

Anatomical Study of Scaphoid Waist by Ridge –Head Scaphoid Angle

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Background: The scaphoid is a bean-shaped bone. Its function is as a unit to provide a bony superstructure for the hand. Scaphoid is also involved in movement of the wrist. The scaphoid serves as a link between the two rows of carpal bones and it's have continuous motion in all direction.

Objective: The purpose of this study was to investigate orthogonal scaphoid waist by ridge-hand scaphoid angle.

Material and Methods: We retrospective analyze a radiographic wrist AP and ulna deviation of 99 patients to measured orthogonal scaphoid waist line by author and radiologist, and investigate relationship between orthogonal scaphoid waist and ulna deviation angle

Results: Mean of anatomical scaphoid waist from ridge-head angle = 2.529 and SD = 1.26, It good in inter-observer and intra-observer reliability by Intraclass correlation (ICC) and Bland-Altman plot, respectively. Angle of ulna deviation more than 20 degree was found orthogonal scaphoid waist not change in mean and SD.

Conclusion: Mean and SD of orthogonal scaphoid waist = 2.529, 1.260 respectively.

Keywords: Anatomical of Scaphoid Waist, Ridge – Head Scaphoid Angle

Comparison of Pain Reduction by Using Cold Normal Saline after Undergoing Tonsillectomy in Bhumibol Adulyadej Hospital: A Randomized Controlled Trial

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Objective: The aim of this study, that cold normal saline irrigate was superior to room temperature normal saline irrigation to reduce postoperative pain in patient after undergoing tonsillectomy.

Material and methods: In this randomized double blind controlled trial, 40 patients undergoing tonsillectomy in Bhumibol Adulyadej Hospital was randomized into 2 groups, 20 patients were assigned to treatment group who received cold normal saline irrigate, while the remaining 20 patients were assigned to control group who received room-temperature normal saline irrigate. By using Postoperative pain questionnaires (Visual analog scale) after undergoing tonsillectomy at 4,8,12, 24 hours & after treatment in 1, 2, 3 day and Additional pain control medication, length of hospital stay were recorded

Results: Postoperative pain in 4, 8, 16, 24 hours and in first day after tonsillectomy of intervention group who received cold normal saline irrigate were significant less pain than controlled group ($p < 0.05$). However, according to the postoperative pain in 2, 3 days, number of patient who need additional pain control medication, postoperative bleeding and the length of hospitalization between two groups are not appreciably different ($P\text{-value} > 0.05$).

Conclusion: Postoperative cold normal saline irrigate can decrease postoperative throat pain in 24 hours and in first day after tonsillectomy. However, there is no effect in number of patient who need additional pain control medication and the length of hospitalization.

Keywords: tonsillectomy, pain, normal saline irrigation

Prevalence and Adverse Pregnancy Outcomes of Gestational Diabetes Detected by Two Methods of Screening

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Objective: To compare the prevalence and pregnancy outcomes in women diagnosed with gestational diabetic mellitus (GDM) by Carpenter-Coustan(CC) criteria (old criteria) and new gestational diabetes by the International Association of the Diabetes and Pregnancy Study Groups (IADPSG)criteria.

Material and Methods: A retrospective study was carried out by reviewing medical record of 900 pregnant women from January 2012 to June 2013 using criteria and in 900 pregnant women from January 2015 to December 2015 using IADPSG criteria between 24-28 weeks gestation. Both groups were similar in therapy and follow up protocol.

Results: IADPSG criteria increased the prevalence of gestational diabetic mellitus diagnosed to 15.3% compared with 11.3% by CC criteria. Adopting IADPSG criteria was associated with higher rate of cesarean section (P 0.01), reduce birth weight (P 0.027) and increase asymptomatic neonatal hypoglycemia. No significant pregnancy outcomes between diabetes pregnant in both groups.

Conclusions: The adaptations of the IDAPSG criteria for diagnosis GDM would increase but not associated with improve pregnancy outcomes.

Keywords: gestational diabetes mellitus, 50-grams glucose challenge test, 75-gram glucose tolerance test

The Prevalence of Abnormal Cerebro-Placental Doppler Indices Ratio (CPR) in Hypertensive Disorders of Pregnancy

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Objective: 1. to determine the prevalence of abnormal Cerebro-Placental Doppler Indices Ratio (CPR) in hypertensive disorders of pregnancy.

2. To analyze the association between abnormal CPR and perinatal outcomes.

Material and Method: Across sectional study was conducted from July 2016 to July 2017 at Bhumibol Adulyadej Hospital. 148 singleton pregnancies with hypertensive disorders during 28 to 40 weeks of gestation were enrolled for study. Doppler ultrasound analysis of the fetal umbilical and middle cerebral arteries was performed and the CPR was calculated and interpreted. Patient was followed up till delivery and perinatal outcomes were analyzed.

Results: 35.62% (52) of the population in this study showed abnormal CPR. Pregnancies with abnormal CPR had a significantly increase risk of SGA (odds ratio, 3.15; 95% confidence interval, 1.24 to 7.98; $p=0.013$) and NICU admission (odds ratio, 2.19; 95% confidence interval, 1.07 to 4.47; $p=0.030$). No significant difference in preterm delivery, non-reassuring fetal heart rate pattern, low Apgar score, hypoglycemia, hypothermia and hyperbilirubinemia.

Conclusion: The prevalence of abnormal CPR in hypertensive disorders of pregnancy was 35.62%. Compared to pregnancies with normal CPR, pregnancies with abnormal CPR was significantly associated with SGA and NICU admission. CPR parameters should be interpreted with caution for assessing the fetal status and prediction of pregnancy outcomes in hypertensive disorders of pregnancy.

Keywords: CPR, perinatal outcomes, hypertensive disorders of pregnancy

**Accuracy of New Formulation Using Combined 3-D Cross Sectional Area of the
Umbilical Cord with 2-D Sonographic Femur Length and
Biparietal Diameter for Birth Weight Prediction**

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Objective: to generate a new equation for estimation of fetal weight using 3-D cross sectional area of the umbilical cord (UCA) combined with 2-D biparietal diameter (BPD) and femur length (FL), and compares the accuracy of birth weight prediction using new equation with Hadlock's formula.

Material and Method: A prospective, cross-sectional study was conducted. 216 low-risk pregnancies from 37-42 weeks of gestation were sonographic examined within 7 days before delivery. The conventional fetal biometry was collected by 2-D US, and UCA was performed using 3-D US. Data from first 107 pregnancies were used to generate a new equation. The birth weight estimation of the latter 109 cases was then calculated using the new equation. Pearson's correlation, Paired t-test and intraclass correlation coefficient (ICC) were used for data analysis.

Results: Birth weight estimation equation was generated; birth weight (grams) = $-2414.2 + 23.12\text{BPD} + 22.97\text{FL} + 1009.03\text{UCA}$; and validation of this equation was done. UCA-BPD-FL equation and actual birth weight were correlated ($r = 0.807$). The mean percentage error (PE) was 0.025 with absolute percentage error (APE) was 8.05%.

Conclusion: The new equation using UCA, BPD, and FL shows a good correlation with actual birth weight, and is more accurate than the Hadlock's formula.

