

MEDASC
2023



THE 12th ANNIVERSARY ANNUAL CONFERENCE, SCHOOL OF MEDICINE

The 25th Anniversary, Mae Fah Luang University

“Collaboration Towards Medical Excellence”

12-15 December 2023



UT Southwestern
Medical Center.



The School of Medicine, Mae Fah Luang University
Medical Center Hospital Chiang Rai Province

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- **Flexibility**
- **Integrity**
- **Resourcefulness**
- **Spirit**
- **Teamwork**

“Success is the sum of small efforts
repeated day in and day out.”
— Robert Collier



Welcome Message

Dear Colleagues, Honored Guests, and Participants,

It is with great pleasure and anticipation that I welcome you to the School of Medicine, Mae Fah Luang University's conference on "Collaboration Towards Medical Excellence." As the Dean of the School of Medicine, Mae Fah Luang University, I am honored to be part of this multifaceted assembly of medical professionals, researchers, and innovators who converge with a shared commitment to advancing healthcare.

In the ever-evolving landscape of medicine and medical sciences, this conference serves as a crucible for ideas, a nexus for interdisciplinary discourse, and a catalyst for transformative advancements. Throughout the next four days, we will engage in a rich tapestry of discussions, presentations, and workshops that encapsulate the forefront of "Collaboration Towards Medical Excellence". The diverse expertise assembled here reflects the dynamic mosaic of perspectives that fuels our academic community.

We offer a range of intriguing topics, including the Cadaveric workshop: Breast surgery, Hands-on POCUS workshop, The evolution of medical professions, 3P safety for good health & well-being, Management of colon cancers by immunotherapy, Application of proteomics in cancer research, Recent advances in medical research and innovation, The role of improvement in addressing community health, Home Healthcare in Thailand, Crisis and health effects of small dust particles (PM2.5), Laparoscopic surgery, Direction and Future of Thai health care, Virtual care for patients with chronic wounds, Telenursing care for cancer patients, etc.

I extend my deepest gratitude to the organizers, speakers, and participants who have worked tirelessly to make this event a reality. May MedASC 2023 be a source of inspiration, enlightenment, and lasting connections.

Thank you, and let the conference commence.

Sincerely,



Prof. Emeritus Supakorn Rojananin, MD
Dean of the School of Medicine, Mae Fah Luang University

Scientific Committees

Lt. Gen Emeritus Prof. Nopadol Wora-Urai, MD

Emeritus Prof. Supakorn Rojananin, MD

Clinical Prof. Maj.Gen. Apichai Leelasiri, MD

Cdr.Ubonwon Charoonruangrit, MD

Clinical Prof. Apirag Chuangsuwanich, MD

Roger Timothy Callaghan, MD

John Owen Gibson, MD

Kaset Chimplee, MD

Phitsanu Boonprasert, MD

Poom Chomposri, MD

Chanatip Pramvichai, M.D.

Korawit Sawanaporn, M.D.

Phichai Phongmanjit, M.D.

Iyara Wongpia, MD

Pornphan Rujirakan, MD

Kittisak Thitipanya, M.D.

Salisa Sriwongpornthana, MD

Somprat Munjit, M.D.

Pitawan Rachata, M.D.

Aumrak Juengwiroj, MD

Asst. Prof. Dr.Nittaya Chansiw

Asst. Prof. Dr.Sivaporn Sivasinprasasn

Dr.Siwaporn Praman

Dr.Pathamet Khositharattanakool

Asst. Prof. Dr.Kamonnaree Chotinantakul

Dr.Benjamard Sukjai

Dr.Narudol Teerapattarakan

Dr.Siripat Aluksanasuwan

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Busaba Chaikham, ET. RN
Jojitika Benchaa, ET. RN
Pimlaphats Phanitchakorn, ET. RN
Punnanuch Jimanali, ET. RN
Miss Rommanee Kwongparichat
Miss Thipaporn Wongngam
Mr. Peerapong Ngaotrakul
Mr. Supasin Rungdee
Mr. Nattakit Chantanakeht
Assoc. Prof. Maj. Gen. Sangkae Chamnanvanakij, MD
Asst. Prof. Arnon Jumlongkul, MD
Dr. Keerakarn Somsuan
Mrs. Panwadee Noipairoj
Mrs. Orathai Ratcha-oun
Miss Prangtip Tansiri

Research and Academic Excellence Committees

Clinical Prof. Maj. Gen. Apichai Leelasiri, MD
Cdr. Ubonwon Charoonruangrit, MD
Prof. Sanguansin Ratanaalert, MD
Wiwat Chiewsilp, MD
Asst. Prof. Arnon Jumlongkul, MD
Assoc. Prof. Sittiporn Punyanitya, MD
Kaset Chimplee, MD
Mrs. Orathai Ratcha-oun
Mrs. Panwadee Noipairoj

Symposium Program

Pre-Congress Tuesday, 12 December 2023 (08.00 AM – 4.30 PM)		
Time	MFU CaST Center (4 th Floor, Room 416)	7 th Floor
08.00-08.45	Registration	Registration
08.45-09.00	Opening Ceremony	
09.00-12.00	<p style="text-align: center;">Cadaveric workshop: Breast surgery</p> <ul style="list-style-type: none"> • Anatomical standpoint of LD flap and TRAM flap for breast reconstruction • Surgical technique of nipple sparing mastectomy with scarless LD flap and breast implantation (in brief) • Cadaveric Hands-on training for “Nipple sparing mastectomy with scarless LD flap and breast implantation” 	
12.00-13.00	Lunch	
13.00-16.30	<p style="text-align: center;">Cadaveric workshop: Breast surgery</p> <ul style="list-style-type: none"> • Surgical technique of immediate TRAM flap breast reconstruction after mastectomy • Cadaveric Hands-on training for TRAM flap breast reconstruction after mastectomy 	<p>Hands-on POCUS workshop (group 2) Dr. John Gibson, MD Dr. Korawit Sawanaporn Dr.Lesca Hadley</p>

Main Conference Day 1		Wednesday, 13 December 2023 (1.00 PM – 08.00 PM)	
Time	15th Floor (Conference room)		
10.30-13.00	Registration		
13.00-13.45	Opening Ceremony		
13.45-14.45	<p align="center">Plenary 1 The evolution of medical professions: past, present and future <i>Prof. Emeritus Dr. Somsri Pausawasdi</i></p>		
14.45-15.00	Coffee break and Exhibition		
15.00-16.00	<p align="center">Plenary 2 From 3P safety to good health & well-being <i>Dr. Piyawan Limpnyalert</i></p>		
17.30-20.00	<p align="center">Welcome dinner by invitation only <i>Blendsook restaurant</i></p>		

Main Conference Day 2			
Thursday, 14 December 2023 (08.00 AM - 07.00 PM)			
Time	MFU CaST Center (4th Floor, Room 416)	15th Floor, Room 1518 Surgery Sessions	15th Floor, Room 1519-1520 Community and Elderly Health Care
08.00-08.30	Registration	Registration	
08.30-09.00		S1: Colorectal cancer from A to Z Tanet Chatmongkonwat, MD Chiangrai prachanukroh Hospital	S2: Partnering with community physicians to improve regional care Dr. Estin Yang, OHSU, USA
09.00-09.30	Introduction: Full endoscopic lumbar spine surgery Cadaveric workshop, Endoscopic spine surgery: Lumber	S3: Current management in colorectal cancer Panat Tipsuwannkul, MD Police Hospital	S4: The role of improvement science in addressing community health through targeted initiatives in primary care clinics Dr. Brian Garvey, OHSU, USA
09.30-10.00		S5: Neoadjuvant therapy for rectal cancer Tawan Chaipuwannart, MD Chiangrai prachanukroh Hospital	S6: Global health education and collaboration Dr. Mary Chang UT Southwestern Medical Center, USA
10.00-10.30		Coffee break	S7: How to become excellent in primary care Dr. Brian Garvey, OHSU, USA
			Coffee break (served in the conference room)
10.30-11.00		S8: Endoscopic management in colonic polyp Panya Thaweeworades Klang Hospital	S9: Health needs of the elderly in Thailand and Home Healthcare in Thailand Prof. Prasert Assantachai
11.00-11.30		S10: Colorectal screening Baramee Boonlert, MD Lamphun Hospital	S11: Healthcare for the elderly in the US Dr. Lesca Hadley, UT Southwestern Medical Center, USA
11.30-12.00		S12: Malignant colorectal obstruction Worawit Aimimanan, MD Nan Hospital	S13: Healthcare for the elderly in Japan Dr. Kohta Oyama, Kumamoto Kenhoku Hospital, Japan

12.00-13.00		Luncheon Symposium: Mae Fah Luang Medical Center Innovation: Innovate with Young Innovators, Mae Fah Luang Medical center Hospital Team	Luncheon Symposium: Mae Fah Luang Medical Center Innovation: Innovate with Young Innovators, Thai - Chinese Traditional Medicine Hospital Team
13.00-13.30	<p>Introduction: Full endoscopic cervical and thoracic spine surgery</p> <p>Cadaveric workshop: Endoscopic spine surgery: cervical and thoracic</p>	S14: Minimally invasive colon cancer surgery Estin Yang, MD, OHSU, USA	<p>Academic forum: Crisis and health effects of small dust particle (PM2.5) in Chiang Rai province</p> <ul style="list-style-type: none"> • Worarat Imsanguan, MD (Department of Pulmonary Medicine, Chiangrai prachanukroh Hospital) • Assist.Prof.Dr. Nion Sirimongkonlertkul (Faculty of Engineering, Rajamongala University of Technology Lanna, Chiang Rai) • Dr.Weerayuth Siriratuengsuk (School of Health Science, MFU) • Weerachat Kittirattanapaiboon, MD (Biodegradable Packaging for Environment Public Company Limited) • Modurator: Dr. Nichan Singhaputagan (School of Social Innovation, MFU) <p>Coffee break (served in the conference room)</p>
13.30-14.00		S15: Enhanced recovery after surgery Estin Yang, MD, OHSU, USA	
14.00-14.30		Coffee break	
14.30-15.00		S16: Update in oncologic immunology Prof.Seiji Okada, Kumamoto U, Japan	
15.00-15.30		S17: Application of modification-specific proteomics in cancer research Dr. Churat Weeraphan Chulabhorn Research Institute	
15.30-16.00		S18: Recent advances in medical research & innovation Prof.Seiji Okada, Kumamoto U, Japan	
17.30-21.00	Congress Dinner (green grass yard in front of the building)		

Main Conference Day 3				
Friday, 15 December 2023 (08.00 AM - 04.00 PM)				
Time	MFU CaST Center (4 th Floor, Room 416)	15 th Floor, Room 1517 Research Presentation	15 th Floor, Room 1518 Surgery Sessions: MIS & ODS	15 th Floor, Room 1519-1520
08.30-09.00	Registration		Registration	Digital Health Transformation and Nursing Practice (page f)
09.00-09.30	Introduction: Cervical pedicle screws, lumbar and thoracic pedicle screws		S20: Physiologic change during laparoscopic surgery <i>Kiattikun Thienthong, MD, MFU</i>	
09.30-10.00			S22: Laparoscopic cholecystectomy in one day surgery <i>Phichai Phongmanjit, MD, MFU</i>	
10.00-10.30			Coffee break	
10.30-11.00			S24: Laparoscopic appendectomy <i>Chanatip Pramvichai, MD, MFU</i>	
11.00-11.30	Cadaveric workshop: Cervical pedicle screws	Research Contest	S26: Transoral endoscopic thyroidectomy vestibular approach <i>Athiwut Borvornwattanavanich, MD</i> Charoenkrung pracharak Hospital	
11.30-12.00			S28: Laparoscopic gastrectomy <i>Shido Koji, MD</i> Kyushu University	
12.00-13.00	Lunch break		Luncheon Symposium: Local Innovator to Global Innovation: Sharing Experience <i>Asst. Prof. Arnon Jumlongkul, MD</i> School of Medicine, Mae Fah Luang University	
13.00-13.30	Cadaveric workshop: Lumbar and thoracic pedicle screws	Poster Viewing (Hall in front of the meeting room)	S30: Pre-operative evaluation for one day surgery <i>Thanasarn Amponnawarat, MD, MFU</i>	
13.30-14.00			S32: One day surgery, move to the future <i>Vibul Phantabodikorn, MD</i> Paholpolpayuhasena Hospital	
14.00-14.30		Coffee break		
14.30-15.00			S34: One day surgery in real practice <i>Thananthorn phakharatkun</i> Lamphun Hospital	
15.00-15.30			S36: Jehovah's Witnesses - The Medical and Ethical Challenge <i>Mr. Thammanoon Limchiracharat</i>	
15.30-16.00		Research award announcement and Closing ceremony		

