

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

Rachaya Angkapinit MD., Orawan Saibuatong MD.**

**Emergency unite, Department of Outpatient Clinic,*

Bhumibol Adulyadej Hospital Thailand RTAF.

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

Anatomical Study of Scaphoid Waist by Ridge –Head Scaphoid Angle

*AkekapongTangwongvar MD.**

**Hand and Microsurgery Unit, Department of Orthopedic Surgery,*

Bhumibol Adulyadej Hospital

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

Rubella Immunity Seroprevalence in Pregnancy at Bhumibol Adulyadej Hospital

MuangloeiRungoutok MD.^{*}, NawabhornOrungrote MD.^{*}

**Department of Obstetrics and Gynecology, BhumibolAdulyadej Hospital*

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**

SuntaraBoonchu MD. KanyikaWanwimonsuk MD.**

**Emergency unite, Department of Outpatient Clinic, Bhumibol Adulyadej Hospital Thailand RTAF.*

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

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

PornpopRattana-arpha DDS.

Department of dentistry, Bhumibol Adulyadej Hospital, RTAF, Bangkok, Thailand

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**

Sataneengamsanga MD.

Department of Otolaryngology, Bhumibol Adulyadej Hospital

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**

Satane Ngamsanga MD.

Department of Otolaryngology, Bhumibol Adulyadej Hospital

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 evaluation 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 confirm 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

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

*ChayaphatThongpaknumRN.**

**Royal Thai Air Force, Colleges of Nursing Bangkok Thailand 10220*

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**

Bangorn Ritudom RN., M.S. (Nursing)

Vice Chief of Education Department, Royal Thai Air Force Nursing College,

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

SarrathSutthipong MD., OrapichKayunkid MD., ApichartPloysangwal MD.

Department of Surgery, Bhumibol Adulyadej Hospital,

Royal Thai Air Force, Bangkok, Thailand

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 Bhumibol Adulyadej Hospital

Kowitboonthawee, MD.

Kalinpanommarch, MD. Supaporn Kritsaneepaibool MD

Department of Surgery Bhumibol Adulyadej Hospital

Objective: to evaluate clinical outcome in normal pressure hydrocephalus patient comparison between programmable ventriculo-peritoneal shunt and medium pressure ventriculo-peritoneal shunt and (2) to study other factors in correlation in normal pressure hydrocephalus patient in Bhumibol Adulyadej Hospital

Material and methods: The sample consisted of 61 cases from 101 cases, exclusion criteria 40 cases treatment about normal pressure hydrocephalus patient. Retrospective study from 2013 – 2017 in neurosurgery department in Bhumibol Adulyadej Hospital was reviewed from outpatient, inpatient department and other reports in neurosurgery department. Comparison of 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: 61 cases included 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: male 32 cases (61.54%), female 20 cases (38.46%). In medium pressure ventriculo-peritoneal shunt: male 5 cases (55.56%), female 4 cases (44.44%). In this clinical study, normal pressure hydrocephalus was found in males more than females, in the age group 71 – 80 years old, clinical symptoms presented more about gait, time of stay in hospital 1 – 7 days, operation time 61 – 90 minutes, minimal blood loss from both operations 11 – 50 cc and below 10 cc, bur hole site is frontal rather than parietal and on the right rather than the left, average operation setting pressure in programmable ventriculo-peritoneal shunt was 8 – 12 cmH₂O. Adjusted shunt 1 – 4 times in this study in 2-year follow-up and clinical outcome post-operation was improved but not significant in statistical analysis. Bore-hole site and the operation were differentiated in statistical analysis with a p-value of 0.119. Post-operative complications: 15 cases (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, programmable ventriculo-peritoneal shunt, medium pressure ventriculo-peritoneal shunt