

CURRICULUM VITAE

Onlak Ruangsomboon (Makdee), M.D.



I. PERSONAL DATA

Mailing Address: Department of Emergency Medicine

Siriraj Hospital

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Current position: Instructor, Head of Research Division,

Department of Emergency Medicine, Faculty of Medicine

Siriraj Hospital, Mahidol University, Bangkok, Thailand

II. EDUCATION

| Year | Degree | Institution |
|------|--|--|
| 2016 | Emergency Medicine Diploma | Siriraj Hospital, Mahidol University, Thailand |
| 2015 | Visiting Resident | Department of Emergency and Critical Care Medicine, Chiba University Hospital, Chiba, Japan (Preceptor: Prof. Shigeto Oda) |
| 2012 | Doctor of Medicine (first class honor; GPA 3.78) | Siriraj Hospital, Mahidol University, Thailand |
| 2006 | Highschool (GPA 3.99) | Triumudom Suksa school, Thailand |

III. POST-GRADUATE EDUCATION

| Year | Degree | Institution |
|------|---|--|
| 2014 | Higher graduate diploma (clinical medical sciences) | Siriraj Hospital, Mahidol University, Thailand |

IV. ACADEMIC APPOINTMENTS

| Month, Year | Degree | Institution |
|----------------|---------------------------|---|
| September 2016 | Instructor | Department of Emergency Medicine, Siriraj Hospital Mahidol University, Thailand |
| October 2017 | Head of Research Division | Department of Emergency Medicine, Siriraj Hospital Mahidol University, Thailand |

V. OTHER EMPLOYMENT PERTAINING TO CURRENT PROFESSIONAL APPOINTMENTS

| Year | Position | Institution |
|-----------|----------------------|--|
| 2013 | General Practitioner | Yangchumnoi hospital, Srisaket, Thailand |
| 2012-2013 | General Practitioner | Nakonpathom general hospital, Thailand |

VI. CERTIFICATION AND LICENSURE

A. Licensure

| Board | Date | Number |
|-----------------------------------|--------------|------------|
| Certificate of Medicine Licensure | 1 April 2012 | 43179 |
| Emergency Medicine | 1 July 2016 | 31007/2559 |

B. Certification

| State | Year | Permanent/Temporary |
|--|------|---------------------|
| Provider, Advanced Trauma Life Support | 2013 | Temporary |
| Provider, Toxicology and Hazmat Life Support | 2016 | Temporary |
| Instructor, Toxicology and Hazmat Life Support | 2016 | Temporary |
| Provider, Advanced Cardiac Life Support | 2016 | Permanent |
| Instructor, Advanced Cardiac Life Support | 2016 | Permanent |
| Provider, Advanced Pediatric Life Support | 2016 | Permanent |
| Instructor, Advanced Pediatric Life Support | 2016 | Permanent |
| Provider, Advanced Ultrasound Life Support | 2016 | Permanent |
| Instructor, Advanced Ultrasound Life Support | 2017 | Permanent |

VII. HONORS AND AWARDS

- Best published article by young researchers in 2018 from the Faculty of Medicine, Siriraj Hospital Mahidol University for “*O Makdee, A Monsomboon, U Surabenjawong, N Paphruetkit, W Chaisirin, T Chakorn, C Permpikul, P Thiravit, T Nakornchai. High-Flow Nasal Cannula Versus Conventional Oxygen Therapy in Emergency Department Patients with Cardiogenic Pulmonary Edema: A Randomized Controlled Trial. Ann Emerg Med. 2017 Oct;70(4):465-472.e2*”
- Best paper award in 2020 from the Thai College of Emergency Physician for “*Ruangsomboon O., Dorongthom T., Chakorn T., Monsomboon A., Paphruetkit N., Limsuwat C., Surabenjawong U., Riyapan S., Nakornchai T., Chaisirin W. High-Flow Nasal Cannula Versus Conventional Oxygen Therapy in Relieving Dyspnea in Emergency Palliative Patients with Do-Not-Intubate Status: A Randomized Crossover Study. Ann Emerg Med. 2020;75(5):615- 626.*”

VIII. PROFESSIONAL AFFILIATIONS (INCLUDING OFFICES HELD)

| Year | Organization |
|------|--------------------------------------|
| 2012 | The Medical Council of Thailand |
| 2017 | Thai College of Emergency Physicians |