Main Conference Day 3 Friday, 15 December 2023 (08.00 AM _ 04.00 PM)	
Time	15th Floor, Room 1519-1520 Digital Health Transformation and Nursing Practice
08.00-08.30	Registration
08.30-09.30	S19. Direction and Future of Thai health care Clinical Prof. Emeritus Udom Kachintorn, MD
09.30-10.30	S21. Patient Data Protection Act (PDPA) and patient care in digital era Witoon Treesoontornrat, MD, Judge
10.30-11.30	S23. Wound care, new horizons Pitawan Rachata, MD, MFU and Apirag Chuangsuwanich, MD, MFU
11.30-12.15	S25. Medical Device associated pressure injuries. How to prevent it Pitawan Rachata, MD and Punyanuch Jeemali, ET, RN, MFU
12.15-13.00	Luncheon Symposium
13.00-13.30	S26. Digital transforming in nursing Prachid Sarataphan, ET, RN, MFU
13.30-13.50	S27. Virtual care in patients with chronic wound Yuwadee Kammon, ET, RN, MFU
13.50-14.10	S29. Telenursing and patient care with PCN and retained urinary catheter Kanyapak Khamfu and Chanikan Thangintawiwat, RN, MFU
14.10-14.30	S31. Home ward care for ODS. Make it simple by smart device Kesinee Vimolwattanasar, Nutthakritta Sittisombat, RN, MFU
14.30-14.50	S33. Outreach program for breast cancer screening program Sirinporn Phuprasert and Suvimon Yarna, RN, MFU
14.50-15.10	S35. Virtual care after spine surgery Jiraporn Khamta, RN, MFU and Weethima Nanbancha, PT, MFU
15.10-15.30	S37. Telenursing care for cancer patients undergoing oral chemotherapy Phanida Kaewdee and Atcharapan Khamsaen, RN, MFU
15.30-16.00	Research award announcement and Closing ceremony

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Plenary Lecture

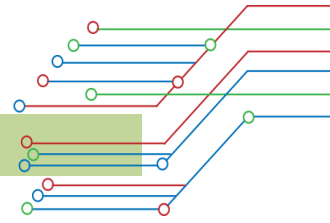
**Professor Emeritus Somsri Pausawasdi, M.D.
President, The Medical Council of Thailand**

Topic: The Evolution of Thai Medicine: Past Present and Future

My presentation will summarize the picture of "The Evolution of Thai Medicine: Past Present and Future" as following;

- * Medical development from the past to the present in every reign of the Chakri Dynasty.
- * Changes of medical trust in Thai society. Term of faith changes from doctor to medical provider and from patient to service recipient.
- * The modern world changes swiftly with high technology, also with the Thai medical development.
- * The role of the Thai Medical Council at the moment.
- * The future of the medical world Comparing the opinions and views of the World Health Organization (WHO). How does Thai medical development go in considering to our culture?
- ** Conclusion: From the reasons and factors mentioned above, the Thai medical development concerning both external factors and internal factors. But the significant is the quality of medical services and the quality of medical team. The professional success lies in the work life balance of both work and family. For this lecture, my emphasis will be on understanding the doctor's context in terms of work management, people management and family management. As a final point, I will tell my personal experiences as well, please stay tuned following this presentation.

Surgery Session



Dr. Panat Tipsuwannakul, M.D.

Department of Colorectal surgery, Police General Hospital

Topic: Current Management in Colorectal Cancer

Colorectal cancer is the third most common cancer worldwide, accounting for approximately 10% of all cancer cases and is the second leading cause of cancer-related deaths. A large proportion of colorectal cancer incidence and mortality is preventable through the receipt of regular screening, surveillance, and high-quality treatment. The prognosis for colorectal cancer varies depending on the stage at diagnosis. Early-stage cancers have higher survival rates than advanced-stage. Timely diagnosis, appropriate treatment, and regular follow-up care are important for improving survival rates and quality of life. In the past, treatment of colorectal cancer was surgery. However, with the advancement of medical knowledge and technology, more and more treatment modalities have been recognized and surgery is not the only way to cure colorectal cancer anymore. Discovery of chemotherapy has improved survival rate over time. The understanding of radiation effect to colorectal cancer also increase the chance of cure and maintain quality of life for the patients. Targeted and immunotherapy also play the major roles in recent guidelines. Although there are a lot of treatment available, not all patients are the same and strategy for treating colorectal cancer should be individually discussed. The tailor-made treatment with combination of these modalities is now the current management of colorectal cancer.



Topic: Endoscopic Management in Colonic Polyp

Most colorectal cancers arise from precancerous polyps. The most important step is gathering important information by endoscopic assessment for management decisions. Every polyp should be evaluated by its size, morphology, and histological characterization.

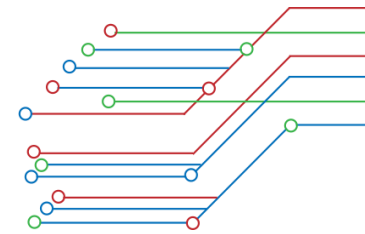
Endoscopic management of colorectal polyps

According to American College of Gastroenterology (AGA), European Society of Gastrointestinal Endoscopy (ESGE), and Japanese Society of Gastroenterology (JSGE) guidelines,

- Pedunculated polyps
- Most can be managed with hot snare polypectomy (HSP). For larger lesions (head size ≥ 20 mm or stalk ≥ 5 mm), endoscopic clips / endoloop may be used. The ESGE further recommended addition of adrenaline for stalk ≥ 10 mm in diameter.
- Sessile lesions
- Smaller polyps (< 10 mm)
 - Diminutive size (≤ 5 mm): The AGA/ESGE recommend endoscopic resection of all detected adenomas regardless of size. Cold snare polypectomy (CSP) is recommended. Cold biopsy forceps indicated only for lesions ≤ 3 mm. However, follow-up is also acceptable by JSGE for polypoid adenoma ≤ 5 mm.
 - Small size (6-9 mm): HSP has commonly been utilized, CSP is also acceptable with a weak recommendation.
 - For flat / depressed lesions and those suspected carcinoma, EMR should be performed regardless of size.
- Polyps size ≥ 10 mm
 - Without suspected invasion
 - Intermediate polyps (10-19 mm): HSP can be considered, however EMR is favored.
 - Large polyps (≥ 20 mm): EMR remains the treatment of choice.
 - En bloc resection should be performed, piecemeal EMR is also acceptable. However, local recurrence is high.
 - Suspected superficial submucosal invasion (Kudo Vi)
 - Polyps < 20 mm: En bloc resection with EMR. Recent literatures suggested underwater EMR (UEMR) for better en bloc resection rate and lower complication.
 - Large polyps (≥ 20 mm): Recommend ESD.

- Suspected deep submucosal invasion (Kudo Vn or NICE 3)
 - Surgical resection is recommended.

Baramee Boonlert, M.D.
Surgery Department, Lamphun Hospital

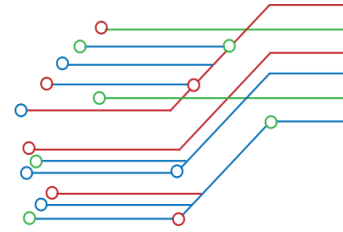


Topic: Colorectal Screening

Colorectal cancer is a common cancer. It is the third most common cancer in males after liver and bile duct cancer and lung cancer, and the second most common cancer in females after breast cancer. Colorectal cancer is a disease that is a major problem, which is the cause of death of the world's population and in Thailand Risk factors for developing colorectal cancer include: Personal factors: gender, age, and having a family history of cancer. Healthy behaviors, consumption of pork, beef, and high-fat foods, drinking alcohol, smoking, having a BMI above the standard, and regularly consuming grilled, charred, and smoked foods are associated with the development of colon cancer. Early stages of colorectal cancer often have no symptoms. The symptoms of colorectal cancer include: Blood in the stool Constipation alternating with diarrhea The stool becomes smaller. Detecting cancer in the early stages It will make the prognosis good in terms of treatment and good treatment results. There are several methods for screening for colon cancer, such as Testing for latent blood in the stool (Fecal Immunochemical Test) Colonoscopy, Flexible Sigmoidoscopy, Computed Tomography Colonoscopy

Fecal Immunochemical Test is a test for detecting latent blood in the stool based on the principle of a reaction between human antibodies specific to globin, albumin in the blood using the FIT test cut of value 100ng/ml, which is specific to human blood cells without interference food Including specific to blood coming out of the lower gastrointestinal tract. One of the causes of detecting latent blood in the stool is colorectal cancer. After detecting latent blood in the stool, a colonoscopy will be performed to look for pathology in the large intestine. Hidden blood detected on the FIT test has many causes, such as hemorrhoids outpouching of colonic wall (Diverticulosis), abnormal growth of blood vessels in the intestines (Angiodysplasia), colon polyps. Detection of colon polyps (Polyp) is associated with the development of cancer. Risk factors include: Degree of dysplasia, polyp type, and polyp size when polyps are detected by colonoscopy. All of the polyps will be removed to reduce the risk that the polyps will develop into metastatic cancer in the future.

Worawit Aimimarnant, M.D.
Nan Hospital



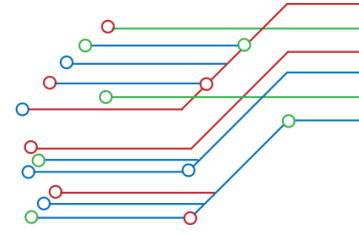
Topic: Malignant Colorectal Obstruction

Obstruction and perforation due to colorectal cancer represent challenging matters in terms of diagnosis, life-saving strategies, obstruction resolution and oncologic challenge. CT scan is the best imaging technique to evaluate large bowel obstruction and perforation. For obstructive left colon carcinoma (OLCC), self-expandable metallic stent (SEMS), when available, offers interesting advantages as compared to emergency surgery; however, the positioning of SEMS for surgically treatable causes carries some long-term oncologic disadvantages, which are still under analysis. The current guidelines do not state SEMS decompression as a bridge to surgery as the treatment of choice in a potentially curable disease but consider it only as an alternative to emergency surgery in patients with an increased risk of perioperative morbidity and mortality. In the context of emergency surgery, resection, and primary anastomosis (RPA) is preferable to Hartmann's procedure, whenever the characteristics of the patient and the surgeon are permissive. Right-sided loop colostomy is preferable in rectal cancer when preoperative therapies are predicted. Total colectomy is not preferred to segmental colectomy in the absence of impending perforation in the cecum, evidence of bowel ischemia, or synchronous right colonic cancers.

With regards to the treatment of obstructive right colon carcinoma (ORCC), right colectomy represents the procedure of choice; alternatives, such as internal bypass and loop ileostomy, are of limited value.

Clinical scenarios in the case of perforation might be dramatic, especially in case of free fecal peritonitis. The importance of an appropriate balance between life-saving surgical procedures and respect of oncologic caveats must be stressed. In selected cases, a damage control approach may be required.

Medical treatments including appropriate fluid resuscitation, early antibiotic treatment, and management of co-existing medical conditions according to international guidelines must be delivered to all patients at presentation.

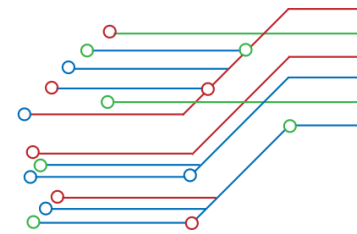


Dr. Mary Chang

**School of Medicine, University of Texas at
Southwestern, Dallas, Texas, USA**

Topic: Global Health Education and Collaboration

Interest in global health opportunities in academic institutions is growing. International trips are often impactful for the trainees and less so for the receiving institution. The potential for collaborations exists for faculty and trainee exchange for research, clinical, and educational activities. Thoughtful partnerships are important to ensure long-term impact, sustainability, and conservation of resources. Collaborations should consider the Working Group on Ethics Guidelines for Global Health Training (WEIGHT) guidelines during discussions to ensure both partners benefit from long-term exchanges. The WEIGHT guidelines provide recommendations and considerations for senders, hosts, trainees, mentors, sponsors, and recipients. Goals, expectations, and responsibilities should be defined in discussions.

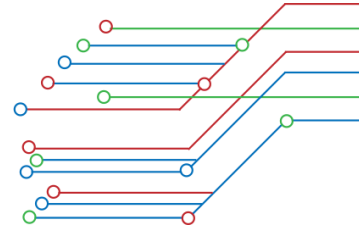


Estin Yang, M.D.
Oregon Health & Science University (OHSU), USA

Topic: Minimally Invasive Colon Cancer Surgery

Minimally invasive surgery is the standard of care for the majority of elective colon surgeries. Its safety has been shown for both benign and malignant pathologies, with improved patient outcomes compared to traditional open approaches. Minimally invasive approaches have been shown to provide excellent oncologic outcomes for colon and rectal cancers. While open approaches are often used in emergency settings, laparoscopic surgery is a feasible option with improved patient outcomes, with better oncologic resections. Robotic surgery has gained popularity and is a burgeoning area of technologic innovation for minimally invasive surgery. Its popularity is partially due to the improved ergonomics of working in difficult spaces. Research has often suggested no significant benefit for robotic surgery versus traditional laparoscopy for rectal cancer patients, both in regards to cancer-specific outcomes and surgical morbidity.