Keywords: cross-sectional area of the umbilical cord, 2-D ultrasonography biometry, estimated fetal weight

Comparison of Vaginal pH with Cervical Length in the Second Trimester for Prediction Preterm Birth

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Objective: To find the diagnostic value of combined vaginal pH and cervical length measurement in the second trimester of pregnancy as a preterm birth predictor.

Materials and methods: A descriptive, diagnostic test of 311 singleton pregnant women between 18 and 24 weeks of gestation were measured vaginal pH and cervical length. The cut-off values for vaginal pH and cervical length were defined as 5 and <3 cm. pH-indicator strips were used for vaginal pH and transvaginal ultrasound was used for cervical length.

Results: The incidence of preterm birth was 37 (11.9%). Alkaline vaginal pH was found 122 women (39.23%), shorted cervical length was found 61 (19.6%) and both was found 45 (14.5%). Low positive predictive value of vaginal pH (9.84) and short cervical length (14.75) was not significantly in predicting PTL. But high specificity (81.08%) and NPV (88.2) of short cervical length could use to exclude PTL and combine with both cervical length and vaginal pH has better result than cervical length (86.86), (89.37) respectively. Alkaline vaginal pH significantly decreases the odds of preterm labor (OR=0.72). But short cervical length and combine both increases the odds (OR=1.37), (OR=2.21).

Conclusion: Low risk population, cervical length measurements more than 3 cm at 18-24 weeks gestation, preterm birth is low. Vaginal pH alone cannot be a good predictor for preterm birth. When combined these two parameters, negative result can be good sign to preclude spontaneous preterm birth.

Keywords: Bacterial vaginosis, cervical length measurement, preterm birth, second trimester

Rubella Immunity Seroprevalence in Pregnancy at Bhumibol Adulyadej Hospital

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Objective: To determine the prevalence of rubella antibodies among pregnant women visiting antenatal clinic at BhumibolAdulyadej Hospital.

Design: Prospective cross-sectional study

Materials and Methods: Between March 2016 and February 2017, 355 pregnant women visited antenatal clinic were enrolled. The serum was collected at the first antenatal visit. Ant rubella virus antibodies were assayed using the electrochemiluminescence immunoassay

Results: 85.91 percent of women were classified as immune to rubella virus. Women at age below 19 years had higher prevalence of immunity (91.67%) and more than 80% in older age group. Primigravida had immunity 88.89%. Education at primary school or under had less immunity than higher education. Income below 20,000 baht per month had lower immunity. Women with history of vaccination had immunity 85.19%.

Conclusion: The seroprevalence of rubella immunity in 355 pregnant women was 85.91 %. There was lower rubella immunity in lower education and none Thai nationality group. History of vaccination was not guarantee to be immune to rubella.

Keywords: *Rubella IgG antibody, Rubella titer, pregnancy*

**Knowledge and Skills of Using Automate External Defibrillation Mode in
Defibrillator before and After Basic Life Support Training Program in
Emergency Room Nurses of Bhumibol Adulyadej Hospital**

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Background: If an emergency situation occurring, the person who first witnessed the incident should basically help the patient's life correctly. Early defibrillation as soon as possible, is improving survival rate. Nurse can use automate external defibrillation mode in defibrillator to save lives. Therefore, it is committed to the develop knowledge and skills of using automate external defibrillation mode in defibrillator by organizing the training of basic life support for emergency room nurses, because they are often encounters emergency situations.

Objective: To assess knowledge and skill of using automate external defibrillation mode in defibrillator in emergency room nurses before and after the training, and determine factors associated with ability of basic life supporting.

Material and method: The study evaluated data and related factors before and after the training of basic life support (2015 AHA Guidelines for CPR and ECC) of 92 emergency room nurses on 11-15 September 2017, and conducted the knowledge assessment in the same day.

Results: The score of multiple-choice knowledge before and after training has Mean \pm SD equal to 7.15 ± 1.24 points and 9.2 ± 0.788 points marks respectively, which were significantly different P-value less than 0.001. The score of multiple-choice and practice after training compare in each group experience no significant difference P-value 0.316 and 0.214 marks respectively. The score of multiple-choice and practice after training compare in frequency of CPR in 1 month, no significant difference P-value 0.895 and 0.810 marks respectively. The score of multiple-choice and practice after training compare in frequency of using AED in 1 month, no significant difference P-value 0.055 and 0.107 marks respectively. Rescue workers have score of multiple-choice before training 8.25 ± 0.70 points, nursing have score 7.05 ± 1.23 points. Rescue workers scored significantly higher, P-value 0.008 however, multiple choice and practice score after training no significant difference P-value 0.107 and 0.297 marks respectively.

Conclusion: The result of assessment showed that scores of theoretical knowledge and skill of basic life support have increased clearly. This basic life-support training improves the capacity of emergency room nurses. Rescue workers who often have the chance to perform resuscitation and use AED, have basic knowledge before training better than nursing. In

addition, learning and developing basic life support skills not related to work experience and frequency of resuscitation. Everybody can improve their skills after training.

Keywords: knowledge and skill of using automate external defibrillation mode in defibrillator

**Exertional Heat Illness in Thai Air Force in Bhumibol Adulyadej Hospital,
Directorate of Medical Services, Royal Thai Air Force.**

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Background: Exertional heat illness (EHI) is condition that causes minor illness and sudden death. It has multifactorial in nature. If the rate of its occurrence and risk factors were recognized, it can prevent and reduce morbidity and mortality. Furthermore, also assist the Air Force in recruiting and training military personnel and providing adequate surveillance.

Objective: To study the incidence of EHI and risk factors in military and to determine the relationship between risk factors and duration of hospital stay.

Material and methods: This research was a retrospective observational descriptive study. 148 from 1,500 airmen had EHI and stayed at Bhumibol Adulyadej Hospital, from 1 January 2012 to 31 December 2016. Data were analyzed to determine the incidence and risk factors for EHI. And the airmen were divided into two groups according to hospital stay then compare each factor of two groups using SPSS version 22 in data analysis.

Results: A total of 148 EHI were from 1,500 airmen of The Royal Thai Air Force. Most common EHI was heat cramp (45.3%), heat exhaustion (37.8%) and heat stroke (10.1%) respectively. The incidence of EHI was 9.8% and average time of hospital stay was 15 hours 1 minute 30 seconds. Risks associated with period of occurred EHI was 4.01 - 5.00 p.m. (11.5%), Wednesday (20.3%), first and second week of month (20.3%) and May (49.3%).

Risk factors received during military training for EHI were history of illness during training (22.3%), history of drug use or substance abuse (13.5%) and others. By comparing individual factors with duration of hospital stay, it was found that airmen less weight ($P=0.26$), EHI in Thursday ($P=0.01$), EHI in first half of month ($P=0.04$), EHI in first half of military training ($P=0.01$) and drug use ($P<0.001$) stayed hospital for more than 24 hours.

Conclusion: EHI is relatively high. This study concluded that the general characteristics affect EHI. The period of occurred EHI, result in the inability to adapt to the warming state of body (Lack of heat acclimatization). The military training for a long time, such as the evening after training all day or several days, training in hot weather as well as history of medicine during training is all risk factors for EHI. Accordingly, if we recognize them, maybe prevent and reduce EHI incidence as well as reduce the hospital stay. As a result, military training is secure and effective.