IX. RESEARCH ACTIVITIES**A. AREAS OF RESEARCH INTEREST**

- Airway Management
- Respiratory support
- Diagnostic algorithm and clinical prediction modelling for emergency patients with chest pain
- Palliative care in the emergency department
- Sepsis and septic shock
- Elderly emergency patients

B. CURRENT PROJECTSProjects as the principal investigator

- Validation of the HEART and T-MACS decision rules in Thai emergency chest pain patients with 0/1 hour high-sensitivity troponin T algorithm for rule-in and rule-out of acute coronary syndrome and for predicting 30-day MACE (status: recruitment completed, analyzing data)
- High-flow nasal cannula versus conventional oxygen therapy in emergency patients with acute asthmatic attack: a randomized controlled study (status: IRB submission)
- Avoidable and unavoidable emergency department visits of palliative patients and its associated factors: a prospective observational study (status: recruiting patients, 40% completed)
- High-flow nasal cannula versus non-invasive ventilation in emergency patients with pulmonary edema: a randomized controlled study (status: proposal preparation)
- In-hospital cardiac arrest registry (status: manuscript preparation)

Projects as a co-investigator

- Effect of non-invasive mechanical ventilation with average volume assured pressure support (AVAPS) in patients with chronic obstructive pulmonary disease with acute exacerbation: a randomized controlled study (status: journal submission)
- Dosing patterns of labetalol for managing blood pressure among patients with acute cerebral hemorrhage and spontaneous subarachnoid hemorrhage (status: recruiting)

C. RESEARCH COLLABORATION/TEAM SCIENCE

- Dosing patterns of labetalol for managing blood pressure among patients with acute cerebral hemorrhage and spontaneous subarachnoid hemorrhage, in collaboration with Division of neurological surgery, Department of Surgery, Siriraj Hospital, Mahidol University, Thailand

X. TEACHING ACTIVITIES**A. Classroom, Seminar, or Teaching Laboratory**

| Year | Course title | length | % responsibility |
|--------------|--|------------|------------------|
| 2017-present | Integrated learning for medical students | 60 minutes | 100% |
| 2018-present | Approach to emergency patients | 60 minutes | 100% |
| 2018-present | Glycemic emergency | 60 minutes | 20% |
| 2018-present | Team-based learning: CXR and EKG | 60 minutes | 20% |
| 2018-present | Management of chest pain | 60 minutes | 20% |
| 2018-present | Airway management workshop | 60 minutes | 20% |
| 2018-present | Ward class: approach to shock | 60 minutes | 20% |
| 2018-present | Simulation: ACLS and POCUS | 60 minutes | 20% |

B. Clinical Teaching

| Year | Where teaching occurred |
|--------------|-------------------------|
| 2016-present | Emergency room |

XI. TEACHING ACTIVITIES OTHER THAN CLASSROOM OR CLINICAL, INCLUDING TEACHING OF UNDERGRADUATE (PRE-BACCALAUREATE), GRADUATE, POSTDOCTORAL STUDENTS AND CONTINUING EDUCATION MEDICAL STUDENTS.**A. Conferences, Grand Rounds, Journal Clubs, etc**

| Year | Type of activity |
|--------------|---|
| 2016-present | Morning report |
| 2016-present | Follow-up round |
| 2016-present | Interesting case |
| 2016-present | Topic review |
| 2016-present | Journal club |
| 2016-present | Advanced cardiac life support: provider course (simulation-based) |
| 2016-present | Advanced cardiac life support: instructor course (simulation-based) |
| 2016-present | Advanced pediatric life support: provider course (simulation-based) |

B. Teaching Committees

| | |
|--------------|---|
| 2017-present | Undergraduate studies committee |
| 2017-present | OSCE for undergraduate students committee |

C. Student Counseling

Mentorship for one emergency medicine resident per academic year

D. Formal Study to Improve Teaching Abilities

Essential skill for clinical teachers' course, provided by Siriraj Health Science Education Excellence center (SHEE), completed 23 Jan 2018

Advanced skill for clinical teachers' course, provided by Siriraj Health Science Education Excellence center (SHEE) completed 5 Feb 2018