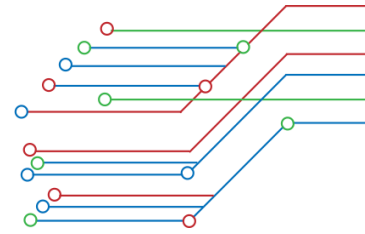
Estin Yang, M.D.
Oregon Health & Science University (OHSU), USA



Topic: Enhanced Recovery After Surgery

Enhanced recovery protocols have gained traction over the last ten years to standardize and improve care for surgical patients. Much of this work was developed for colorectal surgical patients, as these patients often had long hospital stays and high infection rates. The American Society of Colon and Rectal Surgeons and the Society of American Gastrointestinal and Endoscopic Surgeons developed guidelines for a comprehensive enhanced recovery after surgery (ERAS) protocol for patients undergoing colon surgeries. A new update to these guidelines was published in early 2023. While these guidelines have been shown to improve many outcomes for colon surgery patients, their adoption in the real world faces challenges with variable outcomes. This talk reviews the major components of the updated ERAS protocol, challenges in the real world, ERAS research in Thailand, and a case study of program implementation in a rural community hospital.

Professor Seiji Okada, M.D., Ph.D.
Kumamoto University, Japan



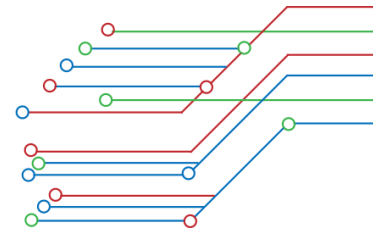
Topic: Cancer Immunotherapy: Current Status and Next Generation

Cancer immunotherapy is a cancer treatment that acts on the immune system in the patient's body and is attracting attention as the fourth treatment method following surgery, radiation therapy, and chemotherapy. Nonspecific immunostimulatory therapies previously used were rarely effective, but immunotherapies against various targets have been developed in recent years, and their effectiveness in treating refractory tumors that have been difficult to treat has been confirmed. Immunotherapy is an innovative treatment that dynamically modulates the immune system to attack cancer cells in multiple targets and directions.

The use of monoclonal antibodies (mAbs) for cancer therapy has achieved considerable success in recent years. Initial antibody therapies targeted tumor cells themselves or tumor microenvironments such as CD20, HER2 or VEGF. After the success of naïve Ab therapy, immunoconjugates such as radiolabeled Ab, Ab-drug conjugate are designed and in clinical use. BiTE (Bi-specific T-cell engaging antibody) is constructed of 2 single-chain variable fragments (scFv) and can bind both tumor cells and T-cells. CD19-CD3 BiTE is now approved for refractory B cell acute leukemia. The discovery of immune checkpoint proteins such as PD-1/PDL-1 and CTLA-4 represents a significant breakthrough in the field of cancer immunotherapy. PD-1, PDL-1 and CTLA-4 inhibitors (antibodies) are now in clinical use for refractory solid tumors (lung cancer, melanoma, etc.). Chimeric antigen receptor (CAR)-T cells are genetically modified and expanded to target the specific molecule of cancers. CAR-T has achieved inspiring outcomes in patients with refractory B cell malignancies and solid tumors.

These novel immunotherapies are still under development and have the risk of severe side effects. However, while there are challenges, novel strategies and potential solutions may provide more effective and safer immunotherapies.

Churat Weeraphan, Ph.D.
Chulabhorn Research Institute

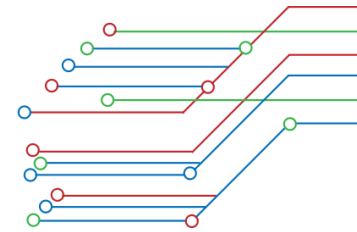


Topic: Application of Modification-Specific Proteomics in Cancer Research

Protein posttranslational modification (PTM) is an important mechanism to enhance tremendous diversity, complexity and heterogeneity of protein species in organisms. PTM of proteins allows cells to regulate protein functions, transduce signals and respond to perturbations. The aberrant regulation of PTM dynamics is therefore associated with the onset of cancer progression and cancer development. This presentation focuses on PTM of protein and its application in cancer research using high-throughput proteomic techniques. Mass spectrometry-based label-free quantitative proteomics have been applied to study the dynamics of modifications in cancer cell lines, tissues and biofluids of cancer patients. Using this approach, we have observed the aberrant levels of protein molecules containing PTM associated with the development of colon, breast and bile duct cancer. These findings hold promise for improved diagnostic approaches in cancer patients.

Keywords: protein posttranslational modification, phosphorylation, O-GlcNAcylation, tissue microarrays, plasma/serum, extracellular vesicles

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Kumamoto University, Japan



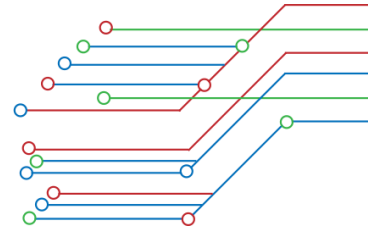
Topic: Application of Patient-Derived Xenografts (PDX) Model for Precision Cancer Medicine

Patient-derived xenografts (PDX) are the in vivo model of human cancer created by implanting patients' primary tumors into highly immunodeficient mice. Since PDX conserve the original tumor characteristics such as heterogeneous histology, clinical biomolecular signatures, malignant phenotypes and genotypes, tumor architecture, and tumor vasculature, it has been widely used for evaluating drugs and personalized medicine studies. PDX technology leads to breakthroughs with the introduction of novel, highly immunodeficient mice such as NOG (NOD/Scid/IL2Rγnull) and NSG (NOD/Scid/IL2Rγnull) mice. Success rates differ with tumor origin: gastrointestinal tumors acquire a higher engraftment rate, while the rate is lower for breast cancers. Subcutaneous implantation is a standard method for PDX, and renal capsule or orthotopic implantation improves the efficiency. PDX mice with human hematopoietic and immune systems (humanized PDX) are getting attention as powerful tools for the analysis of tumor-immune system interaction and evaluation of immunotherapy response. PDX biobank equipped with patients' clinical data, gene-expression patterns, mutational statuses, tumor tissue architects, and drug responsiveness will be an authoritative resource for developing specific tumor biomarkers for chemotherapeutic predictions, creating individualized therapy, and establishing precise cancer medicine. Several large-scale biobanks of PDX have been established in Western countries, however; the establishment of rare tumors such as soft tissue and bone tumors, cholangiocarcinoma, and oral cancers are relatively delayed due to fewer patient numbers, and being out of focus by pharmaceutical companies. I report our attempt to establish PDX and PDX biobank of rare tumors by a single institute. We used BALB/c Rag-2/Jak3 double deficient (BRJ) mice and got relatively high efficiency to establish PDX of cholangiocarcinoma, oral cancer, and soft tissue and bone tumors. It is important to establish a nationwide PDX biobank in Asian countries and conduct intensive collaboration for developing precision cancer medicine for Asian people.

Reference:

1. Vaeteewoottacharn K, et al. Establishment of Highly Transplantable Cholangiocarcinoma Cell Lines from a Patient-Derived Xenograft Mouse Model. *Cells*. 3;8(5):496, 2019 PMID: 31126020
2. Okada S, et al. Application of Highly Immunocompromised Mice for the Establishment of Patient-Derived Xenograft (PDX) Models. *Cells*. 13;8(8):889, 2019 PMID: 31412684
3. Okada S, et al. Establishment of a Patient-Derived Tumor Xenograft Model and Application for Precision Cancer Medicine. *Chem Pharm Bull (Tokyo)*. 66(3):225-230, 2018. PMID: 29491256

Phichai Phongmanjit, M.D.
School of Medicine, Mae Fah Luang University



Topic: Laparoscopic Cholecystectomy in One Day Surgery

This article traces the historical and contemporary evolution of laparoscopic cholecystectomy within the context of One Day Surgery (ODS). Beginning with early gallbladder procedures predating 1880, including abscess drainage, gallstone removal, and cholecystic fistula creation, we embark on a historical journey. In 1882, Carl Langebuch performed the first cholecystectomy, marking the dawn of modern gallbladder surgery. The transformative moment arrived in 1985 when Prof. Dr. Erich Mühe conducted the inaugural laparoscopic cholecystectomy, initially met with skepticism. By 1992, this technique was lauded as one of the greatest achievements in German medical history.

Prior to 1991, open cholecystectomy was the standard, entailing longer hospital stays. By 2014, laparoscopic cholecystectomy had become the gold standard for treating symptomatic gallstones, with 92% of cholecystectomies being laparoscopic as of 2023, and over 1.2 million performed annually in the United States.

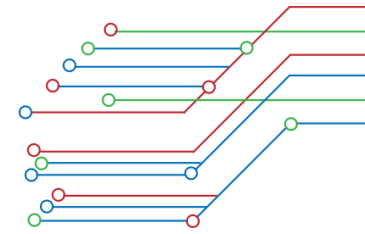
The advantages of laparoscopic cholecystectomy encompass reduced postoperative pain, improved cosmetic outcomes, shorter hospital stays, and decreased work disability. The emergence of ambulatory laparoscopic cholecystectomy in 1989 demonstrated its feasibility, with a low readmission rate and minimal complications.

Meta-analyses comparing ambulatory and inpatient laparoscopic cholecystectomy indicated comparable complication and conversion rates. Moreover, cost-effectiveness studies underscored the economic advantages of ambulatory procedures, with an 11% reduction in average hospital costs per patient.

Over the years, the learning curve for ambulatory laparoscopic cholecystectomy has led to an impressive increase in the percentage of ambulatory procedures, rising from 22% to 90% within four years.

This article underscores the evolution and prominence of laparoscopic cholecystectomy in the ODS setting, emphasizing its pivotal role in modern gallbladder surgery.

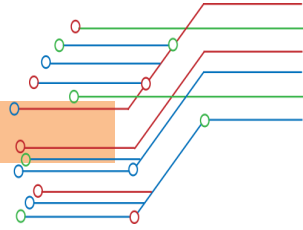
Associate Professor Koji Shindo, M.D., Ph.D.
Kyushu University, Japan



Topic: A Strategy to Achieve the Best Port Placement Using 3D CT Imaging in Laparoscopic Gastrectomy

Laparoscopic gastrectomy is widely spreading in all over the world due to its less invasiveness. Each institution has its own strategy for safe laparoscopic operation. Basically, 1. Outermost layer-oriented surgery, 2. Approach to left gastric artery, 3. Approach to infra-pyloric legion from which side of the patient in lymphadenectomy are the important points. To achieve the safe and adequate lymphadenectomy in laparoscopic gastrectomy, the optimal port location is very important because the fixed axis may interfere the procedure and causes unexpected bleeding or post-operative complication such as pancreatic fistula. Regional lymph nodes are located around the pancreas rather than around the stomach, so the location of pancreas in each individual patient must be confirmed before surgery. We obtain enhanced thin-sliced CT scan with 3D imaging using VINCENT(FUJI)® prior to laparoscopic gastrectomy and measure the length from navel (camera port) to the supra pancreatic area, and right gastroepiploic artery. In our analysis, the range of the length from navel to supra pancreatic areas, and also right gastroepiploic artery were very wide (66.4-155.9 mm, and 19.3-133.4 mm, respectively). In reference to the patient's own anatomy, we expect the optimal position of the ports. Herein we present a strategy to achieve the best port placement using 3D CT imaging for safe and adequate lymphadenectomy in laparoscopic gastrectomy.

Community and Elderly Health Care Session



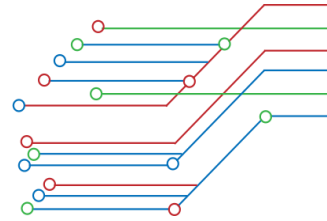
Estin Yang, M.D.

Oregon Health & Science University (OHSU), USA

Topic: Partnering with Community Physicians to Improve Regional Care

Patients in rural communities face numerous barriers to receiving excellent surgical care. Rural communities often have fewer resources and specialists, and rural patients are often older, sicker, and have fewer resources. Although studies have demonstrated better outcomes in higher volume centers, many patients prefer to stay local for surgical care if possible. The state of Oregon has a large rural population, with an aging surgical workforce. In the 1990s, Oregon Health & Science University recognized the need to support this workforce and established a unique surgery training site for residents in Grants Pass, Oregon. A year-long surgery rotation was created to help train future surgeons in rural settings, and to better prepare them for rural practice. For twenty years, residents who have gone through this program have taken surgical positions in rural communities, over time strengthening the rural surgery workforce. While this program was designed to build up the surgical workforce for the future, the ongoing partnership in Grants Pass has improved the quality of care for these rural patients in several ways. The community practitioners are kept up to date on surgical innovation and are able to keep more specialized care local. The close relationship with university partners allows a cohesive care team for patients who require care in both sites. University partners then have a better understanding of the resources available in the community and can offer more individualized care. These lessons can be generalized to medical centers with a large rural patient population, to extend the reach of high quality, university-level care to rural patients.