Keywords: EHI, exertional heat illness, heat stroke, heat exhaustion, heat cramp, heat syncope, turn of military training, heat acclimatization

**Comparison Rate of Hospitalization between Noninvasive Ventilator and Standard
Medical Therapy in Acute Asthmatic Attack in
Emergency Department, Bhumibol Adulyadej hospital, RTAF**

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Background: Noninvasive ventilation (NIV) has a greater role in the management of patients with acute respiratory failure recently, especially in management of exacerbation of chronic obstructive airway disease which has pathophysiology similar to asthma. However, its efficacy in treating patient with acute asthmatic attack is not well defined.

Objective: The purpose of this study was to compare the rate of hospitalization between applying NIV to standard medical therapy and standard medical therapy alone in the patients with acute asthmatic attack.

Material and methods: The patients were randomized to receive standard medical therapy combines with NIV or standard medical therapy alone. The primary outcome was the rate of hospitalization. The secondary outcomes were the rate of intubation, duration of hospitalization, doses of bronchodilator and the percentage of change of the peak flow. The inspiratory positive airway pressure (IPAP) and expiratory positive airway pressure (EPAP) started at 10 cmH₂O and 5 cmH₂O. The IPAP was titrated by 2 cmH₂O each time (max = 20 cmH₂O)

Results: 61 patients who presented with acute asthmatic attack were divided in 2 groups. 30 patients were randomly assigned to NIV plus standard medical therapy and 31 patients to standard medical therapy alone. The intubation rate (control = 0%, NIV = 0% p=NA) was not significantly different between two groups). NIV can decreased hospitalization rate (control = 48.4%, NIV = 30% p=0.142) but not significantly. There was significant improvement in pulmonary function in the group using NIV than another group. The duration of hospitalization (control = 46.8 ± 17.2 hours, NIV = 37.9 ± 12.4 hours p=0.024) and doses of bronchodilator (control = 31.2 ± 13.6 times, NIV = 25.1 ± 8.8 times p=0.044) were significantly decrease in the NIV group.

Conclusion: The applying of NIV to standard medical therapy can decrease rate of hospitalization but not significantly. NIV significantly shortened the duration of hospitalization, decreased doses of bronchodilator and improved pulmonary function. These can be the solution for overcrowding problem in hospital.

Keywords: acute asthmatic attack, noninvasive ventilation, NIV, bronchodilator

QTc Interval Prolongation in DM Type 2 Patient during Severe Hypoglycemia and Baseline

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Background: Type 2 DM patient has increased risk of severe hypoglycemia. Severe hypoglycemia is associated with cardiac arrhythmia and sudden cardiac arrest as evidenced by corrected QT interval prolongation and increase mortality in T2DM.

Objective: Evaluated an association between prolonged QTc interval and severe hypoglycemia episode and evaluated the change in the QTc interval from baseline.

Material and Method: Between January 2017 and November 2017, 213 patients with T2DM, who visited the emergency department, Bhumibol Adulyadej hospital due to severe hypoglycemia by retrospective cohort study. The QTc interval was analyzed during SH and baseline before SH. QTc measurement ≥ 450 ms. in men and ≥ 460 ms. in women were abnormally prolonged QTc.

Results: The mean age was 68.2 ± 13.9 years and the mean diabetes duration was 14.6 ± 5.3 years. The mean QTc interval during SH and baseline were 437.3 ± 22.5 ms. (441.5 ± 24.5 ms. in men and 435 ± 21.1 ms in women) and 425.3 ± 18.9 ms. (425.2 ± 18.9 in men and 425.4 ± 19 ms in women). There was significant increase QTc interval when episode of SH, p -value < 0.001 . There were 31 patients (14.6%) had a prolonged QTc interval during SH (20.5% men and 11.4 women). The mean prolonged QTc interval during SH was 475.32 ± 19.5 ms (Min 450, Max 521 ms.), 478.87 ± 14.4 ms. in men and 472.2 ± 23.2 ms. in women. The prolonged QTc interval at baseline was associated with prolonged QTc interval during SH (OR = 47.0, 95% CI 9.91-223.2, p -value < 0.001) after adjusting for multiple confounders.

Conclusion: Severe hypoglycemia was associated with prolonged QTc interval in T2DM. The QTc interval during SH was increase from the baseline. The prolonged QTc interval at baseline was associated with prolonged QTc interval during SH

Keywords: Severe hypoglycemia, type 2 Diabetes mellitus, QTc interval, prolonged QTc interval

Factors Affecting Moderate to Severe Injuries of Bicycle Accidents Presenting to Bhumibol Adulyadej Hospital

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Background: Cycling has recently become more popular hence an increase in bicycle accidents where injuries range from mild to severe. We therefore conducted this research to identify factors affecting moderate to severe injuries of bicycle accidents to plan for injury prevention.

Objective: 1. to investigate factors affecting moderate to severe injuries in bicycle accidents presenting to Bhumibol Adulyadej Hospital

2. To study the baseline characteristics of bicycle accident victims including gender, age, mechanism of injury, the part of the body injured and number of the part of the body injured.

Material and methods: A chart review of bicycle accidents presenting to Bhumibol Adulyadej Hospital between January 1, 2016 to August 31, 2017 was conducted. Injury severity of individual was graded by Injury Severity Score (ISS). Then divided into 2 groups: mild injury group (ISS 1-3) and moderate to severe injury group (ISS 4-75). Factors affecting moderate to severe injury were analyzed by using the Chi-square, OR (Odd ratio) and 95% CI for the OR.

Results: There were 317 accident victims. The number of moderate to severe injuries was 128 (40.4%) patients whereas 189 (59.6%) had mild injuries. Both groups were mostly male, age group of 41-64 years, most injury mechanism was falls, had one part of the body injured, most time of injury was daytime and most common injury was to the upper extremities, second common was lower extremities. Different factors between two groups were the mean age and management. The mean age of the moderate to severe injuries group was 41.25 ± 25.84 years old, the mild injury group was 34.93 ± 23.78 years old. Management of moderate to severe injury was observation or hospitalization whereas mild injury was treatment as OPD cases. Factors affecting moderate to severe injuries were age group 65 years and over (OR 2.34, 95% CI 1.16-4.71, p value 0.017), neck injury (OR: 1.5, 95% CI 1.03-2.18, p-value=0.031) and upper extremities injury (OR 9.5, 95% CI 1.06-85.06, p-value=0.017).

Conclusions: Elderly injured have risk of developing serious complications and conditions may be more serious than they appear. Maintain a high index of suspicion for serious injury to the elderly even in low energy impact injuries. Neck trauma, if suspected, immediate restriction of spinal motion is advised. Extremity injuries such as fractures or dislocations are resulting in some immediate disability, maybe reduced by the use of protective equipment.

Keywords: factors affecting, moderate to severe Injuries, bicycle accidents

Incidence of EDAC Score <16 with Electrocardiogram No Ischemic Pattern and High Sensitivity Troponin T at 0 and 1 Hour Result Negative

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Background: Acute chest pain is the one of common chief complaint in emergency department(ED). The cause of chest pain is outside the variety. Acute coronary syndrome is the fatal disease. The diagnosis should not be wrong, even if the symptom is not clear.

