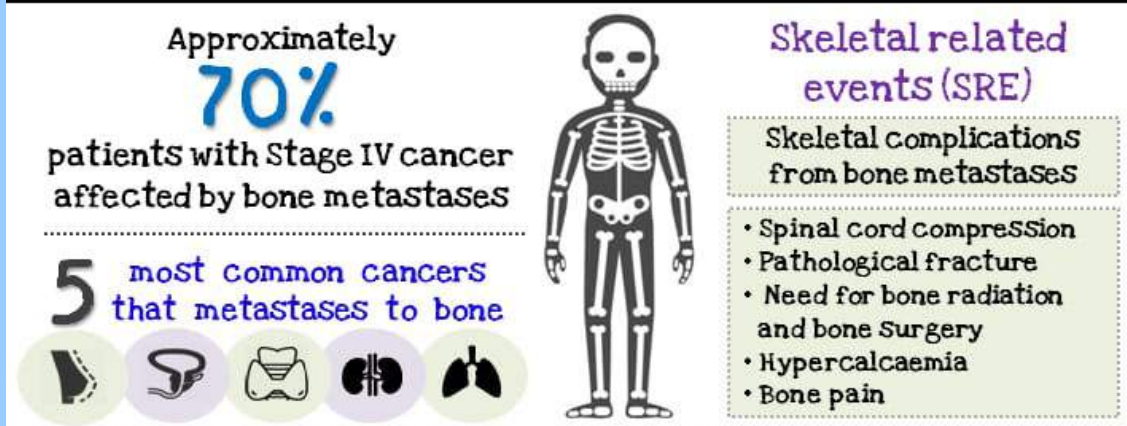
Safety.

There was no significant difference in the adverse events of hypocalcaemia and Osteonecrosis of the Jaw (ONJ) between 12-weekly and 4-weekly ZA treatment. However, less renal toxicity events were observed with 12-weekly treatment.

Decision analytic economic modelling,

The use of bone targeting agents in preventing skeletal-related events among Stage IV solid tumour patients with bone metastases is a cost-effective strategy. Within this evaluation, the most cost-effective option was 12-weekly intravenous ZA, yielding an ICER of RM 4,968.87 per QALY gained which is lower than the cost-effectiveness threshold of 1 GDP per capita. The estimated total financial implications for this strategy with 100% potential patients coverage was RM 8.8 million per year.

BONE TARGETING AGENTS IN PREVENTION OF SKELETAL RELATED EVENTS FOR METASTATIC CANCERS OF SOLID TUMOUR



Systematic review & meta-analyses

Bone targeting agents (BTAs) were effective in **delaying and preventing SRES**

Denosumab was the most effective BTA, followed by **Zoledronic Acid**

No difference in SRE prevention between **12-weekly and 4-weekly IV Zoledronic Acid**

4-weekly Denosumab was more costly than **4-weekly Zoledronic Acid**

Local economic evaluation (Markov model)

Both Denosumab and Zoledronic Acid are **cost-effective** in preventing SRES

The most cost-effective option: **12-weekly IV Zoledronic Acid** ICER: RM 4,968.87 per QALY gained

INTEGRATED VECTOR MANAGEMENT FOR AEADES CONTROL

-HTA IN BRIEF-

What you already know?

Aedes aegypti, is a vector of international concern that transmit important arboviral diseases; dengue, yellow fever, zika and chikungunya causing considerable morbidity, mortality and healthcare expenditure in low and middle-income countries. Dengue is the fastest emerging arboviral infection posing a major public health concern throughout tropical and subtropical region in the world, with a 30-fold increase in global incidence reported over the past 50 years and is endemic in more than 100 countries.

The global increase of dengue incidence is also experienced by Malaysia with reported incidence of 30.2 (2000) to 261.6 cases per 100,000 population (2017). Dengue has high social and economic impact, affecting not just the patient, but also families, health services and the community. In Malaysia, an estimated US\$73.5million in public funds or 0.03% of the country's GDP was spent on its National Dengue Vector Control Programme, which represented US\$1,591 per reported dengue case (2010).

Why this review is important?

The control of vector-borne diseases is one of the greatest challenges on the global health agenda. Factors influencing dengue transmission such as the virus, the human as the host, the vectors, unsatisfactory environmental condition and climate change with rapid urbanisation, creates challenge in the efficient control of the disease. Despite decades of control programme, mosquito population is still abundant and dengue incidence persists with outbreaks occurring in affected communities worldwide. Besides, there was no evidence that vector-control efforts such as massive use of insecticides have significant effect on dengue transmission. Thus, the need for evidence-based selection of the most appropriate, cost-effective and environmentally save interventions for *Aedes* control has never been greater.

What are the main results that we found?

Effectiveness,

Three entomological indices were widely used as outcome measures; the Breteau Index(BI), Container Index(CI) and House Index(HI).

Combination of larviciding and community based strategy; combined community based environmental control and water container cover; as well as house screening reduced the rate of dengue incidence (RR=0.19, OR=0.22,OR=0.22) respectively.

With regard to BI, the pooled Relative Effectiveness (RE) ranged from 0.24 (chemical control, outdoor adulticide) to 0.71 (environmental management consisted of environmental modification, environmental manipulation, modification of human habitat or behaviour to reduce human-vector contact). Pooled RE for CI ranged from 0.17 (IVM; combination of EM and chemical control) to 0.43 (EM). Meanwhile, pooled RE for HI ranged from 0.12 (IVM; EM and chemical control) to 0.49 (EM). IVM (combination of EM and chemical control) was the most effective method to reduce the CI,HI, BI with the above results. Performance analysis of different control strategies showed all category of interventions (biological, chemical, integrated) contributed significantly to the control of *A aegypti* ($p<0.0001$), with integrated intervention demonstrated as the most effective method.