**Associate Professor Brian Garvey, M.D., M.P.H.
Oregon Health & Science University (OHSU), USA**



Topic: The Role of Improvement Science in Addressing Community Health Through Targeted Initiatives in Primary Care Clinics

Despite significant advancements in medical technology and research, several countries, particularly the United States, face a disconnect between high healthcare expenditures and suboptimal population health outcomes. This presentation advocates for the adoption of improvement science as a key mechanism to bridge this gap.

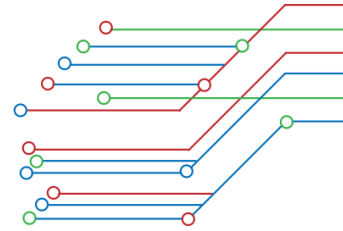
Examining two illustrative case examples, the transformative potential of improvement science is highlighted. In California, a large-scale intervention addressing maternal mortality showcased the scalability and efficacy of improvement science methodologies. Utilizing frameworks like the Plan-Do-Study-Act cycle, this initiative successfully reduced maternal mortality rates, demonstrating the applicability of improvement science to major public health challenges.

The second case, set in a rural health clinic in Oregon, focused on improving lead screening rates through tailored improvement science principles. This localized initiative underscored the versatility of improvement science, proving its effectiveness even in resource-constrained environments.

These cases serve as compelling illustrations of improvement science's capacity to instigate positive change in primary care. Furthermore, this commentary links the use of improvement science to the broader pursuit of the Quadruple Aim—enhancing patient experience, improving population health, reducing costs, and enhancing healthcare provider well-being.

The narrative emphasizes that improvement science is not merely a methodology but a transformative approach to address complex healthcare challenges. By delving into these case examples, the dynamic interplay between improvement science, primary care, and population health is illuminated, advocating for its integration as an indispensable strategy to achieve holistic healthcare goals.

**Associate Professor Brian Garvey, M.D., M.P.H.
Oregon Health & Science University (OHSU), USA**



Topic: How to Become Excellent in Primary Care

This presentation delves into the pursuit of excellence in primary care, tracing its historical origins and emphasizing core principles that underpin its effectiveness. The foundations of primary care, rooted in the seminal work of pioneers like Barbara Starfield, highlight the enduring principles of accessibility, continuity, comprehensiveness, coordination, and patient or community centeredness. Understanding and embodying these principles are pivotal for clinicians striving to deliver high-quality primary care.

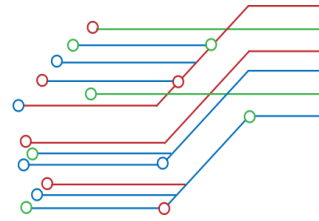
To propel primary care into a realm of excellence, evidence-based models, such as Thomas Bodenheimer's Building Blocks for Primary Care Reform, serve as guiding frameworks. These models advocate for team-based care, enhanced access, and proactive management of chronic conditions. Implementation of such evidence-based strategies has demonstrated significant improvements in patient outcomes and satisfaction.

Proper funding emerges as a cornerstone for transforming primary care systems. Studies consistently demonstrate that strategic investments in primary care yield substantial savings, with several U.S. states mandating specific funding levels to fortify their primary care infrastructure. Adequate funding not only enhances accessibility but also ensures the sustainability of comprehensive and patient-centered care models.

Recruiting and nurturing medical students committed to primary care is also fundamental for the future of excellence in this field. By cultivating training programs that emphasize the multifaceted role of primary care, we can mold future leaders who are adept at navigating the evolving landscape of healthcare delivery.

In conclusion, achieving excellence in primary care requires a multifaceted approach, encompassing historical principles, evidence-based models, adequate funding, burnout mitigation, and a focus on cultivating the next generation of primary care leaders. This presentation aims to provide a comprehensive roadmap for clinicians and policymakers committed to elevating primary care to new heights of effectiveness and sustainability.

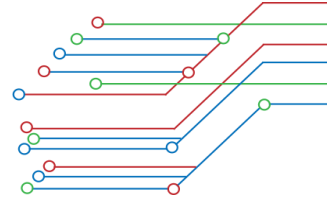
Professor Prasert Assantachai, M.D.
Faculty of Medicine Siriraj Hospital, Mahidol University



Topic: Health Needs of the Older People in Thailand and Home Healthcare in Thailand

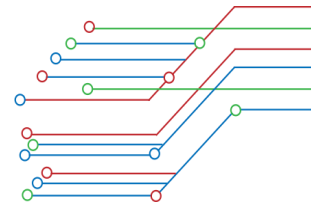
Thailand has already reached the definition of aged society, i.e., those aged 60 years old or more are over 20% of the total population. The even more alarming fact is more than one million of new older people will emerge annually over the next 20 years consecutively. All sectors, not just health system, of the country has to prepare to meet the needs of older people in four aspects. Firstly, re-designing the six-building blocks of health care system to encounter the unique features of older patients, namely, reduced body reserve, atypical presentation or geriatric syndrome, multiple pathology, polypharmacy and social adversity. The most urgent one is to upskill health care providers who have never learned or trained in geriatric medicine before to be able to appropriately manage common but silent disorders. Not just non-communicable diseases, recurrent falls, immobility, intellectual impairment, malnutrition, frailty and sarcopenia are good examples of commonly neglected disorders in current practice in many settings. Secondly, with the unique clinical features mentioned above, older patients are unlikely to recover fast enough to be back on their feet when being discharged from general hospitals. This post-acute period is critically important if the prolonged functional decline is not reversed in time, the disability and premature death are inevitably seen. Comprehensive intermediate care, not just for the 4 conditions previously addressed by the Thai health care systems, has never been set up in any facility and is urgently needed. Thirdly, the integration of social needs with health needs involves the upskilling and reskilling of both formal and informal caregivers, long-term care insurance, universal financial welfare, and age-friendly environment. Last but not least, the health promotion and disease prevention programs are the only way-out of the upcoming “Tsunami of Ageing” and hopefully achieve the UN Decade of Healthy Ageing 2021-2030 in Thailand.

Lesca Hadley, M.D.
UT Southwestern Medical Center, USA



Topic: Healthcare for the Elderly in the US

In the United States the number of older adults will increase rapidly over the next decade. Chronic noncommunicable diseases are common in older adults and they are the leading causes of death in the United States. Life expectancy varies depending on ethnicity and location. The Federal Government provides health insurance coverage for most older Americans; however, the cost of uncovered healthcare expenses, especially caregiving, continues to be a tremendous burden for patients and their families. The demand for Geriatric physicians greatly exceeds the demand for their service. In the United States Family Physicians provide most of the primary care for the elderly due to the lack of Geriatricians. More education is needed throughout the entire United States healthcare workforce to care for the growing elderly population.



Kohta Oyama M.D., Ph.D.
Kumamoto University, Japan
Medical Policy Division, Kumamoto Prefectural Government,
Japan

Topic: Healthcare for the Elderly in Japan

Japan has one of the highest life expectancies (male 81.05 years old, female 87.09 years old, 2022) and a rapidly aging population. The aging rate in Japan refers to the proportion of elderly individuals (over 65 years old) in the total population which is 28.8% in 2020. Japan has been experiencing a significant demographic shift towards an older population for several decades. This shift is primarily attributed to factors such as declining birth rates (1.34 per woman, 2020) and increasing life expectancies. This change eventually means that medical needs are increasing year by year. In this presentation, I would like to introduce some of the key features of Japanese healthcare system for the elderly through practical examples.

Universal Healthcare Coverage: Japan has a universal healthcare system that covers all citizens, including the elderly. The system is primarily funded through a combination of employer and individual contributions. The government also provides financial support to ensure that everyone has access to healthcare services.

Long-Term Care Insurance: Japan has a mandatory long-term care insurance system known as "Kaigo Hoken." This insurance program provides coverage for a range of long-term care services, including home care, assisted living, and nursing home care. It is designed to support elderly individuals who require assistance with activities of daily living.

The aging population in Japan presents several challenges, including healthcare costs, social security, and the workforce. The Japanese government is now facing to the most critical phase ever to implement various policies to address these challenges.

Academic forum: Crisis and health effects of small dust particle (PM2.5) in Chiang Rai province

Dr. Weerachat Kittirattanapaiboon

CEO, Biodegradable Packaging for Environment Public Company Limited.

Topic: Crisis and Health Effects from Small Dust (PM2.5), Chiang Rai Province.

- Biodegradable Packaging for Environment Public Company Limited (BPE) brand “Gracz”
- Single-use food packaging is taking a significant role on our natural environment – clogging and filling landfills, leaking into our oceans, and threatening ecosystems. Given this, there is a pressing need to explore alternatives to plastic food packaging.
- The burning of agriculture wastes from various agriculture operations giving rise to inevitable complications like PM 2.5 problems and the incineration of non-biodegradable waste like foam and plastics, which cause more air pollution that are hazardous to health.
- For Gracz, this was an opportunity to see whether its packaging materials, initially envisaged as an option for consumers to be exposed to fewer harmful chemicals in their food containers, could also help achieve less waste for the environment.
- After extensive research, bagasse (sugarcane pulp) wheat, water hyacinth, rice straw, pineapple fiber and other types of natural plant fiber was found to be well-suited in packaging while also being abundantly available in Thailand. In addition, this alternative’s quality, functionality, safety, and cost are far superior to other traditional, disposable packaging products.
- Therefore, the innovation that utilized agriculture waste to produce natural plant pulp containers not only help to eliminate PM 2.5 but also applying the BCG Economy principle in cycling from nature to nature and reducing agriculture waste burning problems.
- This approach will help generate more income back to the farmers and raise the country’s overall economy.
- Most importantly, we can stop leaving our burden on the world in the long run.
- Gracz is the food container that made from natural plant fibre and can decompose back into the natural environment through biodegradation within 45 days. The nature of this product and its ability to offer an alternative to packaging that can be reintroduced into the economy demonstrates a truly circular approach to resource use.

- To date, this product has positively impacted the following:
- Environment: No pollution, no toxicity, no chemicals nor any burdens are caused to the environment and helping to eliminate PM 2.5 as we use the waste instead of burning it.
- This product (Gracz), which is 100% compostable, will fertilize and go back to nature 100%.
- Employment: Extending work opportunities for the agricultural workforce in Thailand. This allows for job creation in the area, generating income for the local community.
- Health: Using natural plant fiber and materials makes containers and packaging products safer as they are free of substances that can cause cancer and other health hazard substances.
- “From nature back to nature is a key of our concept”.

Digital Health Transformation and Nursing Practice Session

Witoon Treesoontornrat, M.D.

Research Division of the Court of Appeal for Specialized Cases

Topic: Patient Data Protection Act (PDPA) and Patient Care in Digital Era

โดยที่พระราชบัญญัติคุ้มครองข้อมูลส่วนบุคคล พ.ศ. 2562 มีผลใช้บังคับตั้งแต่วันที่ 1 มิถุนายน 2565 สถานพยาบาลรัฐและสถานพยาบาลเอกชนทุกแห่งต้องอยู่ในบังคับแห่งกฎหมายนี้ ซึ่งกฎหมายดังกล่าวบัญญัติให้ข้อมูลสุขภาพของผู้ป่วยเป็นข้อมูลส่วนบุคคลอ่อนไหว กฎหมายจึงกำหนดอำนาจหน้าที่ของสถานพยาบาลทุกแห่งในการเก็บรวบรวม ใช้และเปิดเผยข้อมูลส่วนบุคคล กล่าวคือเวชระเบียน ใว้อย่างเคร่งครัด และยังกำหนดความรับผิดชอบตามกฎหมายหากมีการฝ่าฝืนหรือปฏิบัติไม่ถูกต้อง จึงเป็นความจำเป็นเร่งด่วนที่แพทย์และบุคลากรการแพทย์ทุกคน และผู้บริหารสถานพยาบาลทุกแห่งจะต้องเข้าใจและปฏิบัติตามที่กฎหมายบัญญัติไว้ แต่สาระแห่งกฎหมายดังกล่าวยังเป็นเรื่องใหม่และอาจจะยากต่อความเข้าใจและการปฏิบัติจริง โดยเฉพาะการแจ้งรายละเอียดเกี่ยวกับการเก็บรวบรวม ใช้ และเปิดเผยเวชระเบียนให้แก่ผู้ป่วยเจ้าของข้อมูลทราบ การจัดทำบันทึกการรักษามั่นคงปลอดภัยแห่งเวชระเบียน ระบบแจ้งเหตุละเมิดเวชระเบียน และการจัดทำบันทึกการกิจกรรมประมวลผล (ROPA) ตัวอย่างเช่น การจัดเก็บ ใช้ และเปิดเผยเวชระเบียนอิเล็กทรอนิกส์ต้องเป็นเช่นใด การติดตั้งกล้องวงจรปิดในบริเวณสถานพยาบาลต้องเป็นเช่นใด สิทธิของผู้ป่วยเจ้าของข้อมูลเวชระเบียนมีอย่างไรบ้าง การคุ้มครองข้อมูลเวชระเบียนมีมาตรฐานขั้นต่ำเช่นไร งานวิจัยนี้นำเสนอแนวคิด หลักการ และความเข้าใจพระราชบัญญัติคุ้มครองข้อมูลส่วนบุคคล พ.ศ. 2562 สู่การปฏิบัติจริงในมิติการแพทย์และสถานพยาบาลทุกแห่ง ทั้งนี้เพื่อป้องกันปัญหาการฟ้องร้องเป็นคดีความตามมา