Incidence of EDAC score <16 with electrocardiogram no ischemic pattern and high sensitivity Troponin T at 0 and 1 hour result negative

Objectives:

1.To compare EDAC score(EDACS) less than 16 in patients with acute chest pain, either electrocardiogram was not shown ischemic pattern nor cardiac troponin were negative in 0 and 1 hour.

2.To study the incidence of cardiovascular complications in the patients with EDAC score less than 16, electrocardiogram was not shown ischemic pattern nor cardiac troponin were negative in 0 and 1 hour at next 30 days after discharge from emergency department

3. To study sensitivity, specificity, positive predictive value, negative predictive value and accuracy of EDAC score

Material and method: This pprospective descriptive study including patients came to ED of Bhumibol Adulyadej hospital with acute chest pain as the presenting symptom, during 1 August 2017 to 30 October 2017

Results: 165patients were included; average aged 54 ± 21 years, 52% female, 48% male. Incidence of EDAC score less than 16 in patients with acute chest pain, either electrocardiogram was not shown ischemic pattern nor cardiac troponin were negative in 0 and 1 hour is 63.63%. Incidence of cardiovascular complications in the patients with EDAC score less than 16, electrocardiogram was not shown ischemic pattern nor cardiac troponin were negative in 0 and 1 hour at next 30 daysafter discharge is 0%, The EDACS have sensitivity 72.7%, specificity 72.7%, positive predictive value 29.1%, negative predictive value 94.5% and accuracy 72.7%

Conclusion: EDACS < 16is safety fordischarge patient who had chest pain correlate with result from cardiac enzyme can reduce the waiting time and crowding in the emergency room.

Keywords: incidence, EDAC Score <16, electrocardiogram, ischemic pattern, high sensitivity Troponin T

Comparison of Blood Lactate Levels in Patient with and without Tourniquet in BhumibolAdulyadej hospital

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Background: Nowadays in the process of blood collection in Thailand, blood lactate could be measured from venous blood sampling without using a tourniquet. Though, blood lactate drawn without the use of the tourniquet is often impractically to obtain due to both resources and time constrains. A few studies emphasized that tourniquet using appears to have no impact on measured lactate levels; however, there was currently limited data as well as limited numbers of samples.

Objective: This study aimed to compare blood lactate level with and without tourniquet using during venous blood drawing

Material and methods: A Prospective cohort study was carried out on emergency department patients whose clinical presentation led a physician to order a lactate level. After the patients were selected by inclusion and exclusion criteria of this study and informed consent was written, there were two type of blood specimen that was collected with and without tourniquet using for each patient and was sent to the laboratory together. The pair of blood lactate results were recorded and analyzed by SPSS program.

Results: 101 patients were consented and enrolled. The mean age was 69 and there mainly had two or more in qSOFA score (63 %). The mean level of clinical blood lactate of patient with and without tourniquet use during venous drawing was 3.40 mmol./L and 3.38 mmol./L. There was no difference between paired lactate values ($P>0.05$).

Conclusion: Our results suggest that venous blood drawing regarding tourniquet using or not have no impact on blood lactate level. Therefore, the common practice of blood lactate drawn in Thailand should be reconsidered in order reduce the time and saving the cost of these monitoring.

Keyword: Blood lactate level, Tourniquet use, and Thai patient

Factors Related with Length of Stay More than 8 Hours at The Emergency Department of Bhumibol Adulyadej Hospital

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Background: Emergency department plays an important role in patient care. Time is very crucial in the ER. But in today setting, the department is faced with patient overcrowding which leads to other problems, such as patient congestion and decreased working efficiency, which can ultimately result in mistreatment. Since timing is very important, to study the factors that increase the time patients spend in ER can lead to better management and improve the quality of health services.

Aim: To study factors cause the non-traumatic patients to spend more than 8 hours in the emergency room of Bhumibol Adulyadej Hospital.

Material and methods: Patients will be classified into 2 groups of 500 each. One group consists of patients who had spent more than 8 hours, and another, equal to or less than 8 hours in the ER. The data will be collected via medical record and statistical analysis will be performed by logistic regression

Results: Factors that cause non-traumatic patient to spend time more than 8 hours in the ER are: 1) Imaging study (OR 21.612 (95% CI 9.731, 47.990), 2) Arrival time at 16.00-24.00 shifts (OR 2.831 (95% CI 1.670, 4.798), and 3) Specialist consultation (OR 21.699 (95% CI 7.300, 64.501)

Conclusion: Time spent for imaging study, arrival at evening shift (16.00-24.00), and specialist consultation are the leading causes that make the patients spent more than 8 hours in the ER at our institute. Future study should be done to address the specific issues in each factor in order to improve the healthcare system in the ER.

Keywords: length of stay, overcrowding, emergency room

Metabolic Disturbances in the First Seizure with Fever:

Study of Children in Thai Hospital

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Background: Seizure with fever is common neurological manifestation in children. The most common cause is febrile seizure. In almost all cases, clinical practice includes laboratory investigation. In spite of multiple studies, no evidence suggests routine blood studies improve pediatric diagnosis.

Objective: Determine association between metabolic disturbances and first seizure with fever in children.

Material and methods: Retrospective descriptive study consisting of review of children admitted with first seizure with fever, 3 months to 6 years, between January 1, 2012, and December 31, 2016. Demographic and clinical data, etiology of fever, characteristic of seizure, metabolic laboratory investigations and cerebrospinal fluid profiles were collected. Statistical significance was set at $p < 0.05$.

Results: The study included 319 children, median age 1.3 years (range 0.17 to 5.83 years). Respiratory tract infection (58%) was the most common etiology of fever. Abnormal laboratory results included anemia for age (25.1%), hyponatremia(24.7%), hypocalcaemia(2.3%) and metabolic acidosis (88.1%). Complex febrile seizure was found in 53 cases (16.7%). Comparing simple febrile seizure with complex febrile seizure, statistical significance between the two groups was found only with respect to delayed development and family history of febrile seizure or epilepsy in first degree relatives. Age, sex, duration of seizure, and metabolic laboratory test results were not significantly different between these two groups.

Conclusion: The level of metabolic disturbance was not significant associated with the febrile seizure. As a result of this study, laboratory investigations are no longer recommended for all patients, except in the presence of clinically suspicious factors.

Keywords: metabolic disturbances, first seizure, fever, children, Thai hospital

Clinical Characteristics of Anaphylaxis in Pediatric Patients at a Tertiary-Care Hospital

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Background: Anaphylaxis is an important allergic reaction because it may cause life-threatening condition. The previous clinical studies in Thailand did not categorize the severity of anaphylaxis. Besides the study in clinical characteristics, severity of anaphylaxis was graded into mild, moderate and severe in this study. The benefit of grading was to elucidate the factors that may influence severity of anaphylaxis, proper management and prevention.

Objectives: To investigate the incidence, clinical characteristics and anaphylaxis grading in pediatric patients at Bhumibol Adulyadej hospital and investigate the factors that related to moderate to severe anaphylaxis.

Material and methods: A retrospective descriptive study was performed in pediatric patients, who were diagnosed as having anaphylaxis and admitted to pediatric department, Bhumibol Adulyadej hospital between January 1st, 2011 and December 31th, 2016.