XII. CLINICAL ACTIVITIES

Attending physician in Emergency room 8-10 eight-hour shifts a month

XIII. PERSONNEL CURRENTLY SUPERVISED

One third-year and one second-year emergency medicine resident

XIV. PAPERS PUBLISHED OR IN PRESS

A. Peer Reviewed

- **Makdee O**, Monsomboon A, Surabenjawong U, Praphruekit N, Chaisirin W, Chakorn T, Permpikul C, Thiravit P, Nakornchai T*. High-Flow Nasal Cannula Versus Conventional Oxygen Therapy in Emergency Department Patients with Cardiogenic Pulmonary Edema: A Randomized Controlled Trial. *Ann Emerg Med* 2017 Oct;70(4):465-472.e2 (DOI: <http://dx.doi.org/10.1016/j.annemergmed.2017.03.028>) Cited 58 times, Impact Factor = 4.7, Rank 2 of 84 Emergency Medicine journals.
- Praphruekit N*, Bundit C, Monsomboon A, Surabenjawong U, Nakornchai T, Chaisirin W, Chakorn T, Permpikul C, **Makdee O**. Non-invasive ventilation in emergency patients with respiratory distress: a randomized controlled trial. *J Med Assoc Thai* 2018;101(10):1319-24. Cited 0 times, Impact Factor = 0.006, not ranked as an Emergency Medicine journal
Contribution: Onlak recruited patients and revised the manuscript.
- **Ruangsomboon O.***, Mekavuthikul P., Chakorn T., Monsomboon A., Praphruekit N., Surabenjawong U., Limsuwat C., Riyapan S., Chaisirin W. The feasibility of the 1-h high-sensitivity cardiac troponin T algorithm to rule-in and rule-out acute myocardial infarction in Thai emergency patients: an observational study. *Int J Emerg Med* 2018;11:43. (electronic publication; <https://doi.org/10.1186/s12245-018-0204-9>) Cited 3 times, Impact factor = 1.64, Rank 32 of 84 Emergency Medicine journals
- Monsomboon O., Patarateeranon T., Tongyoo S., Surabenjawong U., Chaisirin W., Chakorn T., Praphruekit N., **Ruangsomboon O.**, Nakornchai T. Agreement between Emergency Physicians and a Cardiologist on Cardiac Function Evaluation after Short Training. *Siriraj Med J* 2019;71(4):253-260. Cited 0 times, no Impact Factor, not ranked as an Emergency Medicine journal. *Contribution: Onlak recruited patients and revised the manuscript.*
- Riyapan S., Nualnark T., **Ruangsomboon O.**, Chaisirin W., Limsuwat C., Praphruekit N., Chakorn T., Monsomboon A. Improving quality of chest compression in Thai emergency department by using real-time audio-visual feedback cardio-pulmonary resuscitation monitoring. *J Med Assoc Thai* 2019;102(3):245-51. Cited 2 times, no Impact Factor, not ranked as an Emergency Medicine journal. *Contribution: Onlak recruited patients*
- Limsuwat C., Rawangnam W., **Ruangsomboon O.**, Praphruekit N. Effect of non-invasive mechanical ventilation with average volume assured pressure support (AVAPS) in patients with chronic obstructive pulmonary disease with acute exacerbation: A randomized pilot trial. *The Southwest Respiratory and Critical Care Chronicles* 2019;7(30):19-28. Cited 1 time, no Impact Factor, not ranked as an Emergency Medicine journal.
Contribution: Onlak recruited patients