พว.ยุวดี คำมอญ และ พว.ปุณยนุช จิမ်းลิ

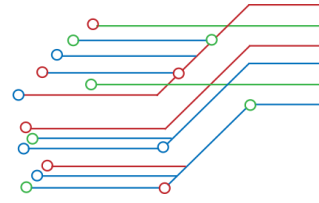
ฝ่ายการพยาบาล, โรงพยาบาลศูนย์การแพทย์ มหาวิทยาลัยแม่ฟ้าหลวง



Topic: Virtual Care in Patients with Chronic Wound

โครงการนี้เป็นการพัฒนาระบบบริการพยาบาลทางไกลในผู้ป่วยที่มีบาดแผลเรื้อรัง เช่น แผลเท้าเบาหวาน แผลกดทับ แผลที่ขาและเท้าจากหลอดเลือดดำเสื่อม มีวัตถุประสงค์เพื่อให้ผู้ป่วยและผู้ดูแลสามารถดูแลแผลที่บ้านได้อย่างถูกต้อง การหายของแผลดีขึ้น ลดภาวะแทรกซ้อนจากการทำแผล และลดอัตราการกลับมารักษาในโรงพยาบาลซ้ำ ดำเนินการระหว่างเดือนกันยายน ถึงเดือนพฤษภาคม 2566 โดยพยาบาลผู้เชี่ยวชาญด้านการดูแลบาดแผล ออสโตมีและควบคุมการซึบถ่ายไม่ได้ (ET Nurses) จัดทำแนวปฏิบัติในการบริการทางไกลแก่ผู้ป่วยที่มีบาดแผลเรื้อรังประกอบด้วย การให้ความรู้และฝึกปฏิบัติการทำแผลแก่ผู้ป่วย/ผู้ดูแลก่อนกลับบ้าน ติดตามและให้คำปรึกษาภายหลังจำหน่ายกลับบ้านโดยใช้ แอปพลิเคชัน DMS telemedicine มีผู้เข้าร่วมโครงการจำนวน 4 ราย ผลการดำเนินการพบว่า ผู้ป่วย/ผู้ดูแลมีความมั่นใจในการทำแผล 100% สามารถทำแผลที่บ้านได้อย่างถูกต้อง 100% แนวโน้มการหายของแผลที่ดีขึ้น 75% ไม่พบอัตราการเกิดภาวะแทรกซ้อนจากการทำแผล มีความพึงพอใจต่อการเข้าร่วมโครงการ 98% อย่างไรก็ตามผู้ป่วยและผู้ดูแลบางส่วนยังมีปัญหาด้านการใช้เทคโนโลยี และช่วงเวลาในการเข้ารับบริการ ดังนั้นการดำเนินการให้บริการพยาบาลทางไกลจึงต้องพิจารณาปัจจัยความสามารถในการใช้เทคโนโลยีและช่วงเวลาที่เหมาะสมกับวิถีชีวิตของผู้ป่วย/ผู้ดูแลด้วย ประโยชน์ที่คาดว่าจะได้รับจากโครงการนี้ คือ สามารถนำระบบไปพัฒนาบริการพยาบาลแก่ผู้ป่วยกลุ่มอื่นๆ เพื่อลดความวิตกกังวล ความเครียดต่อการดูแลรักษาตนเองที่บ้าน ผู้ป่วยได้รับการดูแลที่มีประสิทธิภาพอย่างต่อเนื่อง เพิ่มทางเลือกในการรักษา และลดค่าใช้จ่ายในการเดินทางมาโรงพยาบาล

พว.กัญญาภัค คำฟู และ พว.ชนิกานต์ ตั้งจินตวิวัฒน์
ฝ่ายการพยาบาล, โรงพยาบาลศูนย์การแพทย์ มหาวิทยาลัยแม่ฟ้าหลวง



Topic: Telenursing and Patient Care with PCN and Retained Urinary Catheter

ผู้ป่วยหลังผ่าตัดระบบทางเดินปัสสาวะที่ต้องคาสาย PCN หรือสายสวนปัสสาวะมีโอกาสเกิดการติดเชื้อในระบบทางเดินปัสสาวะ และกลับมารักษาซ้ำในโรงพยาบาล เพื่อติดตาม เฝ้าระวัง ให้คำแนะนำ และให้คำปรึกษาในการปฏิบัติตนเมื่อกลับบ้านของผู้ป่วยอย่างต่อเนื่อง หอผู้ป่วยสามัญรวมศัลยศาสตร์และออร์โธปีดิกส์ 9A จึงได้ดำเนินการพัฒนาระบบบริการการพยาบาลทางไกล(Tele-nursing) โดยดำเนินการให้ความรู้เกี่ยวกับการปฏิบัติตน การป้องกันภาวะแทรกซ้อนก่อนจำหน่ายทุกราย และติดตามอาการ ให้คำปรึกษาภายหลังจำหน่ายวันที่ 7 และ 14 โดยใช้แอปพลิเคชัน DMS telemedicine ระหว่างวันที่ 1 กันยายน - 30 พฤศจิกายน พ.ศ. 2566 มีผู้เข้าร่วมโครงการจำนวน 6 ราย ผลการดำเนินการพบว่า อุบัติการณ์การติดเชื้อในระบบทางเดินปัสสาวะในผู้ป่วยที่คาสาย PCN และได้รับการรักษาในโรงพยาบาลภายใน 28 วันหลังจำหน่ายจำนวน 1 ราย ผู้ป่วยมีความพึงพอใจต่อการเข้าร่วมโครงการร้อยละ 79.75 ปัญหาและอุปสรรคพบว่า ผู้ป่วยได้รับการติดตามครบถ้วนร้อยละ 71.42 เนื่องจากสัญญาณเครือข่ายอินเทอร์เน็ตไม่เสถียร ผู้ป่วยลบแอปพลิเคชัน และช่วงเวลานัดหมายคลาดเคลื่อน จึงควรเพิ่มคู่มือการใช้แอปพลิเคชัน เพิ่มความถี่ และระยะเวลาในการติดตาม ทั้งนี้สามารถขยายบริการพยาบาลทางไกลในกลุ่มผู้ป่วยที่มีความเสี่ยงต่อการกลับมารักษาซ้ำในโรงพยาบาลต่อไป

พว. ณัฐกฤตา สิทธิสมบัติ และ พว. เกศินี วิมลวรรณสาร

ฝ่ายการพยาบาล, โรงพยาบาลศูนย์การแพทย์ มหาวิทยาลัยแม่ฟ้าหลวง

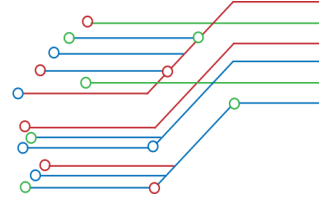


Topic: Home Ward Care for ODS: Make it Simple by Smart Device

ผู้ป่วยผ่าตัดแบบวันเดียวกลับ (One Day Surgery: ODS) จำเป็นต้องได้รับการประเมินเตรียมความพร้อมก่อนการผ่าตัดและติดตามอาการอย่างต่อเนื่องหลังผ่าตัดที่บ้าน เพื่อป้องกันการภาวะแทรกซ้อนจากการผ่าตัดและการระงับความรู้สึก สามารถกลับบ้านได้ตามกำหนดเวลา ซึ่งจากการดูแลผู้ป่วยยังพบปัญหาด้านการประเมินความพร้อมก่อนการผ่าตัด การติดตามเยี่ยมทางโทรศัพท์ที่ไม่สามารถประเมินอาการทั่วไป ผลผ่าตัด และสภาพแวดล้อมตามสภาพจริงของผู้ป่วยเมื่อกลับบ้านได้ เพื่อให้ผู้ป่วยได้รับการประเมินก่อนผ่าตัดและติดตามอาการหลังผ่าตัดที่มีประสิทธิภาพ จึงได้พัฒนารูปแบบการดูแลผู้ป่วยผ่านการบริการทางไกล ระยะเวลาดำเนินการระหว่างเดือนกันยายน 2565 ถึง เดือนพฤศจิกายน พ.ศ. 2566 โดยการใช้การประเมินความพร้อมผ่านช่องทางออนไลน์จากทีมวิสัญญี มีผู้จัดการพยาบาล (Nurse Manager) ให้คำแนะนำผู้ป่วยและผู้ดูแลเกี่ยวกับการปฏิบัติตัวก่อนและหลังผ่าตัด และติดตามประเมินอาการ ให้คำแนะนำ และคำปรึกษาปัญหาภายหลังผ่าตัด 24 48 และ 72 ชั่วโมงตามกำหนดผ่านระบบ DMS telemedicine ผลลัพธ์พบว่า ผู้ป่วยสามารถทำผ่าตัดและจำหน่ายได้ตามกำหนดเวลา ไม่เกิดภาวะแทรกซ้อน ลดความแออัดในโรงพยาบาล ลดจำนวนวันนอนโรงพยาบาล และมีความพึงพอใจในต่อการบริการร้อยละ 100 ทั้งนี้พบปัญหาการลืมนัดหมายเยี่ยมติดตามอาการ จึงได้แจ้งเตือนผู้รับบริการหรือผู้ดูแลก่อนการนัดหมายด้วยการโทรศัพท์หรือส่งข้อความเพิ่มเติม สำหรับในกลุ่มผู้สูงอายุที่มีข้อจำกัดด้านการใช้เทคโนโลยี ควรต้องมีการสื่อสารและติดตามอาการจากผู้ดูแลหลักร่วมด้วย

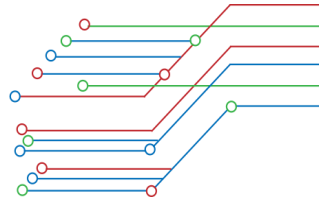
พว. สิริจันทร์พร ภูंपระเสริฐ และ พว. สุวิมล ยะมา

ฝ่ายการแพทย์, โรงพยาบาลศูนย์การแพทย์ มหาวิทยาลัยแม่ฟ้าหลวง



Topic: Outreach Program for Breast Cancer Screening

มะเร็งเต้านมเป็นสาเหตุการตายอันดับ 1 ของสตรีไทย แม้ว่าจะมีการตรวจเต้านมด้วยตนเองแต่ไม่
เป็นผลสำเร็จ ผู้ป่วยส่วนใหญ่มาพบแพทย์ในระยะมะเร็งลุกลาม เพื่อเพิ่มการเข้าถึงบริการการคัดกรองมะเร็ง
เต้านมในประชากรสตรีกลุ่มเสี่ยงและพัฒนากระบวนการจัดเก็บข้อมูลทางอิเล็กทรอนิกส์ในงานบริการสุขภาพ จึง
ได้จัดทำโครงการตรวจคัดกรองมะเร็งเต้านมในประชากรสตรีอายุตั้งแต่ 35 ปี ขึ้นไปในโรงพยาบาลส่งเสริม
สุขภาพตำบล (รพ.สต.) 4 แห่งได้แก่ ท่าสุด นางแล แม่ข้าวต้ม โละป่าห้า และเขตพื้นที่ห่างไกล 2 แห่งได้แก่
โรงพยาบาลแม่ฟ้าหลวง และสถานีอนามัยเฉลิมพระเกียรติดอยตุง ดำเนินการระหว่างเดือน มกราคม - ตุลาคม
2566 เก็บรวบรวมข้อมูลโดยใช้โปรแกรม IMED Out Unit บันทึกข้อมูลทั่วไป ปัจจัยเสี่ยง ผลการตรวจคัด
กรองด้วยการคลำเต้านม และการทำอัลตราซาวด์โดยแพทย์ผู้เชี่ยวชาญในกลุ่มที่ผลการคลำเต้านมผิดปกติ
ผลลัพธ์พบว่า รพ.สต.4 แห่งมีผู้เข้ารับการคัดกรองจำนวนทั้งหมด 846 ราย ได้รับการวินิจฉัยมะเร็งเต้านม 4
ราย (ร้อยละ 0.47) เขตพื้นที่ห่างไกล 2 แห่งมีผู้รับการคัดกรองจำนวนทั้งหมด 616 ราย ได้รับการวินิจฉัย
มะเร็งเต้านม 1 ราย (ร้อยละ 0.16) ปัญหาและอุปสรรคพบว่าต้องใช้อินเทอร์เน็ตขณะใช้งานโปรแกรมบันทึก
สำหรับการใช้โปรแกรมบันทึกข้อมูลมีความสะดวกรวดเร็ว ข้อมูลเป็นปัจจุบัน ลดความผิดพลาดในขั้นตอนการ
ระบุตัวตน สามารถเก็บและสำรองข้อมูลผู้รับบริการลงในฐานข้อมูลของคอมพิวเตอร์ ทำให้ผู้รับบริการได้รับ
การติดตามอย่างต่อเนื่องในงานบริการสุขภาพชุมชน จึงควรได้รับการพัฒนาและขยายผลในงานบริการด้าน
อื่นๆ ต่อไป