Results: The incidence of anaphylaxis in pediatric patients was 260 per 100,000 admitted pediatric patients per year between 2011 and 2016. The mean age was 8.61 years (range 0.25 to 15 years). The most common clinical characteristic was skin and subcutaneous symptoms (98.3%). 6.8% was graded as severe anaphylaxis. Cardiovascular symptoms were associated with moderate to severe anaphylaxis ($p < 0.001$). 44.9% of patients had atopic diseases. Asthma was the potential factor for moderate to severe anaphylaxis ($p < 0.001$). No death was found in this study. Recurrent of anaphylaxis was 15.3%. Biphase anaphylaxis was 28.4%. Delayed administration of epinephrine was associated with biphase anaphylaxis ($p < 0.001$).

Conclusion: Patients who had asthma and cardiovascular symptoms were associated with moderate to severe anaphylaxis. Delayed administration of epinephrine was associated with biphase anaphylaxis. These patients should be closely followed after admission. 15.3% of patients had recurrent anaphylaxis. Identifying causes, avoidance of triggers and portable epinephrine carriage together with proper instruction of self-administration are very important in all anaphylactic patients.

Keywords: clinical characteristics, anaphylaxis, pediatric patients, tertiary-care hospital

Clinical use of the New Paradigm of WHO Dengue Classification in

BhumibolAdulyadej Hospital

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Background: Dengue infection is a major public health problem in South East Asia, including Thailand. Accurate diagnosis and appropriate management are essential steps to decrease mortality rate. In 2009, World Health Organization (WHO) presented the Dengue New Classification by adjusting the diagnostic criteria for dengue infection to be easy to implement.

Objective: To evaluate the clinical use of WHO Dengue Classification 2009 for dengue virus infection at BhumibolAdulyadej Hospital.

Material and methods: A Retrospective descriptive study was performed at the Pediatrics Department of BhumibolAdulyadej Hospital. Medical records of eligible patients who were aged under or 15 years old and diagnosed with dengue infection between July 1, 2016 and October 31, 2017 were reviewed.

Results: Two hundred and nine patients with dengue virus infection were diagnosed. 168 cases (80.4%) were done according to the conventional classification, 29 cases (13.9%) the new classification, and 12 cases (5.7%) both classifications for the diagnosis. In conventional classification group, 127 cases (75.6%) followed the treatment guideline. In new classification group, all patients followed the treatment guideline. All dengue patients were discharged with no complication.

Conclusions: The new paradigm WHO Dengue Classification 2009 is not yet world-wide for clinical use in dengue diagnosis and management at the Pediatrics Department of BhumibolAdulyadej Hospital.

Keywords: Dengue, Warning signs, Admission, Classification, Clinical use

Pediatric Respiratory Severity Score (PRESS) Evaluates Disease Severity of Respiratory Tract Infection in Children

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Background: Acute Respiratory Infections (ARIs) are commonly found as a cause of morbidity and mortality in children aged below 5 years old. PRESS Score is a simple severity scoring system. Healthcare providers can apply it as a preliminary patient assessment for proper treatments.

Objective: To evaluate PRESS Score as a severity assessment for pediatric patient with acute respiratory infections.

Material and methods: This is a prospective study from 1st September 2016 to 31st October 2017. The study group includes patients aged 3 months to 14 years old. There are 120 cases diagnosed with ARIs. The use of PRESS Score as an assessment tool has 5 parameters: respiratory rate, wheezing, accessory muscle use, peripheral oxygen saturation (SpO₂), and feeding difficulties, and can be classified into 3 groups: mild (score 0 or 1), moderate (score of 2 or 3), and severe (score of 4 or 5). The primary outcomes are sensitivity, and specificity of hospitalization. The secondary outcomes are sensitivity, specificity of ICU admission, mean and standard deviation of duration of oxygen therapy and nebulized bronchodilator.

Results: The admitted regular patients in moderate, and severe group have a sensitivity of 0.94 and a specificity of 0.88, whilst the ICU patients in severe group have a sensitivity of 0.75 and a specificity of 0.66, longer duration for oxygen treatment, and longer duration for nebulized bronchodilator treatment, orderly, and statistically significantly. Furthermore, this system is more reliable than previous respiratory severity score.

Conclusions: PRESS score could predict condition severity and might guide a proper treatment of acute respiratory infection in children.

Keywords: pediatric severity score, respiratory tract infection.

Probiotics Strain *Lactobacillus Acidophilus* and *Bifidobacterium Bifidum* in the
Treatment of Acute Diarrhea in Children:

A Randomized, Double- Blind, Placebo-Controlled Trial

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Background: Despite unproven effectiveness, probiotics combination strain *Lactobacillus acidophilus* and *Bifidobacterium bifidum* are widely used in the treatment of pediatric diarrhea.

Objectives: To evaluate the effectiveness of probiotics strain *acidophilus* and *B. bifidum* for the treatment of acute diarrhea in infants and young children.

Material and methods: A randomized, double-blind, placebo-controlled trial was performed in acute diarrheal patients aged 6 months-5 years. The primary outcome was the duration of diarrhea. The secondary outcomes included the 48-hour cessation rate, the duration of hospitalization and adverse effects.

Results: Ninety-five patients completed the study, 47 in probiotic group and 48 in placebo group. The mean duration of diarrhea was 37.28 hours in probiotic group and 50.67 hours in placebo group (mean difference 13.39 hours; 95% CI 5.73-21.05, $P = 0.002$). The 48-hour cessation rate in probiotic group was 85.1% vs. 41.7% in placebo group ($P < 0.001$). By subgroup analysis in rotavirus-positive patients, the mean duration of diarrhea was 39.84 hours in the probiotic group and 51.29 hours in the placebo group (mean difference 11.45 hours; 95% CI 1.04-21.86, $P = 0.027$) and the 48-hour cessation rate was 84.21%, 37.5% in the probiotic group, placebo group respectively ($P = 0.002$). The mean duration of hospitalization was 15.09 hours shorter in probiotic group (95% CI 3.32-26.85, $P = 0.013$). No adverse effects were found in both groups. The cost of treatment among 2 groups was not significantly different ($P = 0.451$).

Conclusion: Probiotics strain *L. Acidophilus* and *B. Bifidum* are effective adjuvant therapy for the treatment of acute diarrhea in infants and young children.

Keywords: Probiotics, *L. Acidophilus*, *B. Bifidum*, acute diarrhea,

Factors Associated with Dengue Shock Syndrome

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Background: Dengue shock syndrome (DSS) is a significant global health problem. Mortality rate of Dengue infection in Thailand was 0.13%. Early detection of patients at risk to develop DSS is an important step to decrease mortality rate. The primary care centers do not have special laboratory test to predict DSS. Some clinical clues could help identifying such patients at risk.

Objective: To identify any factors associated with the development of shock.

Material and methods: The Cross-sectional descriptive study was done among pediatric patients. Medical records of eligible patients who were aged under or 15 years old with diagnosed dengue virus infection between January 1, 2012 and December 31, 2016 and confirmed by at least one positive test for dengue non-structural protein 1 (NS1) antigen test and/or positive Immunoglobulin M for dengue virus were reviewed and analyzed. The protocol was approved by the ethics review committee of Bhumibol Adulyadej Hospital.