Community participation was effective in reducing BI and CI, with pooled RD of -0.13, -0.03. The community-based strategy adopted in the studied community was rated as well-sustained, sustainability scores ranged from 4.20 to 4.42.

Safety.

There was no retrievable evidence on the safety of IVM for *Aedes* control.

Cost-effectiveness,

Evidence demonstrated there was variation in the ICER for different strategy; following community participation was \$3952.84 per DALY avoided, using two applications of high-efficacy adult control was \$615 per DALY saved; whereas ICER for the use of six applications of high-efficacy adult control was \$1267 per DALY saved. The strategy using two applications of high-efficacy adult control per year was the most cost-effective (cost minimisation strategy), and using six applications of high-efficacy adult control per year was the most cost-effective (benefits maximisation strategy). The community-based approach was more cost-effective compared to vertical programme from health system perspective (US\$964 versus US\$ 1406 per focus) as well as from society perspective (US\$1508 versus US\$1767 per focus).

Malaysia spent an estimated US\$73.5 million (95%CI 62.0,86.3) for the national dengue vector control, constituting 0.03% of the country's GDP in 2010 (US\$247.5billion), 92.2% of these costs were incurred at District Health Department level; human resources costs made up 64.8% of total national vector control costs.

Financial implication

In Malaysia, over three years (2016 to 2018), the proportion of total cost saving from reduction of dengue cases (MYR 101million) relative to total cost of integrated dengue vector control (MYR 772 million) was approximately 13.08%. minimal reduction (15.07%) in cost-related to dengue illness (MYR 101 million) relative to the estimated annual economic burden of dengue illness demonstrated over three years (MYR 670 million).




TECHNOLOGY REVIEW IN BRIEF

WHOLE BODY COMPUTED THOMOGRAPHY (WBCT) IN ADULT WITH MAJOR BLUNT TRAUMA

Advances in computed tomography (CT) technology have allowed whole body CT (WBCT) also known as CT pan-scan or total-body CT (TBCT) in rapid diagnostic imaging of traumatic injuries for the entire body. In Malaysia, WBCT is not widely practice as routine imaging procedure due to lack of clear guidelines. Thus, we conducted a mini-HTA and below is the result

MALAYSIA
Not widely practice as routine imaging procedure due to lack of clear guidelines



WBCT VERSUS CONVENTIONAL/ SELECTIVE CT SCANNING

- Reduced overall mortality rate (odds ratio [OR] 0.21 to 0.75)
- Increases the chance of survival among patients in moderate shock (OR 0.73) and severe shock (OR 0.67).
- Highly specific in detecting injuries to different body regions (97.5-99.8%) but sensitivity varies (79.6-86.7%).
- Reduced time spent in ED, from admission to injury diagnosis and operating room, length of hospital stay but no different in the ICU stay

COST-EFFECTIVE
strategy in United States

“Although patients underwent WBCT were exposed to higher radiation dose (>20 mSv), the position of both arms (arms-up) not only reduced the radiation but produced highest imaging quality.” -**SAFETY**-

SALTMETER FOR FOOD

SALT METER FOR FOOD



1 The most common methods for measuring sodium content in food are conductivity method, ion selective electrode (ISE), refractometry and titration method.

2 Based on limited retrievable evidence from 4 experimental laboratory studies, saltmeter using ISE method has shown to have a good precision and good correlation to reference methods (atomic absorption spectrometry; Volhard titration). However, it did not perform well with fatty foods due to matrix effect.

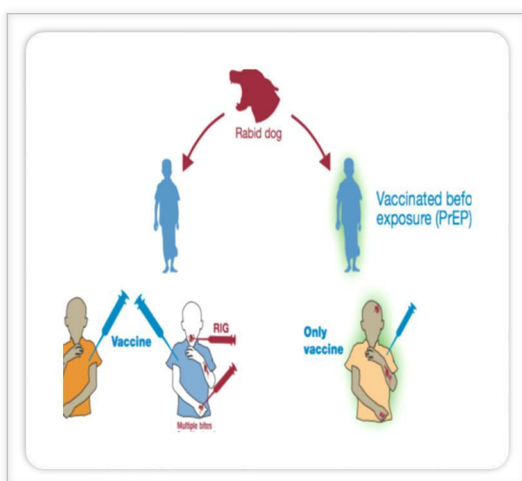
3 No retrievable evidence on salt meter using other methods

INTRADERMAL (ID) INJECTION OF RABIES VACCINE

This study was conducted to assess and compare the safety, efficacy / effectiveness, cost-effectiveness and organizational issue of intradermal (ID) and intramuscular (IM) rabies vaccine for PEP and PrEP.

Efficacy/

Both administration routes of rabies vaccine either intradermal (ID) route or intramuscular (IM) route achieved required Geometric Mean Concentrations (GMT) and seroconversion rates (SCR) in both post and pre-exposure prophylaxis.



Safety

Compared with IM routes, more adverse events were observed in ID route: erythema, induration, pain, itching and lymphadenopathy

BOTULINUM TOXIN TYPE A (BTA) FOR CHRONIC ANAL FISSURE (CAF)

An anal fissure, fissure in Ano or rectal fissure is a break or tear in the skin of the anal canal. The anal fissure is considered chronic if they have been present for more than six weeks. The aim of the treatment strategies is to reduce the sphincter tone with either medical agent or surgical interventions. This technology review actually looking at the effectiveness of BTA injection either in combination with other treatment or BTA injection alone.

