

PACCMAN



# NEWSLETTER

2019 Edition Issue 2



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## Non-Invasive Ventilation in Children with Paediatric Acute Respiratory Distress Syndrome

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### *In this issue ...*

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Upcoming studies  
Hong Kong Children's Hospital PICU  
Upcoming event  
Joining us



### **Our New members**

Dr Justin Wang from University Malaya Medical Centre  
Dr Michelle low from University Malaya Medical Centre  
Dr Lee Siew Wah from Sultanah Aminah Hospital  
Dr Ririe Fachrina Malisie from Sumatera Utara University Hospital  
Dr Tai Chian Wern from Universiti Kebangsaan Malaysia Medical Centre

# *Chairperson's Message ...*



It will be close to 4 years since PACCMAN started and I am proud that we have grown from our initial 10 pioneer sites across 5 countries to 31 sites across 12 countries. Being a very young research network, it is always good to reflect on our achievements and look ahead to us growing as a collaborative network.

For a young network, we have demonstrated that we can come together to execute and complete studies that we planned. Our first study on paediatric acute respiratory distress syndrome (PARDS) was indeed a successful one. We recruited close to 400 patients in this retrospective study and published, till date, 3 articles in peer-reviewed journals. One manuscript is currently being peer-reviewed and we look forward to the publication of this 4th article using data from this cohort.

We have also been successful in getting small seed grant funding for collaborative work in the region via PACCMAN. Two studies – paediatric traumatic brain injury (TBI) and severe pneumonia are funded studies. The paediatric TBI is on-going and in the active phase of patient recruitment. The severe pneumonia study is slated to start early 2020. In addition to funded studies, PACCMAN is also engaged in other studies that are not funded, but equally important for the region. The prospective PARDS study, is currently active and recruiting patients. An end-of-life study in paediatric intensive care units and nursing research priorities in Asia is currently in the planning stages.

Looking ahead, our next meeting will be held in conjunction with the Asian Pediatric Mechanical Ventilation Forum in Shanghai, China in March 2020 (26th – 28th). Our meeting will be held on Sunday, 29th March 2020. We are due for election for PACCMAN's office-bearers in 2020. I would like to propose some additions to the main and scientific committee for the coming years. In addition to the chairperson and 2 deputy chairpersons, there will be 2 exco members in the main committee. For the scientific committee, we will have positions for 3 new members, with one member focusing on research within the acute/emergency/resuscitation aspect. I have approached current office bearers – Dr. Phan Huu Phuc , Dr. Rujipat Samransamruajkit and Dr. Judith Wong Ju-Ming and all have agreed to stand for re-elections for their respective posts (deputy chairpersons, scientific committee chair). I am also putting myself up for re-election in March 2020. We are looking for suitable candidates for all these positions as well as the new positions in both the main and scientific committee.

# Cont'd...



With these new additions, the current exco will have more active members to contribute to the growth and sustainability of PACCMAN. We will be circulating the nomination papers in early 2020 so that members will know who is standing up for elections in March 2020. Stay tuned for more details!



*Dr Lee Jan Hau  
PACCMAN Chairman*

PACCMAN would have not grown over the past few years without the effort and contribution from everyone in the group. I would like to thank everyone for your time and effort in the work that PACCMAN is involved in. Without your hard work, all this will not be possible. I sincerely hope that we will continue to band together to contribute to the much research work that is needed in Asia. Wishing everyone a good holiday season ahead and best wishes for 2020!

Yours sincerely,

A handwritten signature in black ink that reads "Jan Hau".

Jan Hau

# Study Updates 1 ...



## **Paediatric Traumatic Brain Injury (pTBI) Study 1: Retrospective design ~ Manuscript Abstract ~**

**Title: Variation in intensive care practices for moderate to severe traumatic brain injury: A multi-national initiative**

**Study lead:** Dr Chong Shu Ling, Department of Emergency Medicine, KK Women's and Children's Hospital

### **Background and Objectives**

Traumatic brain injury (TBI) remains an important cause of death and disability. We aim to report the injury epidemiology and management of moderate to severe TBI in Asian paediatric intensive care units (PICUs) and identify risk factors for mortality and poor functional outcomes.

### **Methods**

We performed a retrospective chart review in PICUs of the Paediatric Acute & Critical Care Medicine Asian Network (PACCMAN) between January 2014 and October 2017. We included children < 16 years old admitted to the PICU with a Glasgow coma scale (GCS)  $\leq$  13. We obtained data on patient demographics, injury circumstances, and PICU management. We performed a multivariate analysis predicting for mortality and poor functional outcomes.