Results: Of the 305 laboratory-confirmed dengue patients, 292 (95.7%) were in the dengue non-shock group and 13 (4.3%) were in the DSS group. The presence of petechiae, dizziness or irritable, hepatomegaly, and signs of plasma leakage (ascites and pleural effusion) would significant increase risk of DSS. Using binary logistic regression, presenting of dizziness (OR 60.4, 95%CI 5.2-708.6), and irritable (OR 13.8, 95%CI 1.0-190.9), signs of plasma leakage (OR 38.9, 95%CI 6.1-250.2), and platelet count below 50,000/mm³ (OR 18.5, 95%CI 1.9-177.4) were found out to be significant risk factors of shock in pediatric patients of DHF.

Conclusion: Factors associated with high risk of developing DSS were dizziness, irritable, signs of plasma leakage (pleural effusion and ascites), and thrombocytopenia.

Keywords: Dengue fever, Dengue hemorrhagic fever, dengue shock syndrome, factor associated

Fluorescein Experience for High Grade Glioma Resection in Bhumibol Adulyadej hospital

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Background: Glioblastoma is 15% of primary brain tumor. GBM is 80% of malignant brain tumor. An approximately deaths are 13000/ year and average life expectancy 14 months. Extended GBM resection determines of outcome, with longer life expectancy and improve intraoperative visualization and detection of residual tumor. Invasive behavior of high grade glioma made complete tumor resection, difficult to achieve. Heterogeneity and similarity of tumor with surrounding brain parenchyma when visualized under a surgical microscope sodium fluorescein use with Intravenous low dose fluorescein provides an available method for fluorescein guided tumor resection can improve resection of gliomas with minimal risks

Objective: To review cases with craniotomy operation with intra operative sodium fluorescein injection.

Material and methods: We performed craniotomy with intra operative sodium fluorescein since May 2016. Total cases from May 2016-May 2017 were 23 cases, male 16 and female 7.

Results: There were brain metastasis 12 cases, GBM 8 cases which were anaplastic astrocytoma 3 cases. The median age was 45-years-old and with 1-12 months follow up.

Conclusion: Sodium fluorescein use with advanced microscope integrated for surgical resection can improve surgical outcome and prolonged survival rate for high grade glioma patients.

Keywords: fluorescein experience, high grade glioma, resection

**Comparison of Basic Life Support Knowledge between
Video Tutorial and Traditional Instruction for Nurses at
Bhumibol Adulyadej Hospital, Directorate of Medical Services, RTAF**

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Objective: To compare the knowledge of basic life support (BLS) between Video tutorial and traditional instruction for nurses of Bhumibol Adulyadej Hospital, Directorate of Medical Services, RTAF.

Material and methods: Nurses at Bhumibol Adulyadej Hospital were categorized into 2 groups by simple randomization method, Video tutorial and traditional instruction were implemented in group 1 (experimental group) and group 2 (control group), respectively. Pre and posttest of MEQ examination and skill checklist by instructor were assessed between the two groups.

Results: There were 195 and 192 nurses in experimental and control groups, respectively. The mean age was 32.4, while most of the age group was 20-25 years old. Most of them have less than 5 years of experience in nursing care. There was no statistically significant difference between the increasing score of MEQ examination and skill checklist score between the two groups. (p value = 0.49 and 0.967.)

Conclusion: There were no statistically significant difference of BLS knowledge and skill between using Video tutorial and traditional instruction.

Keywords: basic life support, knowledge, video tutorial, traditional instruction, nurses

The Factors Affecting Preferences of Thai Pregnant Women towards the Mode of Delivery Preparing between Rural and Urban Area

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Background: Cesarean delivery is one of the most controversial topics in obstetrics. It can effectively prevent maternal and perinatal mortality and morbidity. However, in 1985, the World Health Organization states (WHO) suggested that rate of the cesarean section should not exceed 15% since there is no additional benefit for the newborns or for the mothers are obtained beyond this level and it might cause further risk to the mother, child and the future pregnancy. But the overall cesarean section rate is increasing in several countries, as well as in Thailand.

Objective: To identify the reasons for pregnant women to prefer cesarean delivery and the differences between a rural and urban area in Thailand. This might be a useful information to developed and decrease the cesarean section rate in Thailand corresponding with the ideal WHO cesarean section rate.

Material and methods: A cross-sectional study using a 5 parts questionnaire was conducted on stratified proportional randomized 300 pregnant women who are coming to ANC at Chulalongkorn Hospital, Bhumibol Adulyadej Hospital, and Chonburi Hospital during September to November 2017. The data was interpreted and categorized into two group; Urban and Rural and was described by using percentage.

Results: Our study shows that 26% and 20% of the samples preferred an elective cesarean delivery in urban and rural area respectively. The urban and rural group can answer the knowledge testing correctly 57.9% and 56%. The most incorrect knowledge testing question is vaginal delivery has more postpartum infection risk than Cesarean section (no).

The most preferable attitude towards vaginal delivery is similar in both urban and rural group which is the desire of a natural process (78.5%). On the contrary, the rural group has most out-standing prefer reason that cesarean section can avoid labor pain (62.4%) but in the urban group, the reasons are mostly about the preservation of sexual satisfaction that might be ruined following vaginal delivery (83.7%).

Moreover, it shows that the rural group mostly believe in the caesarean section on demand which is the mother's right regardless the proper indications, while the urban group believes that it should be the doctors' decisions.

Conclusion: The preference of elective cesarean section is difference between rural and urban Thai population

Keywords: factors, preferences, Thai pregnant women, mode of delivery, rural, urban area.

Oral Submucous Fibrosis: A Case Report and Review of the Literature

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Oral submucous fibrosis (OSF) is a chronic mucosal condition affecting any part of the oral mucosa, characterized by mucosal rigidity of varying intensity due to fibroelastic transformation of the juxta-epithelial connective tissue layer. It is a potentially malignant disorder associated with betel quid and areca nut chewing. Most cases have been reported worldwide wherever Asians migrate, but it occurs most commonly in India and Southeast Asia. OSF results in marked rigidity and an eventual inability to open the mouth. The buccal mucosa is the most commonly involved site. Squamous cell carcinoma may occur in 7.6% of OSF cases. Several therapeutic and surgical methods have been tried in the treatment of OSF.

The present case was a 28-year-old Thai male patient with limited mouth opening and burning sensation while eating for 10 months. He denied any other significant medical issues. He had been a fisherman for a year. He had the habit of chewing flavored areca nut while doing his job. He noted that after chewing the nut approximately 4-5 months, he began having oral burning and irritation so badly that he had progressive difficulty in opening his mouth. However, he has discontinued this habit because he quit the job, but his oral discomfort still progresses. On oral examination, blanching and dense fibrotic bands were seen on the both buccal mucosa, soft palate and lower labial mucosa. The interincisal opening was 20 mm. A biopsy is confirming the histological features of the OSF. In addition, complete blood count showed mild anemia. A comprehensive treatment plan was made based on conservative management that included motivation to quit the habit of chewing areca nut, along with topical treatment of steroid and oral physiotherapy. At 6-month follow-up, interincisal opening was reported to be 30 mm.