พว. จิราภรณ์ คำตา¹ และ วีรริมา นันทปัญญา²

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Topic: Virtual Care after Spine Surgery

ผู้ป่วยหลังผ่าตัดกระดูกสันหลังเป็นผู้ป่วยที่มีความซับซ้อนในการรักษา ผู้ป่วยกลุ่มนี้ต้องดูแลตนเองที่จำเพาะในหลายเรื่อง ทั้งการดูแลแผลผ่าตัด การปรับเปลี่ยนสภาพสิ่งแวดล้อมและการดำเนินชีวิต การใช้กายอุปกรณ์ หากวางแผนจำหน่ายไม่ครบถ้วนและไม่มีการติดตามต่อเนื่องหลังจำหน่ายจะส่งผลให้ผู้ป่วยดูแลตนเองไม่เหมาะสม วัตถุประสงค์ของโครงการเพื่อค้นหาปัญหา ติดตามผู้ป่วย และให้คำปรึกษาหลังกลับบ้าน ดำเนินการระหว่างเดือนกันยายน ถึง พฤศจิกายน 2566 โดยพยาบาลวิชาชีพ และนักกายภาพบำบัด มีเจ้าหน้าที่ให้คำแนะนำการใช้ระบบการพยาบาลทางไกล และให้ข้อมูลการปฏิบัติตัวก่อนกลับบ้าน และติดตามผ่านโปรแกรม DMS telemedicine หลังจำหน่าย 3 วัน โดยใช้ชุดคำถาม มีการประเมินสิ่งแวดล้อมเพื่อค้นหาปัญหา ติดตามผู้ป่วย และให้คำปรึกษาในการจัดการดูแลตนเอง ลดภาวะแทรกซ้อนและความเสี่ยงที่จะเกิดขึ้น ผลการดำเนินงานพบว่า ผู้เข้าร่วมโครงการ 6 ราย ไม่มีอัตราการ Re admit ด้วยโรคเดิม/อาการมากกว่าเดิมภายใน 28 วัน ผู้ป่วยตอบคำถามการดูแลแผลผ่าตัดและอาการผิดปกติที่ควรมาพบแพทย์ ก่อนนัดได้ถูกต้อง ร้อยละ 80 ผู้ป่วยสาธิตการสวมใส่อุปกรณ์ช่วยพยุงหลังและเดินด้วยเทคนิคที่ถูกต้อง ร้อยละ 100 ผู้ป่วยมีความพึงพอใจการเข้ารับบริการด้วยระบบ Tele nursing ในระดับดีมาก ร้อยละ 100 ปัญหาและอุปสรรคในการดำเนินงานพบ ผู้ป่วยสูงอายุมีข้อจำกัดด้านการใช้เทคโนโลยี 3 ราย ซึ่งได้ให้คำปรึกษาทางโทรศัพท์แทน แสดงให้เห็นว่าการพยาบาลทางไกลในผู้ป่วยหลังผ่าตัดกระดูกสันหลังสามารถเป็นแนวทางในการพัฒนาระบบติดตามหลังจำหน่ายในผู้ป่วยกลุ่มอื่นได้



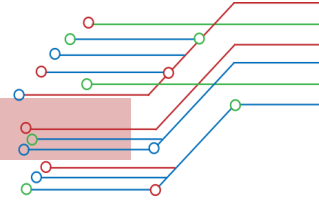
พว. ผาณิตา แก้วดี และ พว. อัจฉราพรรณ คำแสน

ฝ่ายการพยาบาล, โรงพยาบาลศูนย์การแพทย์ มหาวิทยาลัยแม่ฟ้าหลวง

Topic: Telenursing Care for Cancer Patients undergoing Oral Chemotherapy

จากการติดตามเยี่ยมผู้ป่วยมะเร็งที่ได้รับการรักษาด้วยยาเคมีบำบัดชนิดรับประทานที่บ้าน ยังพบปัญหาการรับประทานยาไม่ถูกต้องจำนวน 1 ราย เกิดอาการข้างเคียงหลังรับประทานยาเคมีบำบัดและหยุดยาเองจำนวน 3 ราย ส่งผลให้การรักษาไม่ต่อเนื่อง เพื่อติดตาม เฝ้าระวัง ป้องกันและให้คำปรึกษาเกี่ยวกับการจัดการอาการข้างเคียงจากการรับประทานยา จึงได้พัฒนาการพยาบาลทางไกลในผู้ป่วยมะเร็งที่รับประทานยาเคมีบำบัด capecitabine ที่บ้าน ดำเนินการระหว่างเดือนกันยายน - เดือนพฤศจิกายน พ.ศ. 2566 โดยผู้ป่วยทุกรายจะได้รับคำแนะนำการปฏิบัติตัวและสมุดคู่มือดูแลตัวเองต่อเนื่องที่บ้าน และติดตามอาการผู้ป่วยทุกวันที่ 7 และวันที่ 14 ของการรับประทานยา ผ่านแอปพลิเคชัน DMS Telemedicine ผลการดำเนินงานพบว่า ผู้เข้าร่วมโครงการจำนวน 6 ราย มีผู้ป่วยรับประทานยาผิดขนาด 1 ราย ซึ่งหน่วยงานได้จัดทำตารางรับประทานยาให้กับผู้ป่วยเพิ่มเติมและไม่พบการรับประทานยาผิดเมื่อติดตามซ้ำ เกิดอาการข้างเคียงจากการรับประทานยาเคมีบำบัด ได้แก่ เล็บสีคล้ำร่วมกับมีอาการเจ็บ แผลในช่องปาก ปวดท้อง 2 ราย และมีความพึงพอใจร้อยละ 100 ทั้งนี้พบปัญหาผู้ป่วยบางส่วนไม่มีโทรศัพท์มือถือและสัญญาณอินเทอร์เน็ต การใช้แอปพลิเคชันที่บ้าน และช่วงเวลานัดหมายไม่ตรงกัน จึงควรจัดทำคู่มือการใช้แอปพลิเคชันเพื่อให้ง่ายต่อการใช้งาน และใช้ช่องทางติดต่อสื่อสารอื่น ๆ ร่วมกันสำหรับผู้ป่วยที่มีข้อจำกัดการใช้เทคโนโลยี

Medical Innovation Session



Asst. Prof. Arnon Jumlongkul

School of medicine, Mae Fah Luang University

Forensic Medicine Unit, Mae Fah Luang University Medical Center Hospital

Topic: Local Innovator to Global Innovation: Sharing Experience

One of the major topics influencing our modern era is innovation. This session then discusses how to create international publications as well as innovations based on local concepts encountered during routine work. Many medical devices and research methods in relevant fields are covered, including “Robotic Autopsy Saw”, “Cadaveric Skull and Tissue Cutting Manipulator”, “Automated AMBU Ventilator With Negative Pressure Headbox and Transporting Capsule for COVID-19 Patient Transfer”, “Semi-Outdoor Filterless Air Purifier”, “Low-Cost Air Purifier Prototype Using a Ventilating Fan and Pump Against Haze Pollution”, “Water-Based Air Purifier With Ventilation Fan System”, “Correlation Between Relative Humidity and Particulate Matter During the Ongoing of Pandemic: A Systematic Review”, and “Innovation and Entrepreneurship in Dental Curriculum: From Practice to Creativity in the Face of Pandemic”. All of them are based on the speaker’s personal experience, in hopes that this class will inspire everyone to innovate in their own way.

Poster Presentation

Title: Potential Oncogenic and Immunosuppressive Roles of Multiple EGF-Like Domains 6 (MEGF6) in Colon Cancer: Insights from Bioinformatic Analysis

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Keywords: MEGF6, Colon cancer, Bioinformatics, Biomarker

Abstract:

Multiple Epidermal Growth Factor-Like Domains Protein 6 (MEGF6) is a high molecular weight protein featuring several EGF-like domains. While it has been demonstrated to promote metastasis and chemoresistance in colorectal cancer cells, its specific oncogenic and immunologic functions remain largely unexplored [1, 2]. In this study, we conducted a comprehensive bioinformatic analysis of publicly available datasets to gain novel insights into the potential role of MEGF6 in colon cancer development and its impact on the immune response. Differential expression of MEGF6 between colon adenocarcinoma (COAD) and normal tissues at mRNA and protein levels was analyzed through the Gene Expression Profiling Interactive Analysis 2 (GEPIA2) and the Human Protein Atlas (HPA) databases, respectively. Survival analysis was performed using the Kaplan-Meier (KM) plotter database. The functional enrichment analysis of MEGF6-correlated genes was conducted using the ShinyGO online tool. The correlation of MEGF6 expression and immunosuppressive molecules in COAD was analyzed using the Tumor and Immune System Interaction Database (TISIDB). Our data analysis revealed that both mRNA and protein expressions of MEGF6 were significantly higher in COAD tissues compared to normal tissues. High MEGF6 expression was associated with shorter overall survival in COAD patients. Additionally, genes correlated with MEGF6 were enriched in various biological processes related to cellular component organization, cell adhesion, and extracellular matrix interaction. Furthermore, the expression of MEGF6 demonstrated a significant correlation with the expression of immunosuppressive molecules, such as CTLA-4, PD-1, PD-L1, TGF- β , and IL-10. In conclusion, our findings suggest that MEGF6 may exert its oncogenic role by influencing cell and extracellular matrix interactions. Its overexpression may indicate immunosuppressive properties within the cancer microenvironment. MEGF6 may serve as a potential biomarker for predicting prognosis and therapeutic responses in colon cancer.

References

[1] Hu H, Wang M, Wang H, Liu Z, Guan X, Yang R, Huang R, Tang Q, Zou C, Wang G, Gao X. MEGF6 promotes the epithelial-to-mesenchymal transition via the TGF β /SMAD signaling pathway in colorectal cancer metastasis. Cellular Physiology and Biochemistry. 2018 ;46(5):1895-906.

[2] Mou Y, He N, Su M, Zhong Z, Ma J, Liu J, Cheng XA, Dai P. MiR-1254 and MEGF6 regulates oxaliplatin resistance in human colorectal cancer cells. American Journal of Translational Research. 2021;13(1):183.

Short Biography of presenting author

Dr. Siripat Aluksanasuwan currently serves as a lecturer at the School of Medicine, Mae Fah Luang University. He also leads the Cancer and Immunology Research Unit (CIRU) at the university. His research group focuses on a wide range of fields, including cancer, proteomics, immunology, infectious diseases, and the development of anti-cancer and immunomodulatory agents.

Title: Cytotoxic and Apoptosis-Inducing Effects of Effervescent Formula of *Curcuma longa L.* Extracts on Colorectal Cancer Cells

Authors: Artitaya Rongjumnong¹, Siripat Aluksanasuwan^{1,2}, Keerakarn Somsuan^{1,2}, Arunothai Wanta^{1,2}, Rawiwan Charoensup^{3,4}, Chanatip Pramvichai^{1,2} and Atthapan Morchang^{*,1,2}

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Keywords: Effervescent, Curcumin, Colorectal cancer, Cytotoxicity, Apoptosis

Abstract:

Colorectal cancer (CRC) is the fourth most common cancer worldwide and the third most common in Thailand. The cancer is aggressive and fatal, making it a significant public health concern. The treatment of CRC involves a combination of primary surgery and chemotherapy. However, the efficacy of chemotherapy is limited and often leads to undesirable side effects [1]. Therefore, developing natural products or herbal remedies as alternative treatments is beneficial for future cancer care. Turmeric (*Curcuma longa L.*) is a Thai herbal plant with important chemical components. Among those, curcumin is the primary compound, which has various pharmacological properties including antioxidant, anti-inflammatory, and anti-cancer effects [2]. However, its low water solubility importantly rendered its biological effects. Our group previously synthesized the effervescent formula of curcumin called CUR-A-Poly- β -CD, which improved the water solubility greatly. In this study, the anti-cancer effect of CUR-A-Poly- β -CD was investigated on three different CRC cell lines using MTT-based cytotoxic and annexin V/PI staining apoptosis assays. CUR-A-Poly- β -CD treatment significantly reduced the cell viability of all CRC cell lines in dose- and time-dependent manners. The half inhibitory concentration (IC₅₀) of CUR-A-Poly β -CD on SW-480, HT-29, and SW-48 cells at 24 hours post-treatment were 8.19, 9.58, and 17.04 mg/ml, respectively. SW-480 cells, the most responsive cells were further subjected to investigate the apoptosis-inducing effect. Treatment of 2.5 and 5 mg/ml of CUR-A-Poly- β -CD consistently induced apoptosis rates of $21.46 \pm 0.48\%$ and $29.98 \pm 0.86\%$, respectively. Taken together, our results demonstrated the cytotoxicity and apoptosis-inducing ability of CUR-A-Poly- β -CD, which warrants future study in animals and humans in order to develop an alternative safer treatment for CRC patients.