Effectiveness & Safety

01 Combination of BTA with Lateral Internal Sphincterotomy (LIS):

- ❑ The combination treatment showed an improvement in CAF
- ❑ Common complication in combination treatment was anal bleeding that resolved spontaneously few days after treatment

02 BTA versus LIS:

- ❑ LIS was more effective in healing and preventing recurrence of anal fissure compared with BTA
- ❑ However, incontinence was lesser in BTA than in LIS

03 BTA versus Topical Nitrates:

- ❑ No difference in healing, recurrence rate and incontinence rate between BTA and topical nitrates
- ❑ Headache occurred more in topical nitrates patients compared with BTA patients

04 BTA versus Lidocaine:

- ❑ Significantly more effective than lidocaine in treating CAF

TECHNOLOGY REVIEW IN BRIEF

INDWELLING PLEURAL CATHETER

Recently, there has been debate over whether pleurodesis or an IPC is the better option for patients with malignant pleural effusion (MPE). Leading guidelines currently recommends talc pleurodesis as first line treatment. However, the use of IPC as first-line treatment remains controversial and studies directly comparing first-line therapy with IPC and pleurodesis in a pragmatic setting based on patient/clinician choice are lacking. Therefore, we conducted this review.

01

"EFFECTIVENESS"

Comparable between IPC and pleurodesis for symptomatic improvement in dyspnoea, chest pain, and QoL. Spontaneous pleurodesis rates (IPC between 30% and 51%. Fewer late recurrences or failure rates in patient treated with IPC.



02-SAFETY

No significant differences in serious adverse events, mortality, and survival time. Chemotherapy did not increase the risk of infection while IPC is in place.



IPC versus pleurodesis

03-ECONOMIC EVALUATION

MEDIAN 0-10 DAYS VS. 4-18 DAYS


04-ORGANIZATIONAL fever days in hospital

- IPC more cost-effective when life expectancy < 14 weeks
- IPC less likely to be cost-effective if nursing care (2-hour per week) is required
- IPC remains favourable in patients with both limited survival and assumed nursing care


DETECTION OF ASYMPTOMATIC DENGUE INFECTION

Dengue fever is an important mosquito-borne human viral disease globally caused by the infections of four dengue virus serotypes (DENV 1-4). It has been a known fact that the majority of DENV infections are clinically inapparent. Detection of asymptomatic dengue infection is difficult and challenging. While symptomatic dengue can be clinically suspected and then the confirmatory laboratory diagnosis can provide definite diagnosis, there is no clinical clue for asymptomatic infection.


A systematic review conducted by MaHTAS found that:



- ❖ Inapparent to symptomatic (I:S) ratio ranged from 0.9:1 to 2.5:1
- ❖ Serology test were frequently used in incidence and seroprevalence studies



- ❖ Very limited evidence retrieved on diagnostic accuracy study
- ❖ Asymptomatic and pre-symptomatic dengue virus (DENV) infected people were more infectious to mosquitoes compared to symptomatic people



- ❖ However, no evidence retrieved on transmission of dengue virus from those mosquitoes to human

Conclusion: Programme for detecting asymptomatic dengue infection is not advocated due to insufficient evidence on the transmission.

INTRASANAL ESKETAMINE

TECHBRIEF

HORIZON SCANNING

INTRANASAL ESKETAMINE FOR TREATMENT- RESISTANT DEPRESSION (TRD)



- Esketamine is a new molecular entity and a non-competitive glutamate N-methyl-D-aspartate (NMDA) receptor antagonist
- In antidepressant activity, esketamine targets the glutamate NMDA receptor. It helps to restore synaptic connections in brain cells of MDD patients
- On 6th March 2019, FDA approved as a NEW drug, Not registered in Malaysia yet.

EFFECTIVENESS

4 STUDIES

- About 50-70% reduced risk of relapse among TRD patients
- About 69-78.4% TRD patients responded to treatment and depressive symptoms improved up to one year (≥50% reduction in the Montgomery and Asberg Depression Rating Scale (MADRS) total score)



CHEAPER
as compared to other administration route



Mild to moderate & rapidly resolved



Important Things To Know

Only available through a **restricted distribution system**

The administration

- **must be supervised & closely monitored by certified doctors**
- **strictly cannot be taken home**
- less invasive, more convenient & easier to use

REMS (Risk Evaluation and Mitigation Strategy) should be undertaken to ensure the benefits of the drug outweigh the risks of misuse, abuse, and serious adverse outcomes from dissociation and sedation.



Source : Intranasal Esketamine TechBrief Report, MaHTAS, 2018

Rotasiil®



- A highly heat stable, live attenuated bovine-human rotavirus-pentavalent vaccine (BRV-PV).
- Indication: for young children < five years old of age mainly suffered moderate to severe gastroenteritis.



- Three doses of the vaccine are administered orally, four weeks intervals, beginning at six, ten and 14 weeks of age. The vaccine received approval from the Drug Controller General of India in January 2017 and undergoing assessment for World Health Organization (WHO) pre-qualification

What the **EVIDENCE** says?

Efficacy:

Rotasiil® significantly prevent > 50% of very severe rotavirus infections. The efficacy of Rotasiil® against gastroenteritis of any severity was 35%. (Kulkarni et al, 2017)

It was in line with similar analysis for Rotasiil® in Nigeria (35.4%), RotaTaq in Africa (30.5%), Rotavac in India (36.4%) and Rotarix in Malawi (34.7%).

Safety:

Adverse event: mild in severity (discoloration of oral mucosa, reduced appetite, fever and vomiting after 30 minutes of administration) and did not recur with subsequent doses and no cases of intussusception reported.