Keywords: Oral submucous fibrosis, areca nut, management

**Review Article of Cost-Effectiveness Analysis of
Newborn Hearing Screening Examination in Thailand**

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Hearing impairment in newborn with disabilities is a condition that is more common as the third in the world. Developed countries, the incidence infants with a hearing impairment both sides approximately 2–4 infants per 1,000 live births. Is expected in developing countries is likely to have infants with an incidence of hearing impairment both sides infants over 6 per 1,000 live births, representing 120 million people of neonatal births. Due to the health condition Economic and social conditions, stimulating heard enough the most important factor for speech, language development and cognitive skills. Hearing screening in newborns can detect hearing impairment at an early age. To the treatment and regain speech to hearing evaluation for living in to normal society, current screening for hearing in infants is divided into two main policy is to make universal screening all newborns and screening the infants at risk, due to the limitations of budget and resources.

This paper show incidence of newborn hearing impairment, guideline for standardization, interpretation of newborn hearing screening examination in Thailand and international countries. It also show risk factors of hearing impairment in newborn, guideline for treatment of impaired hearing from birth to 6 months, hearing rehabilitation in Thailand, follow up evaluation of treatment program and cost–effectiveness analysis newborn hearing screening examination in Thailand.

Keywords: cost–effectiveness analysis, congenital hearing loss, hearing examination, treatment.

**Cost-Effectiveness of Influenza Vaccines and Comparing Influenza Vaccine
Efficacy against Trivalent and Quadrivalent Strains:
A Systematic Review 2013-2017**

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Background: Each year; influenza affects hundreds of millions of people. In order to limit the burden, influenza should remain at the top of the public health priority list. But influenza has attracted less attention recently and priorities and perceptions now differ around the globe and varying with the different cultural and economic contexts. Influenza vaccines are most effective when the antigens in the vaccine match those of circulating strains. However antigens contained in the vaccines do not always match circulating strains.

Objective: To examine the vaccine efficacy afforded by influenza vaccines when they are not well matched to circulating strains and evaluate cost-effectiveness of influenza vaccine.

Material and methods: We identified randomized clinical trials (RCTs) through PUBMED, SCOPUS and references included RCTs. RCTs reporting laboratory-confirmed influenza among all participants vaccinated with antigens of matching and non-matching influenza strains were included. Two independent reviewers screened citations/full-text articles, abstracted data, and appraised risk of bias. Conflicts were resolved by discussion.

Results: From the review of a total of 25 studies on the influenza vaccine and studies comparing the efficacies of trivalent and quadrivalent influenza vaccines 10 studies, most have found the influenza vaccine to be effective in reducing hospitalization costs both at the individual and societal level, and efficacy of quadrivalent influenza vaccines superior than trivalent influenza vaccines.

Conclusions: The aim of this study was to systematically review published studies that evaluated the effectiveness of influenza vaccination in preventing influenza and its complications. Influenza vaccines can provide highest protection against virologic influenza. Quadrivalent influenza vaccines consistently show higher efficacy than trivalent influenza vaccines. Willing to pay is interesting in future management of socialization perspective of government.

Keywords: cost effectiveness, influenza vaccines, vaccine efficacy, trivalent, quadrivalent strains, systematic review

Health Promoting Behaviors of Medical Personnel at the

Directorate of Medical Service, Royal Thai Air Force

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Objective: The study was a survey research design aimed to study the level of 6 health promoting behaviors as well as compare such behaviors across the health data among the medical personnel at the Directorate of Medical Service, Royal Thai Air Force.

Material and methods: The sample was 171 who attended at the annual Health promoting day on November 24th, 2017. Pender's Health promotion questionnaire was used in this study. The data were analyzed by using descriptive statistics, t test Independent, Chi-square test and One-way ANOVA.

Results: revealed that the average mean scores (standard deviation; S.D.) of all 6 health behaviors was 3.17(0.25). The scores were still low in nutrition and exercise behavior areas, the mean score (S.D.) were 2.87(0.49) and 2.82(0.35) respectively. The statistically significance differences were found among "exercise score group versus %body fat group" and "nutrition score group versus %body fat group" ($p < 0.05$). Moreover, the results showed positive linear correlation between body mass index (BMI) and blood pressure levels, both systolic and diastolic blood pressure.

Conclusion: All health promoting behaviors should be concerned and kept in mindful thoughts of everyone. The health status should be assessed and followed up consistently. The "Self-help and Self care" are the most important strategies to make the Directorate of Medical Service to be the healthy organization.

Keywords: health promoting behaviors, Directorate of Medical Service

Acknowledgement: Many thanks for all "Health promoting team" of Division of Preventive Medicine and "All participants".

Satisfaction Monitoring and Real Time Management by Using QR Code-Mobile Survey on the Physical Examination Dates of RTAF Officer Recruitment

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Background:According to the policy of Thailand 4.0, there have been promoted the information technology systems (IT) integrated with daily working in everywhere. At the Division of Preventive Medicine, Directorate of Medical Service, there are many RTAF officers who come to receive annual medical checkups and medical services every day.

Objective:This pilot project was aimed to improve our service process system by using IT.

Material and methods:The project was conducted on November 6-8th 2017, the physical examination dates of RTAF officer recruitment. This focus was on the teamwork of all our staffs under the concept "Plan Do Check Act". We prepared all 12 stations for services. After passing all stations, each officer was asked to scan the QR code to answer the questionnaire to assess the satisfaction of all services. Along the time of examination dates, we prepared a public relation and an IT officer who monitored the comment results on the computers at the front.

Result:Number of feedback sent to the service section if they found any problem.

Conclusion, using this QR code survey is the rapid and safe method for our team to know all comments, to monitor on real time, thus, we can manage to improve our services as soon as possible.

Keyword: satisfaction monitoring, real time management, QR code

Acknowledgement: Many thanks for all personnel of Division of Preventive Medicine, Directorate of Medical service, RTAF and all Participants

The Relationships among Knowledge, Attitude and Behavior in Using Information Technology for Nursing of Force Student Nurses in

Royal Thai Air Force Nursing College, Academic Year 2016

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Objective: This research aimed to examine the relationships among knowledge, attitude and behavior in using information technology for nursing of Air Force Student Nurses in Royal Thai Air Force Nursing College.

Material and methods: Stratified Random Sampling was used to recruit the participants. Participants were 135 first to fourth years Air Force Student Nurses, academic year 2016. Instruments were knowledge, attitude and behavior in using information technology for nursing questionnaires. Instruments were test for reliability and reliability was 0.93. Data were analyzed by using descriptive statistic and Pearson Product Moment Correlation Coefficient.

Results:

1) Knowledge was medium level ($\bar{X} = 11.06$, S.D. = 2.16). Attitude was good level ($\bar{X} = 3.91$, S.D. = 0.75) and behavior in using information technology for nursing was medium level ($\bar{X} = 3.16$, S.D. = 1.13).

2) To compare the using information technology for nursing of nursing students. Each year, the finding showed that knowledge and behavior in using information technology was statistical difference at 0.05 levels. However, there was no statistical difference in attitude in using information technology for nursing of nursing students in each year.

3) The attitude and behavior in using information technology was statistical significant relationship at 0.05 level ($r = .219$). The relationships among knowledge and attitude, and knowledge and behavior in using information technology were no statistically significant relationship.

Conclusion: The results of this study could be used to develop and promote in using information technology for Air force student nurses in order to success in professional nursing who ready to use information technology for nursing.

