Improving Outcomes from Pre-hospital and Emergency Care across the Asia-Pacific

STUDY PROPOSAL REQUEST FORM

Please complete the form and email to PAROS secretariat at patricia.tay@scri.edu.sg by the stipulated date. You will be notified in due time on whether your study has been accepted for presentation.

Reminder: Please check the list of existing proposals and publications from https://www.scri.edu.sg/crn/pan-asian-resuscitation-outcomes-study-paros-clinical-research-network-crn/paros-publications/ to avoid duplications of proposals. Abstract and manuscript must be sent to PAROS chairs for approval before submission for presentation/publication.

1. BASIC INFORMATION

Name: Liu Nan	**Designation:** Associate Professor
Email: liu.nan@duke-nus.edu.sg	**Country:** Singapore

2. TYPE OF REQUEST (Please select one)

☐ New Study Proposal (initial) ☒ Secondary Analyses ☐ Explanatory Analyses

3. STUDY TITLE

Development and Validation of the Pan-Asian ROSC After Cardiac Arrest (PA-RACA) Score

4. ABSTRACT OF STUDY PROPOSAL

In no more than 350 words, describe the study under the given headings below.

Objectives/Hypotheses

In this study, we aim to develop and validate Pan-Asian ROSC After Cardiac Arrest (PA-RACA) score to assess the probability of ROSC among OHCA patients in the Pan-Asian population. We will develop two scores: the first score is based on all data without DA-CPR and the second score is based on data with DA-CPR. We hypothesize that PA-RACA score outperforms the ROSC after cardiac arrest (RACA) score that was derived from German OHCA registry. Moreover, we hypothesize that the DA-CPR information is valuable in improving the performance of ROSC prediction.

Methodology (To include sample size, settings, inclusion & exclusion criteria, etc. For secondary & explanatory analyses: include statistical plan, type of analyses, measurement, etc.)

We will conduct a retrospective analysis of data collected in the PAROS registry. Paediatric cases, cases that were conveyed by non-emergency medical services (EMS), and cases with incomplete records were excluded from the study. We will build two scores: PA-RACA and PA-RACA-DA. We will use all available data to develop the PA-RACA score, and use the data from countries that have DA-CPR implemented to develop the PA-RACA-DA score. In addition to traditional statistical modeling, we will also explore the use of machine learning algorithms for score derivation.

Significance of the study (e.g. provide brief description on how the study can improve current

Survival is the most consistently captured outcome across countries for out-of-hospital cardiac arrests (OHCA), with return of spontaneous circulation (ROSC) representing the earliest endpoint for 'unbiased' initial resuscitation success. The RACA score was developed to predict ROSC and has

been validated in several European countries. Its validation on PAROS data showed moderate discrimination performance (*Liu N, Ong MEH, et al. Resuscitation. 2020 Feb 5;149:53-59*). This motivates us to develop our own Pan-Asian version of RACA score. Our study will be world largest in ROSC prediction and the novelty is the inclusion of DA-CPR information in the score.

For Official Use (Assessor only)

(A) Score (please highlight the appropriate score):

1	2	3	4	5	6	7	8	9	10

Unfavourable   *Favourable*

(B) Comments (free text):

GUIDELINES FOR PREPARING NEW PROPOSAL PRESENTATION

If your study proposal has been accepted for presentation, you will be notified by the Secretariat. Please prepare your presentation slides in accordance to the following instructions. Each presenter is given 10 minutes to present (8min presentation + 2min Q&A).

General Instructions

1. Presentation must include the following sections:
   a. Introduction
   b. Objectives/Hypotheses
   c. Methodology
   d. Significance

2. Limit total number of slides to not more than 12. The following are the recommended number of slides for each section.
   a. Introduction – maximum of 2 slides
   b. Objectives/Hypotheses – maximum of 2 slides
   c. Methodology – maximum of 6 slides
   d. Significance – maximum of 2 slides

3. Try to use big fonts and contrasting colours to increase readability e.g.
   a. Black/dark blue font against white background
   b. White/yellow font against black background
   c. Black font against blue background

For any enquiries, please contact PAROS secretariat at paros.secretariat@yahoo.com