Cost:

Estimated price in below USD 2.00 (much cheaper as compared to other two rotavirus vaccines in the market—Rotateq/Rotarix)

EZ WEIGH

EZ Weigh is an innovative technology to repack powdered medicine. It is introduced by Pharmacy Department Hospital Serdang. This technology has won innovation awards such as first winner of Pertandingan Projek Inovasi 5S Sesi 3/2016; Konvensyen Team Excellence Wilayah Tengah (2017) – Emas, Anugerah Inovasi Peringkat Kebangsaan 2017 Kementerian Kesihatan Malaysia (KKM) – Anugerah Juri and Annual Productivity & Innovation Conference and Exposition (APIC) 2017 and Kumpulan Terbaik Kategori QE/ 5S. This technology is simple, low-cost, time-saving and energy conserved. It has potential to replace current conventional method that is frequently used in the Pharmacy Department. The new steps are more rapid and no repetitive measurement is required. It is a safe method and potentially reduced frequency of patient visits to hospital for their balance medication.

HOW IS IT USED? (3 STEPS)



Weigh-labelled of powdered medicine using 45 degrees of oblique cutting head syringe



1. Use weighing machine to weigh the plastic bag



2. Use EZ Weigh to scoop and to get precised weight of powdered medicine.



3. Put the powdered medicine into plastic bag.

[Source: EZ Weigh TechBrief Report, MaHTAS, 2018]



EFFICACY & SAFETY



INCREASE
PRODUCTIVITY



EASY TO USE



TIME-SAVING



SAVE ENERGY



REPLACE SIX STEPS OF
CONVENTIONAL
METHOD



SAFE METHOD

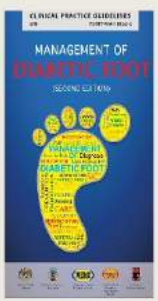
COST



LOW COST

CPG KEY

MESSAGES



▶ CPG Management of Diabetic Foot (Second Edition)



▶ CPG Management of Haemophilia

MANAGEMENT OF DIABETIC FOOT (SECOND EDITION)

1) **Diabetic foot** can be defined as infection, ulceration or destruction of tissues of the foot associated with neuropathy and/or peripheral arterial disease (PAD) of people with diabetes mellitus (DM).

2) Screening for diabetic peripheral neuropathy and PAD should be performed on all DM patients at diagnosis and repeated at least annually.

3) Patients with active diabetic foot problem should be referred urgently and seen within 24 hours in secondary/tertiary care.

4) University of Texas Classification is the preferred classification for diabetic foot.

5) Patient education should be an integral part in the management of diabetic foot; performed at least annually and more frequent in higher risk patients.

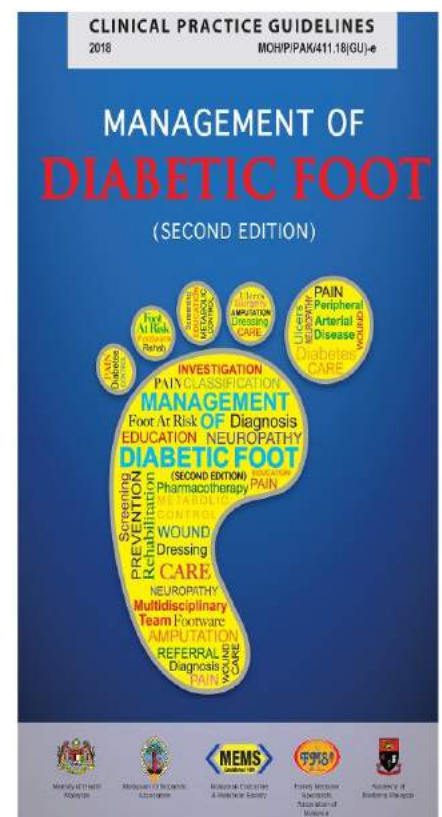
6) Prevention of Diabetic Foot Ulcer (DFU) consists of metabolic control, preventive footwear and preventive surgery.

7) Appropriate analgesia and antibiotics (as an adjunct) are important pharmacotherapy in DFU.

8) Appropriate wound dressing is done to maintain adequate moisture in addition to surgical debridement to remove dead tissue by trained healthcare providers in DFU.

9) Revascularisation should be offered in DM patients with PAD.

10) All patients with diabetic foot who has amputations should be referred for rehabilitation.



MANAGEMENT OF HAEMOPHILIA

CLINICAL PRACTICE GUIDELINES

2018 MOH/PAK/412.18(GU)-e

Management of Haemophilia



1) **Haemophilia** is a group of inherited blood disorders in which there is life-long defect in the clotting mechanism. The most common types are haemophilia A (factor VIII deficiency) & haemophilia B (factor IX deficiency). They are inherited as X-linked recessive traits; therefore, males are affected & females are carriers.

2) A positive family history of haemophilia is present in two-third of patients while another one-third may have spontaneous mutation. Cascade screening for haemophilia should be offered to at least first- & second-degree female relatives if the mother of persons with haemophilia (PWH) is a confirmed carrier.

3) Factor replacement therapy, non-pharmacological & adjunctive treatments are essential in preventing joint damage & other potential serious & life-threatening events in haemophilia.

4) The optimal approach to haemophilia treatment is using prophylactic therapy to prevent bleeds & chronic joint damage, hence reducing short- & long-term complications. Prophylaxis should be given to all persons with severe haemophilia even at a low dosage.

5) Acute bleed in haemophilia should be treated with factor replacement therapy as soon as possible, preferably within 2 hours.

6) Radiosynovectomy should be considered in haemophilic synovitis with recurrent bleeding in the target joint that is refractory to intensive treatment with clotting factor concentrates.

7) Screening for inhibitor should be done in all PWH exposed to factor replacement therapy.

8) Immune tolerance induction should be considered in all PWH with inhibitor.

9) Home therapy should be advocated to all PWH. Haemophilia Medication Therapy Adherence Clinic should be made available in all haemophilia treatment centres.

10) Routine dental examination with preventative care should be conducted regularly in PWH. It should be initiated at the time the baby teeth start to erupt.