References

- [1] Lohsiriwat, V., Chaisomboon, N., & Pattana-Arun, J. (2020). Current Colorectal Cancer in Thailand. *Ann Coloproctol*, 36(2), 78-82.
- [2] Menon, V. P., & Sudheer, A. R. (2007). Antioxidant and anti-inflammatory properties of curcumin. The molecular targets and therapeutic uses of curcumin in health and disease, 105-125.

Short Biography of presenting author

Ms. Artitaya Rongjumnong serves as a research assistant at the Cancer and Immunology Research Unit (CIRU), School of Medicine, Mae Fah Luang University. Her research focuses on cancer, and anti-cancer and immunomodulatory agents.

Title: Antibiotic Susceptibility of *Pseudomonas aeruginosa* TISTR1287

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Keywords: Bacteriophage, Antibiotic susceptibility test, *Pseudomonas aeruginosa*

Abstract:

Antibiotics are typically used to treat *Pseudomonas aeruginosa* infections. Unfortunately, rising antibiotic resistance makes treating *P. aeruginosa* infections in those exposed to healthcare environments like hospitals or nursing homes increasingly challenging. Bacteriophages are an alternate type of biological molecule since they have the ability to eradicate bacteria as part of their life cycle. The aim of this work is to examine *P. aeruginosa* antibiotic susceptibility and the bacteriophage's ability to lyse bacterial cells. The antibiotic susceptibility of *P. aeruginosa* TISTR 1287 was tested using the disk diffusion method. Tetracycline, kanamycin, and ampicillin were placed on a sterile paper disk and left to dry for an hour before testing. Additionally, the capacity of two bacteriophage solutions to lyse bacterial cells was assessed. Based on the findings, the zone of inhibition for Tetracycline shown by *P. aeruginosa* TISTR1287 was equal to 18.0 ± 1.4 mm. Based on suggested Antimicrobial Disks and Interpretative Zone Sizes, *P. aeruginosa* TISTR1287 has a notable moderate resistance to tetracycline. Additionally, *P. aeruginosa* TISTR1287 demonstrated a zone of inhibition for ampicillin and kanamycin that was equal to 14.3 ± 1.3 and 20.4 ± 1.1 mm, respectively. The zones of inhibition for Bacteriophage solutions 1 and 2 were 7.93 ± 0.69 and 7.41 ± 0.9 mm, respectively. The disk diffusion test indicates that tetracycline is more effective than these two bacteriophages. However, compared to the disk diffusion assay, the phage solution demonstrated superior bacterial cell lysis activity in the spot test. This result implies that the disk diffusion experiment should not be used to test the phage supernatant. Spot testing is recommended to confirm the phage's effectiveness.

References

- [1] Centers for Disease Control and Prevention. <https://www.cdc.gov/hai/organisms/pseudomonas.html>. 2023.
- [2] Hudzicki J. Kirby-Bauer Disk Diffusion Susceptibility Test Protocol. American Society for Microbiology 2016, 1-23.

Short Biography of presenting author

Pronping Pritsangkul is a fourth-year student at Mae Fah Luang University studying biotechnology. Her final assignment before graduating is to investigate the antibiotic susceptibility of *P. aeruginosa*

TISTR1287 and assess the bacteriophage that can treat it. This bacterium was isolated from a shrimp pond in Thailand; its antibiotic susceptibility profile has not been published. Those that use this bacterium as a model to research antibacterial agents would benefit from her work.

Oral Presentation

Title: Antioxidant and Antimicrobial Activities of Ethyl Acetate Extracts of *Laetiporus sulphureus*

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Keywords: Bioactivity, *Laetiporus*, Mushroom

Abstract

Objectives: *Laetiporus sulphureus* has a long tradition of consumption and its medicinal use is well-documented. The present study further sheds light on antibacterial and antioxidant activities of two strains of Thai *L. sulphureus* mushrooms.

Materials and Methods: Initially, the mushroom mycelia were prepared and cultured in potato dextrose broth and malt extract broth at 30°C for 10 days. The ethyl acetate extracts were then prepared using the culture supernatants. Antibacterial and antioxidant activities of the mushroom extracts were then tested using disc diffusion assay and an ABTS antioxidant assay, respectively.

Results: For antibacterial activity, it was showed that the ethyl acetate extracts could inhibit the growth of all testing bacteria including *Staphylococcus aureus*, *Escherichia coli*, *Micrococcus luteus*, *Bacillus subtilis*, *Pseudomonas aeruginosa*, and *Salmonella typhimurium*. Based on the ABTS assay system, the IC₅₀ values of these extracts were between 0.125 – 0.170%, compared to 0.082% which was that of the Trolox standard.

Conclusion: Our present study confirms that the *L. sulphureus* extracts obtained from its mycelial state possess the antibacterial and antioxidant activity. It should also be noted that these biological activities are dependent on the mushroom strains and media used for cultivation.

What will the audience learn from your presentation?

- Ethanolic extracts of *L. sulphureus* mushrooms exhibit antibacterial and antioxidant activity.
- These biological activities appear to depend on the mushroom strains, culture conditions, and solvents used for preparing the extracts.
- The present study suggests an alternative role of *L. sulphureus* as medicinal mushroom.

Short Biography of presenting author

Pawarisorn Kingkohyaw, a third-year student in the Biotechnology programme at the School of Science at Mae Fah Luang University, Thailand. His life experiences and his hometown motivated and inspired him to pursue a career in science. He afterward graduated high school his journey are continued in the Biotechnology programme, School of Science at Mae Fah Luang University in 2021. Three years at

Mae Fah Luang University have taught him laboratory skills and good research skills, which have improved him and inspired him to be a brilliant researcher who has a positive impact on the human world.

Title: Prevalence and Factors Associated with Intestinal Parasitic Infestation Among Hill Tribe Students in Mae Fah Luang District, Chiang Rai, Thailand

Authors: Anucha Intanate^{*,1}, Tawatchai Apidechkul² and Wootichai Nachaiwang³

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Keywords: Hill tribe schoolchildren, Prevalence, Factor associated, Intestinal parasitic

Abstract

Objective: The study aimed to estimate the prevalence and determine factors associated with intestinal parasitic infections among hill tribe schoolchildren who attended grades 4 to 6 in Mae Fah Luang District, Chiang Rai, Thailand.

Methods: A cross-sectional study was applied to collect participant data using a validated questionnaire and 3 grams of stool samples. The Modified Formalin-Ethyl Acetate Concentration Technique was used to identify parasites at the Department of Parasitology, Faculty of Medicine, Chiang Mai University. Descriptive and inferential statistics were used to describe the participants' general characteristics and to detect the associations between variables by chi-square, Fisher Exact test, and logistic regression at the significant level 0.05.

Results: A total of 365 were recruited into the analysis: 51.78% were women, the average age was 11.2 years, 39.18% were Akha, 42.19% attended grade 4, and 86.58% held Thai identification card. The overall prevalence of intestinal parasitic infestation was 11.50%. The majority were *Entamoeba coli* (26.20%) and *Giardia lamblia* (21.43%). Almost half had poor knowledge of intestinal parasitic infestation prevention and control (48.77%), while a large proportion had a high attitude toward disease prevention and control (84.10%). After controlling potential confounder factors; age, tribe, and education, two variables were found to be associated with intestinal parasitic infestation among hill tribe children. Those who ate raw food (LABB and LAU) had a 3.55 time (95% CI = 1.38 – 9.15) greater odds of having intestinal parasitic infestation than those who did not. Those who had a dog had a 3.83 time (95% CI = 1.51 – 9.70) greater odds of having intestinal parasitic infestation than those who did not.

Conclusion: The hill tribe schoolchildren who are living in remote and rural areas have a high risk of getting intestinal parasitic infections. Public health implementation to improve individuals' knowledge and skills, especially having cooked food and properly caring for their pet are important to prevent and control intestinal parasitic infection among the hill tribe schoolchildren.

References

[1] Pan American Health Organization. (2017). Soil Transmitted Helminthiasis. Geneva: World Health Organization.

- [2] World Health Organization. (2022). Soil-transmitted helminth infections. Geneva: World Health Organization.
- [3] Mehmet Aciöz, Serpil Değerli, Ahmet Alim, Cetin Aygan Ali Celiksöz. (2005). Egg positive rate of *Enterobius vermicularis* and *Taenia* spp. by cellophane tape method in primary school children in Sivas, Turkey. *National Center for Biotechnology Information*, 61-64.
- [4] Kittipong Chaisiri, Akkarin Poodeepiyasawad, Surapol Sa-Nguankiat, Nirundorn Homsuwan, Tetsuya Yanagida, Munehiro Okamoto, Dorn Watthanakulpanich, Jitra Waikagul, Paron Dekumyoy, Chalit Komalamisra, Akira Ito Teera Kusolsuk. (2021). Risk factors and prevalence of taeniasis among the Karen people of Tha Song Yang District, Tak Province, Thailand. *The National Center for Biotechnology Information*, 1-10.
- [5] Edosa Kebede Wage, Tigist Getachew & Alemu Gedefie Daniel Getacher Feleke. (2019). Intestinal parasitic infections and associated factors among street dwellers in Dessie town, North-East Ethiopia: a cross sectional study. *BMC Research Notes*, 1 - 5.
- [6] Moreno LR and et al. Luis Enrique JP. (2018). Prevalence of intestinal parasitic infections in dogs from Havana, Cuba: risk of zoonotic infections to humans. *Animal Husbandry, Dairy and Veterinary Science*, 1 - 5.
- [7] Rapeeporn Yaicharoen. (2007). Intestinal parasitic infections among school children in Thailand. *Tropical Biomedicine*, 83-88.
- [8] Claudia Muñoz Yáñez, Alejandra Méndez Hernández, Jesús Jaime Duarte Sustaita, Efraín Gaytan Jiménez, Marisela Rubio Andrade, Gonzalo Gerardo García Vargas, and Janeth Oliva Guangorena Gómez Marcela Ramírez Pérez. (2020). Blastocystis infection frequency and subtype distribution in university students. *The National Center for Biotechnology Information*, 1-6.

What will the audience learn from your presentation?

1. Understand the factors associated with intestinal parasite infections.
2. Work together to monitor Control disease and campaign for health awareness.
3. Relevant agencies must monitor and integrate cooperation between health departments and local government organizations. To receive care from government organizations in the knowledge and management of student health in order to achieve efficiency in setting goals. Student health plans and plans that are consistent with the area and cover care, treatment, and government welfare allocation. Provide access to medical services.

Short Biography of presenting author

Anucha Intanate Studied Public Health at the Mae Fah Luang University, Thailand and I'm working at Chiang Rai Prachanukroh Hospital. In the Department of Disease Prevention, Control and Epidemiology.

Title: Bacillus Species for Biocontrol of *Lasiodiplodia theobromae*

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Keywords: *Bacillus*, Biocontrol, *Lasiodiplodia*

Abstract

Objectives: The aim of this study was to characterize the bacterial strains as well as their metabolites for possible biocontrol capacity to inhibit *Lasiodiplodia theobromae*, a cosmopolitan fungal pathogen.

Materials and Methods: Several bacterial strains were initially screened and isolated from natural sources (e.g., fermented soybeans and rhizosphere soils). By using a dual culture assay, the bacterial antagonists were selected and subsequently identified. The metabolites of the bacterial antagonists were also characterized using GC-MS analysis.

Results: Antagonistic bacteria showing inhibitory activity against *L. theobromae* were obtained, and based on biochemical and molecular data, it was found that they belonged to *Bacillus subtilis* / *B. amyloliquefaciens* species. Cell-free supernatants (CFSs) of both antagonistic bacteria were prepared and found to be active against all tested *L. theobromae* strains. The optimum pH and temperature for antifungal activity of both CFSs were 7 and 30 °C. In addition, UV exposure and proteinase treatment did not affect the CFS's antifungal activity. Characterization of the chemical constituents using gas chromatography-mass spectrometry revealed the presence of various metabolites exhibiting antifungal activity.

Conclusion: From an applicative point of view, establishing a practical application technology for *Bacillus* species as a biocontrol agent is an important development direction for its role in the sustainable development of agriculture.

What will the audience learn from your presentation?

- *Bacillus* species were effective against *L. theobromae*.
- Bacterial metabolites could also be used for fungal inhibition.
- *Bacillus* species can be introduced as a biocontrol agent.