- Nakornchai T., Wonkkanthai P., Monsomboon A., **Ruangsomboon O.**, Chaisirin W., Riyapan S., Surabenjawong U., Praphruekit N., Chakorn T. Diagnostic Accuracy of the Multi-Organ Ultrasound Performed by the Novice Emergency Medicine Residents for Diagnosis of Acute Heart Failure in Thailand. *J Med Assoc Thai* 2019; 102(5):582-7. Cited 0 times, no Impact Factor, not ranked as an Emergency Medicine journal.
Contribution: Onlak recruited patients and revised the manuscript.
- Nakornchai T., Monsomboon A., **Ruangsomboon O.**, Chantanakomes J. A Woman with Leg Pain. *Ann Emerg Med* 2019;74(6):e115-e156. Cited 0 times, Impact Factor = 5.2, Rank 2 of 84 Emergency Medicine journals. *Contribution: Onlak revised the manuscript.*
- Nakornchai T., Jampa N., **Ruangsomboon O.**, Chaisirin W., Riyapan S., Surabenjawong U., Praphruekit N., et al. Agreement in Evaluation of Inferior Vena Cava Collapsibility Index by Medical Students Using Ultrasound Compared to Emergency Physicians. *J Med Assoc Thai* 2020;103:8-13. Cited 0 times, no Impact Factor, not ranked as an Emergency Medicine journal.
Contribution: Onlak recruited patients and revised the manuscript.
- **Ruangsomboon O.**, Dorongthom T., Chakorn T., Monsomboon A., Praphruekit N., Limsuwat C., Surabenjawong U., Riyapan S., Nakornchai T., Chaisirin W. High-Flow Nasal Cannula Versus Conventional Oxygen Therapy in Relieving Dyspnea in Emergency Palliative Patients with Do-Not-Intubate Status: A Randomized Crossover Study. *Ann Emerg Med*. 2020;75(5):615- 626. Cited 4 times, Impact Factor = 5.2, Rank 2 of 84 Emergency Medicine journals.
- Chaisirin, W., Wongkrajang, P., Thoesam, T., Praphruekit, N., Nakornchai, T., Riyapan, S., **Ruangsomboon, O.**, Laiwejpithaya, S., Rattanathummawat, K., Pavichai, R., Chakorn, T. Role of Point-of-Care Testing in Reducing Time to Treatment Decision-Making in Urgency Patients: A Randomized Controlled Trial. *West J Emerg Med*. 2020;21(2):404- 410. Cited 0 times, Impact Factor = 1.1, Rank 11 of 84 Emergency Medicine journals.
Contribution: Onlak revised the manuscript.
- Riyapan S., Chantanakomes J., **Ruangsomboon, O.**, et al. Assessment of Prehospital Management of Patients Transported to a Thai University Hospital. *Siriraj Med J* 2020;72(4) [Epub ahead of print]. Cited 0 times, no Impact Factor, not ranked as an Emergency Medicine journal.
Contribution: Onlak recruited patients and revised the manuscript.
- **Ruangsomboon O.**, Panjaikaew P., Monsomboon A., Chakorn T., Permpikul C., Limsuwat C. Diagnostic and Prognostic Utility of Presepsin for Sepsis in Very Elderly Patients in the Emergency Department. *Clin Chim Acta*. 2020;510:723-732. Cited 0 times, Impact Factor = 2.3
- **Ruangsomboon O.**, Thirawattanasoot N., Chakorn T., Limsuwat C., Monsomboon A., Praphruekit N., Surabenjawong U., Riyapan S., Nakornchai T. The utility of the 1-hour high-sensitivity cardiac troponin T algorithm compared with and combined with five early rule-out scores in high-acuity chest pain emergency patients. *Int J Cardiol*. 2021 Jan 1;322:23-28. doi: 10.1016/j.ijcard.2020.08.099. Epub 2020 Sep 1. PMID: 32882291. Cited 0 times, Impact Factor = 3.5
- Boonmee P., **Ruangsomboon O.***, Limsuwat C., Chakorn, T. (2020). Predictors of Mortality in Elderly and Very Elderly Emergency Patients with Sepsis: A Retrospective Study. *West J Emerg Med*. 2020 Oct 6;21(6):210-218. doi: 10.5811/westjem.2020.7.47405. PMID: 33207168. Cited 1 time, Impact Factor = 1.1, Rank 11 of 84 Emergency Medicine journals.
- **Ruangsomboon O***, Limsuwat C, Praphruekit N, Monsomboon A, Chakorn T. Nasal High-flow Oxygen Versus Conventional Oxygen Therapy for Acute Severe Asthma Patients: A Pilot Randomized Controlled Trial. *Acad Emerg Med*. 2020 Nov 30. doi: 10.1111/acem.14187. Epub

ahead of print. PMID: 33258213. Cited 1 times, Impact Factor = 3.064, Rank 2 of 84 Emergency Medicine journals.

- **Ruangsomboon O**, Boonmee P, Limsuwat C, Chakorn T, Monsomboon A. The utility of the rapid emergency medicine score (REMS) compared with SIRS, qSOFA and NEWS for Predicting in-hospital Mortality among Patients with suspicion of Sepsis in an emergency department. *BMC Emerg Med.* 2021 Jan 7;21(1):2. doi: 10.1186/s12873-020-00396-x. PMID: 33413139; PMCID: PMC7792356. Cited 0 times, Impact Factor = 1.690, Rank 21 of 84 Emergency Medicine journals.