LOCAL ACTIVITIES



CPG LAUNCHING



Management of Colorectal Carcinoma

Launching of CPG Management of Colorectal Carcinoma by YBhg. Datuk Dr. Noor Hisham Abdullah, Director-General Health of Malaysia at Hospital Selayang (27 June 2018)

Colorectal carcinoma (CRC) is the second most common cancer in Malaysia with a prevalence of 13.2% as reported in Malaysian National Cancer Registry Report 2007-2011. Management of patients with CRC consists of a comprehensive strategy of screening, diagnosis, staging, appropriate treatment and follow-up. Hence, this first national CPG on CRC is developed to assist healthcare providers in the management of CRC.

Management of Atopic Eczema

Launching of CPG Management of Atopic Eczema by YBhg. Dato' Dr. Hj. Azman Hj. Abu Bakar, Deputy Director General (DG) of Health (Medical) on behalf of DG of Health, at Hospital Kuala Lumpur (19 March 2019)

Atopic eczema (AE) is one of the most common skin disorders worldwide. It is a chronic pruritic inflammatory skin disorder mainly due to a defect in the skin barrier.

While not a life-threatening disease, AE imposes a financial burden on our health care system, and even more on the individuals including indirect costs, such as days lost from work/school.

AE can present with various clinical manifestations according to different age groups. This makes its diagnosis a challenge leading to misdiagnosis and mistreatment. Thus, the CPG on Management of Atopic Eczema emphasizes on the diagnosis of AE, its assessment and treatment pathways for different severity of the disease. A written eczema action plan is also included.



Management of Chronic Kidney Disease

Launching of CPG Management of Chronic Kidney Disease (Second Edition) by YB Dr. Lee Boon Chye, Deputy Minister of Health in conjunction with World Kidney Day (14 March 2019).

World Kidney Day aims to increase awareness of the importance of our kidneys to health and to reduce the impact of kidney disease and its associated problems worldwide. The theme for this year is “Kidney Health for Everyone Everywhere”.

The CPG was approved in 2018 and implemented through Quick Reference (QR), launching & Training of Core Trainers. The launching & Training of Core Trainers were conducted jointly by Malaysian Society of Nephrology, National Kidney Foundation & Ministry of Health Malaysia on 14-15 March 2019.



Management of Diabetic Foot (Second Edition)

Diabetic foot is defined as infection, ulceration or destruction of tissues of the foot associated with the underlying pathology of people with diabetes mellitus. Up to 50% of them are asymptomatic diabetic peripheral neuropathy and about 80% of non-traumatic lower limb amputations are preceded by a foot ulcer.

This evidence-based CPG is an updated version replacing the first edition of 2004. It is meant to address the main issues related to the aspects of care for diabetic foot especially the variation in practices in local setting. This CPG will help to identify diabetic patients at risk of foot complications and standardize the management in an evidence-based approach.

It is timely that this CPG is developed for those who are directly or indirectly involved in the management of diabetic foot. There are two algorithms on screening and treatment that summarizes the management of diabetic foot. Important messages and 15 recommendations are easily identified in their boxes. It is hoped that this CPG will be utilized by all relevant health professionals and improve the care of diabetic foot in this country.



Training of Trainers (TOT)

Training of Core Trainers (ToT) for CPG Management of Diabetes in Pregnancy

Training of Core Trainers (ToT) for CPG Management of Diabetes in Pregnancy at Universiti Putra Malaysia on 11-12 July 2018. It is one of the CPG implementation strategies.



The CPG Development Group delivers lectures and, facilitates case discussions and MCQ session during the training. Feedbacks from the participants (core trainers) are used to improve the training module. The participants consist of endocrinologists, O&G specialists, family medicine specialists and dietitians. They will conduct echo training at their respective states subsequently.



Training of Core Trainers on CPG Management of Asthma in Adults at IKN, Putrajaya

It includes lectures, case discussions and MCQ session facilitated by the CPG Development Group members. 78 participants consisting of physicians, respiratory physicians, emergency physicians and family medicine specialists from all over Malaysia attended the training. They will then conduct echo training at their respective institutions. This training is part of CPG implementation strategy as an effort to increase its utilization.

Training of Core Trainers for CPG Management of Colorectal Carcinoma at Institut Kanser Negara on 27-28 September 2018

The CPG Development Group delivers lectures and, facilitates case discussions and MCQ session during the training. Feedbacks from the participants (core trainers) are used to improve the training module. The participants consist of colorectal surgeons, gastroenterologists, oncologists & family medicine specialists. They are mandated to conduct echo training at their respective states subsequently.



Others

Applied Statistics for Economic Evaluation Workshop

From 28 to 29th June 2018, the Applied Statistics for Economic Evaluation Workshop was conducted in which Associate Prof Dr Zafar Ahmed, Medical Lecturer, Community Medicine & Public Health, Faculty of Medicine & Health Sciences, Universiti Malaysia Sarawak was invited and gave an introductory understanding of the fundamental statistical concepts in economic modeling. It was a mixture of lectures and practical exercises, where participants learned the relevant statistical concepts and their estimation using commonly used statistical software packages. There was also an introductory session to TreeAge, a software for creating and analyzing decision trees, tantamount to a much more complex economic evaluation exercises.



Manuscript Writing For Journal Publication Workshop (16 July 2018)

Prof Dr Low Wah Yun, head of Research Management Center from University of Malaya & editor-in-chief of Asia Pacific Journal of Public Health, gave a recap on the writing of an article, i.e. structured abstract, introduction, materials & methods, results, discussion and conclusion. Each unit of MaHTAS was then individually guided to improve its publications.

Critical appraisal workshop on observational study and economic evaluations

On 7 August 2018, a critical appraisal workshop on observational study and economic evaluations was conducted by Institute for Health Systems Research (IHSR) in Setia Alam.