Title: Influencing Factors Methamphetamine Use Among Lahu Youth Hilltribe, Chiang Rai, Thailand

Authors: Phootawan Thinpanyawong¹, Tawatchai Apidechkul², Karl peltzer³ and Pilasinee Wongnuch⁴

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Keywords: Youth, Methamphetamine use, Hill tribe, Influencing, Case-controls study

Abstract

Introduction: Methamphetamine (MA) is a powerfully addictive stimulant affects both physical and psychological health [1], moreover affected on socio-economic condition [2], Lahu hilltribe is second-largest population in Thailand [3], however the MA prevalence according previous study was higher in Lahu [4]. The social inequity had occurred in hilltribe such as failed obtain ID card, education, access health service etc [5] [6]. Among youth aged typically risk to substance use by their novelty experience [7], and commonly initiate MA at this age [8]. In additional low-price of MA cause more availability [9].

Objective: Investigate influencing factors to MA use among youth Lahu hilltribe.

Methodology: Case-control study design was proceeded to recruited youth Lahu aged 15-24 years, divided to 136 cases and 272 controls living in Muang, Mae Suai, Mae Jan, and Mae Fah Luang districts [10]. Gathered cases based on MA treatment recorded, and community-based controls were matched gender, aged $\pm 3 - 5$ years, and having similar residence.

Results: Most of participants were male and 77.9% hold Thai national identification card. Graduated primary (24.0%) and secondary school (24.0%). One-third of participants were curious of MA. Half of them possessed moderate knowledge of MA prevention. Major substance used behavior was drinking and smoking. Those were used of MA, commonly substances had used before coming to MA was cigarette (80.9%). Multiple logistic regression had analyzed, found the influencing factors increasing risk to MA use consist of; non-Thai national card, lower household income parent divorce or died, high-level of knowledge toward MA prevention, smoking behavior, curiosity of MA. Influencing decreased risk consist of; undocumented, education, having friends used of opium and heroin.

Conclusion: The study highlights the multifaceted risk factor of MA by a complex interplay of personal, socio-economic, environmental factors. Effective prevention and intervention

strategies need to address these diverse determinants to tackle MA use among youths Lahu effectively.

References

1. NIDA. Methamphetamine DrugFacts 2019 [Available from: <https://nida.nih.gov/publications/drugfacts/methamphetamine>].
2. Peltzer K, Pengpid S. Cannabis and Amphetamine Use and Associated Factors Among School-Going Adolescents in Nine African Countries. *Journal of Child & Adolescent Substance Abuse*. 2018;27(2):112-8.
3. Tawatchai A. Health situation of Akha hill tribe in Chiang Rai Province, Thailand. *J Pub Health Sev*. 2016;14(1):77-97.
4. Apidechkul T, Chomchoei C, Wongnuch P, Tamornpark R, Upala P, Yeemard F, et al. Associations of childhood experiences and methamphetamine use among Akha and Lahu hill tribe youths in northern Thailand: A cross-sectional study. *PLOS ONE*. 2020;15(6):e0234923.
5. Apidechkul T, Laingoen O, Suwannaporn S. Inequity in Accessing Health Care Service in Thailand in 2015: A Case Study of the Hill Tribe People in Mae Fah Luang District, Chiang Rai, Thailand. *Journal of Health Research*. 2017;30(1):67-71.
6. Chomchoei C, Apidechkul T, Wongnuch P, Tamornpark R, Upala P, Nongkhai MPN. Perceived factors influencing the initiation of methamphetamine use among Akha and Lahu youths: a qualitative approach. *BMC Public Health*. 2019;19(1):847.
7. Kelley AE, Schochet T, Landry CF. Risk taking and novelty seeking in adolescence: introduction to part I. *Ann N Y Acad Sci*. 2004;1021:27-32.
8. Lwin TM, Cachia R. Methamphetamine use in Myanmar, Thailand, and Southern China: assessing practices, reducing harms. *Transnationalinstitute*; 2019 [cited 2022 5 April]. Available from: https://www.tni.org/files/publication-downloads/dpb_50_eng_16022019_web_2.pdf.
9. Thailand Narcotics Control Annual Report 2021. Office of the Narcotics Control Board, Ministry of Justice; 2021. Available from: <https://www.oncb.go.th/EBookLibrary/annual%20report%202564.pdf>.
10. Welfare DoSDa. Twenty Provinces Highland community, Thailand 2016.

What will the audience learn from your presentation?

- Characteristic of influencing MA consumption factors among youth Lahu hilltribe
- Barrier characteristic of Lahu hilltribe, hiding under their health behavior outcome
- Suggestion under research finding condition to reduced risk, enhanced MA preventives among youth Lahu.

Short Biography of presenting author

Mr. Phootawan Thinpanyawong graduated in public health Bachelor's degree, Mae Fah Luang university, then he worked on health promoting hospital at Mae Sai district for 2 years, in present he working on Health promotion center 2, Phitsanulok province, Department of health.

Title: Production of *Laetiporus sulphureus* Fruiting Bodies

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Keywords: Cultivation, Fruiting body, *Laetiporus*

Abstract

Objectives: *Laetiporus sulphureus*, a wood-decaying basidiomycete, produces striking characteristics of yellow-orange pigments in fruiting bodies. Production of this mushroom fruiting body is of great interest due to its potential use in biotechnological and pharmacological application. In this study, two *L. sulphureus* strains were investigated for optimal conditions of mycelia growth, and further experiment was performed to produce the mature fruiting bodies of *L. sulphureus*.

Materials and Methods: To optimise the mycelial culture condition of the *L. sulphureus* mushroom, the pure mycelial culture was isolated and cultured on various conditions. These optimisation studies included the effect of media, pH, and temperature. The mycelial growth was then monitored to establish the optimal condition. Production of the mushroom fruiting body was also undertaken using a log and a sawdust production system.

Results: Potato dextrose agar (PDA) and malt extract agar (MEA) were observed as the favourable medium for mycelia growth. The optimum pH and temperature for the mushroom mycelia were 6-8 and 25-30°C, respectively. However, the methods of cultivation used in this study did not yield mature fruiting bodies.

Conclusion: The use of PDA and MEA as cultural media and growing under temperature 25-30°C and pH 6-8 is recommended as a favorable culture condition for the mushroom mycelia. Log and sawdust cultivation system albeit leading to the primordial formation, failed to produce the mushroom fruiting body.

What will the audience learn from your presentation?

- For *L. sulphureus* mycelia growth, the favourable media were PDA and MEA.
- The optimal condition of *L. sulphureus* mycelia is 25-30°C and pH 6-8.
- No fruiting body was formed under the production system tested.

Short Biography of presenting author

My name is Peerada Thuvasujirake, I'm a 3rd year student studying in School of Science at Mae Fah Luang University, Thailand. My major is Biotechnology. I study about cell biology, gene technology and many things about molecular biology involving technology that can be applied in biology.

Title: Prevalence and Associated Factors with Scrub Typhus Infection among Hill Tribe People in Mae Fah Luang District, Chiang Rai Province, Thailand

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Keywords: Hill tribe, Scrub typhus, Prevalence, Factor associated

Abstract: Scrub typhus is a significant tropical disease, occurring in rural settings and therefore usually afflicting remote agricultural populations, who have lower socioeconomic status and limited access to medical care [1- 4]. The hill tribe people in Thailand often face financial constraints, have limited education, and inadequate healthcare access [5- 6]. This study objectives to estimate the prevalence of scrub typhus antibodies and identify factors associated with infection among the hill tribe population in northern Thailand.

Materials and Methods: A cross-sectional study collected data from hill tribe individuals aged 18 and above in ten villages in Mae Fah Luang, Thailand [7]. Eligible participants completed a validated questionnaire that was divided into three parts. A five mL blood sample was collected for serological analysis. ELISA and IFA were used to detect *Orientia tsutsugamushi* IgM and IgG antibodies [8- 11]. Logistic regression analysis was performed to identify associations between variables at a significance level of $\alpha = 0.05$

Results: The study involved 485 hill tribe participants, with 57.1% females, 29.9% aged over 60, 46.4% belonging to the Akha tribe, and 74.2% having no formal education. The prevalence of scrub typhus antibodies was 48.0%. Factors associated with past scrub typhus infection included age >60 (4.31-fold higher odds), illiteracy (3.46-fold higher odds), Akha tribe membership (2.20-fold higher odds vs. Lahu), cutting grass (1.85-fold increase), and not wearing gloves (2.12-fold higher odds) compared to regular glove usage.

Conclusion: The hill tribe people in Thailand are at high risk of scrub typhus infection. Urgent public health interventions are needed to promote awareness and prevention of scrub typhus in these populations.

References

- [1] Xu G, Walker DH, Jupiter D, Melby PC, Arcari CM. A review of the global epidemiology of scrub typhus. *PLoS Neglected Tropical Diseases*. 2017; 11(11). DOI: 10.1371/journal.pntd.0006062.
- [2] Paris DH, Shelite TR, Day NP, Walker DH. Review article: unresolved problems related to scrub typhus: a seriously neglected life-threatening disease. *American Journal of Tropical Medicine and Hygiene*. 2013;89(2):301-307. DOI:10.4269/ajtmh.13-0064.
- [3] Wangrangsamakul T, Elliott I, Nedsuwan S, Kumlert R, Hinjoy S, Chaisiri K, et al. The estimated burden of scrub typhus in Thailand from national surveillance data (2003-2018). *PLoS Neglected Tropical Diseases*. 2020;14(4), 1-20. DOI: 10.1371/journal.pntd.0008233.
- [4] Elliott I, Pearson I, Dahal P, Thomas NV, Roberts T, Newton P N. Scrub typhus ecology: a systematic review of orientia in vectors and hosts. *Parasites and Vectors*. 2019; 12(1). DOI:10.1186/s13071-019-3751-x.
- [5] Apidechkul T, Laingoen O, Suwannaporn S. Inequity in accessing health care service in Thailand in 2015: a case study of the hill tribe people in Mae Fah Luang District, Chiang Rai, Thailand. *J Health Res*. 2017; 30(1): 67-71.
- [6] Apidechkul T. Epidemiology of the hill tribe HIV/AIDS populations, Thailand. *J Med Assoc Thai*. 2016; 99:702.
- [7] Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health. 506system. Available from: <http://www.boe.moph.go.th/boedb/surdata/disease.php?ds=44>
- [8] Blacksell SD, Tanganuchitcharnchai A, Nawtaisong P, Kantipong P, Laongnualpanich A, Day NPJ. Diagnostic accuracy of the In Bios scrub typhus detect enzyme-linked immunoassay for the detection of IgM antibodies in northern Thailand. *Clinical and Vaccine Immunology*. 2016; 23(2), 148-154. DOI:10.1128/CVI.00553-15.
- [9] Blacksell SD, Lim C, Tanganuchitcharnchai A, Jintaworn S, Kantipong P, Richards AL, et al. Optimal cutoff and accuracy of an IgM enzyme-linked immunosorbent assay for diagnosis of acute scrub typhus in Northern Thailand: an alternative reference method to the IgM Immunofluorescence assay. *J Clin Microbiol*. 2016; 54(6), 1472-1478. DOI: 10.1128/JCM.02744-15.
- [10] Paris DH, Blacksell SD, Nawtaisong P, Jenjaroen K, Teeraratkul A, Chierakul W, et al. Diagnostic accuracy of a loop-mediated isothermal PCR assay for detection of *Orientia tsutsugamushi* during acute scrub typhus infection. *PLoS Negl Trop Dis*. 2011;5:e1307. DOI: 10.1371/journal.pntd.0001307.
- [11] Lim C, Blacksell SD, Laongnualpanich A, Kantipong P, Day NPJ, Paris DH, et al. 2015. Optimal cutoff titers for indirect immunofluorescence assay for diagnosis of scrub typhus. *J Clin Microbiol*. 2015;53: 3663-3666. DOI:10.1128/JCM.01680-15.

What will the audience learn from your presentation?

- (Try to list 3-5 specific items)
- The audience will gain a deeper understanding of the prevalence of scrub typhus and its associated factors.
- Awareness will be raised regarding specific outdoor activities that may lead to scrub typhus infection, such as cutting grass and visiting tea and coffee plantations.
- The importance of implementing Personal Protective Equipment (PPE) with a community-wide emphasis, particularly highlighting the significance of wearing gloves when working in the fields.
- The necessity for the development and effective promotion of disease prevention and control policies, particularly targeting vulnerable groups.
- The promotion of sustainability and accessibility of health services for people residing in high-risk areas to ensure timely and appropriate treatments.

Short Biography of presenting author

Miss Nidanuch Tasak completed her Bachelor of Nursing Science Program at Boromarajonani College of Nursing, Lampang, Thailand, graduating in 2006. Following her graduation, she gained experience as a registered nurse at Thammasart Hospital in Bangkok, then worked at Phatathai II Hospital in Bangkok, and later at Kasemrad Sriburin Hospital in Chiangrai, Thailand. Currently, since 2013, she serves as the Head of Research Nurse at Mahidol-Oxford Tropical Medicine Research Unit in Chiang

Rai, Seeking to enhance her skills and advance her career in research, she is studying for a Master of Science in Public Health at Mae Fah Luang University, Thailand.





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