B. Books and/or Chapters

- **Ruangsomboon O**. (2017). New features to faster diagnosis of MI. In T. Chakorn (1st Ed.), *First hour in Emergency Room 2017: Integration of care; from pre-hospital to definitive care* (pp. 37-56). Bangkok: P.A. Living Co., LTD.
- **Ruangsomboon O**. (2018). Emerging emergency population; the elderly and end-of-life patients. In T. Chakorn (1st Ed.), *First hour in Emergency Room 2018: a journey towards the next decade of emergency medicine* (pp. 200-214). Bangkok: P.A. Living Co., LTD.
- **Ruangsomboon O**. (2019). The optimal post-cardiac arrest care. In T. Chakorn (2nd Ed.), *First hour in Emergency Room 2019: the optimal Emergency Resuscitation* (pp. 221-237). Bangkok: P.A. Living Co., LTD.

C. Abstracts

Posters:

- **Makdee O.** and Nakornchai T. Efficacy of High-flow Nasal Cannula for Emergency Patients with Cardiogenic Pulmonary Edema: A Randomized Controlled Trial*. In: The Society of Academic Emergency Medicine: SAEM 2017, 16-19 May 2017, Orlando, Florida, USA.
- **Ruangsomboon O.**, Mekavuthikul P., Chakorn T., Monsomboon A., Prapruetkit N., Surabenjawong U., Limsuwat C., Riyapan S., Chaisirin W. The Use of 0-1 Hour Algorithm Compared to 0-3 Hour Algorithm to Rule-in and Rule-out Acute Myocardial Infarction Using a High Sensitivity Cardiac Troponin T Assay in Emergency Patients*. In: International Conference on Emergency Medicine (ICEM) 2018, 6-9 June 2018, Mexico City, Mexico

Orals:

- **Ruangsomboon O**. Nasal High Flow Oxygen Versus Conventional Oxygen Therapy for Do-Not-Intubate Patients: a Randomized Crossover Study*. In: International Conference on Emergency Medicine (ICEM) 2019, 12-15 June 2019, Seoul, South Korea

* Abstract Presented

XV. INVITED LECTURES AND SYMPOSIUMS

- Will My Patient Wake Up: Post Cardiac Arrest Care. In: The 8th Critical Care Conference in Thailand & APCCCM Stand Alone Conference 2017, 22-24 June 2017, Bangkok, Thailand
- New Features to Faster Diagnosis of MI. In: First hour in Emergency Room 2017 “Integration of Care; From Pre-hospital to Definitive Care”, 23-25 August 2017, Bangkok, Thailand
- Nasal High Flow: The New Innovation Towards Emergency Patients with Cardiogenic Pulmonary Edema. In: The 9th Annual Congress of Cardiology-2017 (ICC-2017), 15-17 November 2017, Singapore.

- Palliative Care in Emergency Room. In: Siriraj International Conference in Medicine and Public Health 2018 (SICMPH 2018), 1-3 August 2018, Bangkok, Thailand
- Emerging Emergency Population: The Elderly and end-of-life Patients. In: First hour in Emergency Room 2018: A Journey Towards the Next Decade of Emergency Medicine, 15-17 August 2018, Bangkok, Thailand
- Critical care: Non-invasive Ventilation “I Prefer High-flow Nasal Cannula”. In: The 3rd annual meeting of Thai College of Emergency Physicians: The 21st Century of Emergency Care System, 25-27 March 2019, Chonburi, Thailand
- The Optimal Post-cardiac Arrest Care. In: First Hour in Emergency Room 2019: The Optimal Emergency Resuscitation, 21-23 August 2019, Bangkok, Thailand
- Updated Heart Failure International and Thai guidelines. In Roche Connect the Dots: NT-proBNP Panel Discussion, 8 June 2019, Bangkok Thailand
- Post-cardiac Arrest Care. In: Post-cardiac Arrest Workshop for Critical Care Nurses, 27 September 2019, Bangkok, Thailand
- Informative counseling. In: Doctor-patient communication skills workshop, 16-18 October 2019, Bangkok, Thailand
- Tips and Tricks of Advanced Care Plan Discussion in Special Situation. In: Siriraj Palliative Care Day 2019, 20-22 November 2019, Bangkok, Thailand

XVI. COMMUNITY

- Volunteered medical provider/commander in multiple running events from 2012-present
- Volunteered instructor in BLS for laypersons, taxi-drivers and junior-high/high school students in Bangkoknoi district from 2018-present