Dr. Izzuna Mudla and Dr. Hanin Farhana were invited as lecturers and facilitators for this workshop. Critical appraisal sessions for both study designs were discussed with participants using relevant risk of bias tools and appraisal checklists.



Systematic Review on the Development & Implementation of Dental CPG (7-9 August 2018)

MaHTAS was invited to conduct a Systematic Review workshop to the Development Group members for the update of CPG Management of Chronic Periodontitis (2012), Severe Early Childhood Caries (2012) & Orthodontic Management of Developmentally Missing Incisors (2012). The training comprised of CPG work process, retrieval of evidence, critical appraisal, AGREE II and implementation.



An Introduction To Economic Evaluation For Clinicians

3-4 Sept 2018

A workshop on the introduction to economic evaluation for clinicians was conducted from 3 to 4 September 2018. This course aims to give exposure to the clinicians on the theories and application of health economic. Besides our own speakers from MaHTAS, we invited Associate Professor Asrul Shafie from Universiti Science Malaysia to conduct the workshop. We discussed various topics including costing methods, economic evaluation and patient related outcome. It is hoped that clinicians will understand more about the works of economic evaluation conducted in MaHTAS and collaborate closely with us for the production of quality reports.



Seminar on Evidence in Action

A few members of MaHTAS had the opportunity to meet and listen to Professor David Banta, the Father of HTA and other renowned speakers at Seminar on Evidence in Action, held on 1 October 2018, organized by Monash University Malaysia. The seminar provided an understanding of HTA with Hepatitis C used as an example. Dr Junainah Sabirin, Head of MaHTAS gave an overview of HTA in Malaysia at the seminar.



Economics in Healthcare (23/10/18)

For the first time, MaHTAS was invited to give a presentation on Economics in Healthcare to specialists from MOH Cardiology, Cardiothoracic Surgery, Paediatrics Cardiology and Cardiac Anaesthesiology.

Puan Ku Nurhasni successfully delivered the talk yesterday and received a lot of questions pertaining to this topic.

We introduced them to the importance of economic evaluations in healthcare decision making, PRO-ACT-IVE methods in resource allocation and WHO Best Buys intervention in tackling NCDs with regards to cardiovascular conditions.

Best regards to Perkhidmatan Jantung KKM!

Basic Health Economics & Decision Modelling for Economic Evaluation 15 – 19 October 2018

In October 2018, our reviewers attended a 2-day workshop on basic health economics followed by a 3-day workshop on decision modelling for economic evaluation held in Central Plaza Kuala Lumpur. Organized by Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, the workshop was conducted by two renowned health economists, namely Professor Dr. Nathorn Chaiyakunapruk and Associate Professor Dr. Asrul Akmal Shafie. Participants gained in-depth understanding of key areas and various approaches in health economics as well as strategies for translating knowledge into practice. They were also introduced to fundamental concepts in modelling techniques for economic evaluation, evidence synthesis, meta-analysis and critical appraisal of health economic models. Through hands-on practice, participants learned how to develop decision tree and Markov models. The workshops had indeed strengthened the capacities of our reviewers in health technology assessment, health economics and evidence-based medicine.



Workshop on Economic Evaluations

Health Economics team from MaHTAS was invited to conduct a workshop on economic evaluations in healthcare on 27 - 28 March 2019.

The workshop was coordinated by Centre of Health Economics Research, Institute of Health System Research (IHSR) in Setia Alam and was attended by health care professionals from various agencies and institutes, including from Sabah and Sarawak.

Participants were exposed to basic concepts of health economics and introductory session to economic modelling.



Health Technology Assessment Course

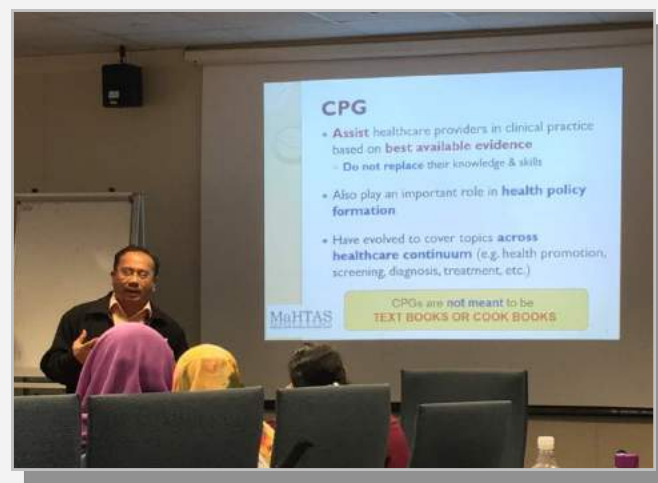
A two days course on Health Technology Assessment (HTA) for expert committee was conducted from 2 to 3 April 2019. The participants were mainly our expert committee and various state representatives.

In these 2 days, the participants were exposed to various topics including the HTA work process, formulating clinical questions and search strategy, various study design, critical appraisal, introduction to economic evaluation and evidence synthesis in HTA.



Systematic Review on Evidence-based Clinical Practice Guidelines Development & Implementation 2/2018 and 1/2019

These exercises, which were a regular fixture in MaHTAS training schedule, done twice annually, were carried out to provide related knowledge and skills in developing an evidence-based CPG. The second session for the year 2018 was carried out from 4th to 6th September 2018 which was mainly attended by the Development Group members of CPG Management of Tuberculosis (4th edition) and CPG Management of Gout (2nd edition), whereas the first session for the year 2019 was on 8th till 10th April 2019 and was filled with the Development Group members of CPG Management of Dementia (3rd edition) and CPG Management of Schizophrenia (2nd edition). It was conducted by the CPG unit, led by their esteemed Head Unit, Dr Mohd Aminuddin bin Mohd Yusof. Among lectures delivered were CPG work process, retrieval of evidence, critical appraisal of different study designs, analysis and synthesis of evidence, and also implementation strategies of the CPG. Apart from that, group work/presentation and hand-on sessions were conducted for better understanding of the participants on the subjects.