Keywords: Knowledge, Attitude, Behavior, Information Technology, Nursing Air Force Student Nurses

**An Evaluation of the Bachelor of Nursing Science Curriculum
(Revised Curriculum, 2012) Royal Thai Air Force Nursing College**

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Objective:The descriptive research aimed to evaluate the Bachelor of Nursing Science Curriculum of the Royal Thai Air Force Nursing College (Revised curriculum, 2012) using the CIPP Model including context, input, process, and product.

Material and methods: Participants were 45 fourth year air force student nurses, academic year 2016. Participants were completed the curriculum questionnaires consist of four domains which demonstrated acceptable content validity and reliability. Data were collected during January 16-31, 2017. Descriptive statistic was used to analyze data for this study.

Results:

1. Context: The opinions of the fourth year air force student nurses towards philosophy and objective of curriculum was highest level ($\bar{X} = 4.59$, S.D. =0.33) and the opinions about structure and content of curriculum was high level ($\bar{X} = 4.33$, S.D. = 0.71).

2. Input: The opinions of the fourth-year air force student nurses towards input of curriculum was high level ($\bar{X} = 4.03$, S.D. =0.69).

3. Process: The opinions of the fourth-year air force student nurses towards learning process of the curriculum was high level ($\bar{X} = 4.09$, S.D. =0.67).

4. Product: The opinions of the fourth-year air force student nurses towards nurses' competencies was medium level ($\bar{X} = 3.04$, S.D. =0.96).

Conclusion:These results can be used to develop nursing curriculum in the future.

Keywords: Evaluation of curriculum, Bachelor of Nursing Science Curriculum, Royal Thai Air Force Nursing College

Predictive Factors of Sentinel Lymph Node Metastasis in Early Breast Cancer Patients

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Background: The presence of axillary lymph node (ALN) metastases is an important prognostic factor in breast cancer. Sentinel lymph node (SLN) biopsy is a method for the evaluation of axillary status in patients with early breast cancers (T1-2N0M0). The morbidity from ALN dissection can be avoided without compromising the staging and management.

Objective: The aim of the study was to investigate the rate of SLN metastasis and association between SLN metastasis and clinico-pathological factors, in the case of SLN metastasis (≥ 1 node), in clinically node negative patients with early breast cancer in our institute.

Material and Methods: A retrospective study of 290 cases of patients with histologically proven primary breast cancer, who underwent breast surgery with SLN biopsy in the department of surgery, Bhumibol Adulyadej Hospital, between January 2012 and December 2017, was conducted. The rate of nodal metastases was correlated with clinico-pathological factors. The data collection includes the following characteristics: age, menopausal status, family history of breast cancer, location of cancer, breast surgery, waiting times for surgery, tumor size, histological cell type, histologic grade, multifocality, lymphovascular invasion (LVI), estrogen receptor (ER), progesterone receptor (PR) and HER-2 receptor, Ki-67 status. The data were analyzed by univariate and multivariate analysis.

Results: A successful SLN biopsy was performed in 288/290 (96.3%) cases. SLN metastasis was detected in 99/288 (34.4%) cases. These patients then underwent standard axillary dissection. Multivariate analysis showed that tumor size (OR 5.41, $p < 0.001$), histologic grade (OR 2.35, $p = 0.009$) and presence of LVI (OR 12.85, $p < 0.001$) were significant independent predictors for SLN metastasis. Based on these factors, rate of sensitivity, specificity, PPV, NPV and accuracy of the prediction of SLN metastasis were 74.2%, 78.7%, 65.4%, 84.9% and 77.1%, respectively.

Conclusion: A close relationship was identified between tumor size, histologic grade and LVI status of the primary tumor and SLN involvement. The PPV of these variables is considerably low. However, our predictive model provides a good NPV for the prediction of SLN metastasis. These factors should be validated in prospective studies before they can be used generally.

Keywords: predictive factors, sentinel lymph node, early Breast Cancer Patients

Clinical Outcome of Normal Pressure Hydrocephalus Patient Comparison between Programmable Ventriculo-peritoneal Shunt and Medium Pressure Ventriculo-peritoneal Shunt in BhumibolAdulyadej Hospital

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Objective: to evaluated clinical outcome in normal pressure hydrocephalus patient comparison between programmable ventriculo-peritoneal shunt and medium pressure ventriculo-peritoneal shunt and (2) to study other factor in correlation in normal pressure hydrocephalus patient in BhumibolAdulyadejHospital

Material and methods: The sample consisted of 61 case from 101 cases, exclusion criteria 40 case treatment about normal pressure hydrocephalus patient. Retrospective study from 2013 – 2017 in neurosurgery department in BhumibolAdulyadejHospital was review from outpatient, in - patient department and other report in neurosurgery department. Comparison clinical data and clinical outcome pre – operative and post-operative outcome and demographic data were analyzed. Statistical analysis was performed by SPSS and Chi – square test.

Results: Patients 61 case include in study 52 cases (85.24%) in programmable Ventriculo-peritoneal shunt and 9 cases (14.75%) in medium pressure ventriculo-peritoneal shunt. In programmable ventriculo-peritoneal shunt was male 32 case(61.54%), female 20 case(38.46%).In medium pressure ventriculo-peritoneal shunt was male 5 case(55.56%),female 4 case(44.44%).In this clinical study found normal pressure hydrocephalus found in male more than female, in age 71 – 80 years old, clinical symptom presentation more about the gait, time of stay in hospital 1 – 7 day, operation time 61 – 90 minute, minimal blood loss from both operation 11 – 50 cc and below than 10 cc, bur hole site is frontal than parietal and on the right than the left, average operation setting pressure in programmable ventriculo-peritoneal shunt was 8 – 12 cmH₂O.adjusted the shunt 1 – 4 time in this study in 2 year follow up and clinical outcome post operation was improvement but not significant in statisticsanalysis. Bure-holed site and the operation was differentiation in statistical analysis p value 0. 119. Post op complication finding 15 cased (28.85%) in programmable ventriculo-peritoneal shunt and 2 cases (22.22%) in medium ventriculo-peritoneal shunt. The most common complication was pneumonia 5 cases (9.62%).

Keywords:clinical outcome, normal pressure,hydrocephalus patient,comparison, programmableventriculo-peritoneal shunt, medium pressure entriculo-peritoneal shunt

Quality of Life of Air Force Retirees and Families with Chronic illness Received Palliative care

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Objectives: This research aimed to study quality of life level, physical and psychological problems of Air Force Retirees and families with chronic illness and received palliative care.

Material and Methods: Population was 153 Air Force Retirees and families with chronic illness. Convenient sampling was used to recruit 110 participants. Research instrument was WHOQOL-BREF-THAI questionnaires; Cronbach's alpha coefficient was 0.89. Descriptive statistic was used for data analysis.

Results: The results revealed that the quality of life of Air Force Retirees and Family with Chronic illness and received palliative care was at medium level 80 %, (n=88). Quality of life of health factors was at medium level 90.91% (n=100), mental health factors was at medium level 76.36 % (n=84), social relation factors was at medium level 50.91% (n=56), environment factors 60.91% (n= 67) The most common found related to physical problem was pain. Psychological problems mostly found in bed ridden patients were feeling downhearted and depression.

Conclusion: The results of this study could be used as a guideline to promote a better quality of life of Air Force Retirees and families with chronic illness and received palliative care.

Keywords: Quality of life, Air Force Retirees, Chronic illness, Palliative care