INTERNATIONAL ACTIVITIES



Visit from Head of Mission and WHO Representative

We were honoured to receive a visit from Head of Mission and WHO Representative to Malaysia, Brunei Darussalam and Singapore Dr Lo Ying-ru Jacqueline on 24th May 2019. Together with her were Dr Taketo Tanaka from WHO HQ Geneva who is currently assigned for short term at WHO Country Office, Malaysia and Miss Fiona Kee, a consultant at WHO Country Office Malaysia. We discussed on HTA activities in Malaysia and international collaborations to strengthen HTA further in this region.



7th International Public Health Conference

MaHTAS officers attended the 7th International Public Health Conference, which was held on 28 - 30th August 2018, with the theme - Industrial Revolution (IR) 4.0 & New Health Paradigm. Congratulations to Dr Roza Sarimin for winning one of the Best Poster (International) Award.

The fourth industrial revolution (IR 4.0) represents the movement towards smart industry and industrial transformation. In today's business IR 4.0 is driven by digital transformation in horizontal/vertical value chains and services offered. The required key technology such as Artificial Intelligence, Internet of Things, cloud system and cybersecurity inevitably affect changes in organizational business processes. IR 4.0 has all the potential to shift healthcare services to an unprecedented level. There is a need to unlock its benefits. This conference discussed the different facets to this theme among the health and non-health professionals including engineers, scientists, researchers and academics .



World Cancer Congress 2018

Malaysia is the host for World Cancer Congress 2018 which was successfully held on 1-4 October at Kuala Lumpur Convention Centre (KLCC).

In conjunction with this prestigious event, seven abstracts on technology reviews and economic evaluations submitted were accepted for e-poster session and these abstracts were presented by three delegates from MaHTAS. All the abstracts were published as supplement in the latest volume of Journal of Global Oncology.

The congress addressed various important aspects of cancer care through fruitful plenaries and panel discussions. It is also a platform to enhance networking and create collaborations at regional and international level.



HIRA Global UHC Campus International Symposium

On 24-26 October 2018, Dr. Hanin Farhana from MaHTAS participated in HIRA Global UHC Campus International Symposium on "How to price new drugs and new health technologies?" in Wonju, South Korea. This symposium discussed various strategies in developing sustainable healthcare systems in a financially challenging conditions.

HIRA as the host and coordinator of the symposium shared their experience in starting the national health financing programme in Korea. Four other Malaysian MOH delegates were from National Health Financing Unit and Pharmaceutical Services Programme.



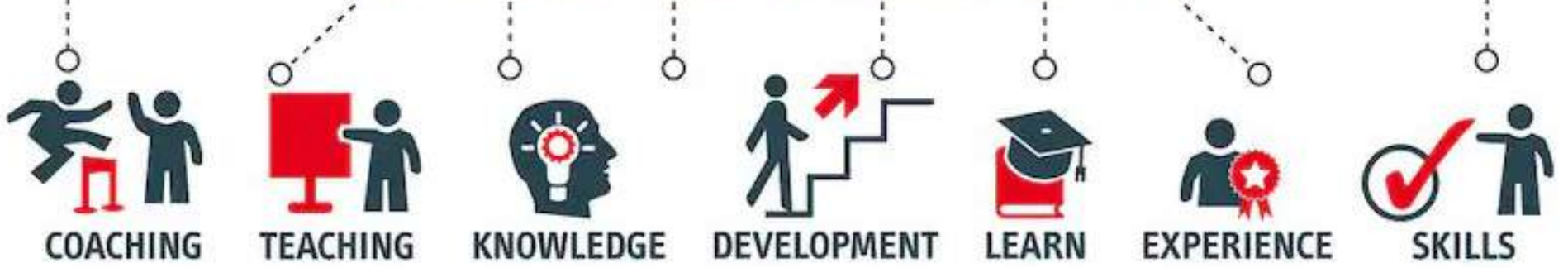
HTAsialink Annual conference

As cherry blossom season was coming to an end in Korea, the flowers bloomed for one last time to welcome delegates of 34 agencies from 17 HTAsialink member countries to Seoul for the 8th HTAsialink Annual Conference- Tuesday, April 23 through Saturday, April 27 at Hoam Faculty House of Seoul National University. The theme of this year conference was Priority Setting for Universal Health Coverage. This annual conference aimed to outline the global HTA landscape and share experiences of success and trial-and-errors while conducting HTA in each country's own settings in order to discuss the imperatives to achieve UHC as an ultimate goal. MaHTAS was represented by seven officers. The conference kicked off with pre-conference workshops featuring distinguished speakers from the notable HTA agencies from all around the world, one of which, our very own Dr Junainah Sabirin, Head of MaHTAS . She spoke on HTA For Non-Drug Medical Technologies: MaHTAS Experience.

Eighty oral presentations and the poster exhibition in the field of economic evaluation, health system research and others from many researchers of HTAsialink member agencies became the fruitful ground to envision the future of HTA together as well as to enhance friendship for further collaboration. MaHTAS officers presented five health system research papers and one economic evaluation paper in oral competition. They also participated in poster exhibition by contributing three health system research abstracts.



TRAINING



INTERNAL TRAINING SESSIONS

RCT & Critical Appraisal

20th July 2019

Dr Ainol Haniza Kherul Anuwar | Dr Erni Zurina Romli

Briefing on Travel Claims

10th October 2018

Dr Syaqirah Akmal

Management of Emotions in Workplace

12 Oct 2018

YM Tengku Teh Mariah YM Tengku Jewa

Briefing on myPortfolio Preparation

25th October 2018

Pn. Maharita Ab Rahman | Pn Balqis Abd Ghani

Recap in Format & Common Mistakes in Report Writing

18th January 2019

Dr Junainah Sabirin

Formulating Questions & Search Strategy

28th January 2019

En Lee Sit Wai

Introduction to Endnote

8th March 2018

Dr Chong Chin Eu

Mendeley & Referencing

5th April 2018

Dr Syaqirah Akmal

Introduction to TreeAge

9th April 2019

Ms Belinda



COLLABORATION DELIVER **INNOVATE** **INSPIRE** **VISION** MOTIVATION PERFORMANCE

ACHIEVEMENT

SERVICE INTEGRITY **SUCCESS** SKILL **TEAMWORK** DUTY **STRENGTH** ACCOUNTABLE **COURAGE** MENTOR **EXCELLENCE** RESPECT

Anugerah Perkhidmatan Cemerlang 2018

En Lee Sit Wai

Dr Nur Farhana Mohamad

En Tholib Ibrahim



Occupational Safety and Health Week E1 Block (October 29 - November 1, 2018)

Various activities such as health checks, dental examinations, chairobic / zumba exercises and blood donation drive were conducted throughout this particular week. Health promotion activities through booths from dentistry, pharmacy, nutrition, and organ donation have been welcomed by residents of the E1 block. Innovation competitions, healthy juices, photomathon, prosperous workplaces, talks related to CPR & the use of AEDs, sexual harassment in the workplace and safety at work were also well attended.



Pertandingan Tempat Kerja Sejahtera Program Perubatan

Tempat Pertama

Pertandingan Inovasi

(Zon Bahagian Perkembangan Perubatan)

Tempat ketiga:

PLANT YOUR MOTIVATION

Cik Gan Yan Nee

Dr Asliza Ayub

Matron Wong Wai Chee

Dr Izzuna Ghazali

Pertandingan Photomathon

Tempat Pertama:



myMaHTAS v2.0 icon competition

MaHTAS conducted an icon designing competition for the new version of myMaHTAS app and the winners were announced during our last section meeting. Looks like Dr. Ayuni conquered the competition with four winnings!



RESEARCH ACTIVITY

Quick Reference (QR) Utilisation Survey on Early Management of Head Injury in Adults was conducted in September 2018 involving 285 respondents from 41 selected healthcare facilities nationwide (81.4% response rate). Respondents' characteristic was illustrated as in Table 1. Approximately 70.9% of respondents were aware and used the QR with varying reason of utilisation (Figure 1).



Table 1: Description of respondents' demography

Demographic variables	No. of respondents (n=285)	Percentage (%)
Sex		
Female	48	16.8
Male	237	83.2
Designation		
Medical Officer	254	89.1
Specialist	53	18.9
Facility		
Health Clinic	55	19.3
Hospital	230	80.7
Age [years(mean,range)]	31.8 (26-56)	

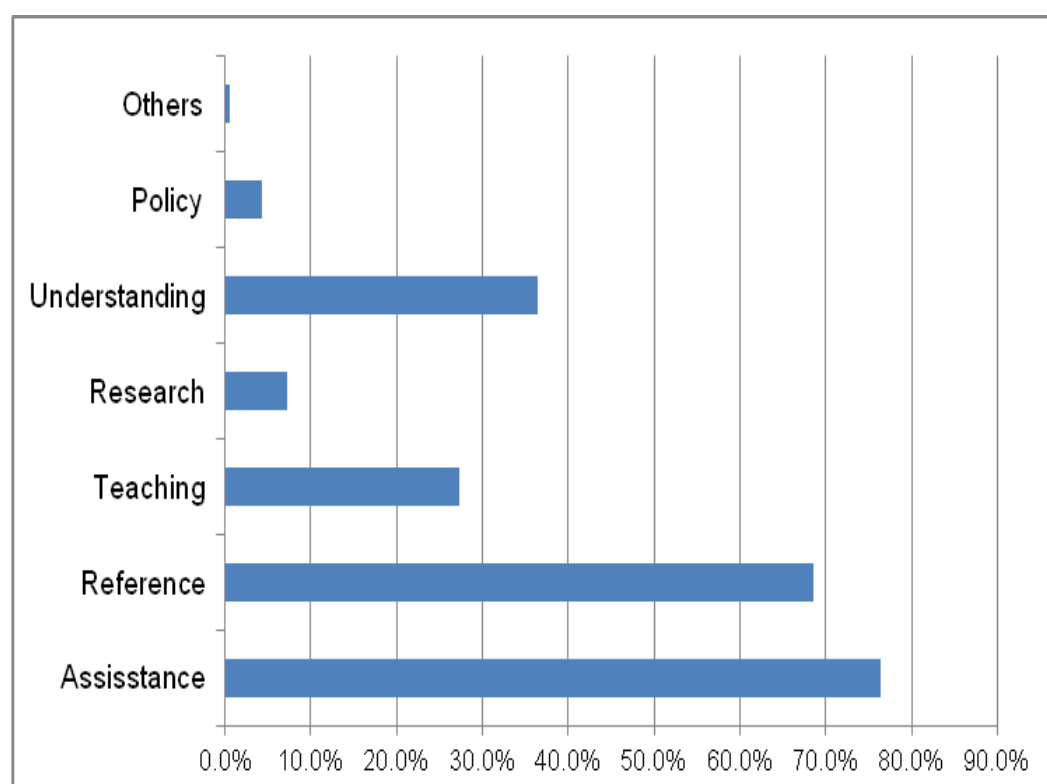


Figure 1: Reasons of Utilization among respondents

TEAM TURNOVER

WELCOME ABOARD

BON VOYAGE

EDITORIAL BOARD



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‘Knowing is not enough; we must apply. Willing is not enough; we must do.’

Johann Wolfgang von Goethe