### **Results**

We analysed 380 children with moderate to severe TBI. Most injuries were a result of road traffic injuries (174, 45.8%) and falls (160, 42.1%). Fifty-six children died (14.7%), with no difference in mortality between high-income countries (HIC) and non-HIC sites. Among those who survived, more children in HIC sites had a good functional outcome on discharge (79, 52.0%) compared to non-HIC sites (53, 28.3%,  $p < 0.001$ ). Poor functional outcomes were associated with: non-HIC (aOR 2.17, 95% CI 1.30-3.69,  $p = 0.003$ ), GCS < 8 (aOR 5.84, 95% CI 3.54-9.87,  $p < 0.001$ ), and involvement in a road traffic collision (aOR 2.12 95% CI 1.24-3.67,  $p = 0.007$ )

### **Conclusions**

We described paediatric TBI injury epidemiology in Asia and identified risk factors for poor neurological outcomes among children with TBI in Asia, thus highlighting the need for further research in these high risk groups.



## **Paediatric Traumatic Brain Injury (pTBI) Study 2: Prospective design**

**Title:** Does 3% hypertonic saline decrease mortality and improve long-term neurological outcomes among children with traumatic brain injury?

**Study lead:** Dr Chong Shu Ling, Department of Emergency Medicine, KK Women's and Children's Hospital

**AIM:** To compare 30-day mortality risk among children < 16 years with moderate to severe TBI treated 3% HTS, compared to mannitol.

**STUDY DURATION:** July 2018 – June 2020 (Still OPEN to recruiting sites)

**INCLUSION AND EXCLUSION CRITERIA:** We will include all children < 16 years with moderate to severe TBI (Glasgow Coma Scale [GCS]  $\leq$  13) admitted to the paediatric intensive care unit (PICU). We will exclude centres without a paediatric neurosurgical service and children 16 years and older, as well as children with neurological deficits at baseline.

We are pleased to share the numbers recruited for our PROSPECTIVE pTBI study thus far.

As of today, KK Women's and Children's Hospital, National University Hospital, Beijing Children's Hospital, Children's Hospital of Chongqing Medical University, Children's Hospital of Fudan University, Sarawak General Hospital and University Malaya Medical Centre have recruited 62 cases altogether.



Interested members please contact  
Dr Chong Shu Ling, [Chong.Shu-Ling@kkh.com.sg](mailto:Chong.Shu-Ling@kkh.com.sg) or Tan Si Li,  
[Tan.SiLi@kkh.com.sg](mailto:Tan.SiLi@kkh.com.sg) for more study  
details.





## Recruitment Status (22-10-2019)

| Country           | Institution   | Cases Recruited |
|-------------------|---|-----------------|
| Singapore         | KK Women's and Children's Hospital                        | 11              |
| China, Shanghai   | Children's Hospital of Fudan University                   | 8               |
| China, Beijing    | Beijing Children's Hospital                               | 16              |
| Malaysia, KL      | University Malaya Medical Centre                          | 5               |
| China, Chongqing  | Children's Hospital of Chongqing Medical University       | 18              |
| Singapore         | National University Hospital                              | 3               |
| Malaysia, Sarawak | Sarawak General Hospital                                  | 1               |
| Thailand, Bangkok | Chulalongkorn University                                  | 0               |
| Thailand, Bangkok | Ramathibodi Hospital                                      | 0               |
| Japan, Kobe       | Pediatric Critical Care Medicine Kobe Children's Hospital | 0               |
| <b>Total</b>      |   | <b>62</b>       |

# Study Updates 2 ...



## **PEDSAC- A Retrospective Epidemiologic study in Paediatric Sepsis in Asia**

**Study lead:** Prof Rujipat Samransamruajkit, King Chulalongkorn Memorial Hospital, Thailand

### **Recruitment Completed**



- In the process of final analysis of all data.
- Target to finish the analysis by the end of Dec 2019.
- Manuscript writing will start after analysis
- Preliminary result was presented at the ESPNIC, Salzburg

| No.          | Site name                               | n          | Percent    |
|--------------|---|------------|------------|
| 1            | Maharaj Nakorn Chiang Mai, Thailand     | 30         | 11.07      |
| 2            | National University Hospital, Singapore | 29         | 10.7       |
| 3            | Sarawak General Hospital, Malaysia      | 20         | 7.38       |
| 4            | Ramathibodi Hospital, Thailand          | 30         | 11.07      |
| 5            | King Chulalongkorn University Hospital, | 44         | 16.24      |
| 6            | Faculty of Medicine Siriraj Hospital, T | 13         | 4.8        |
| 7            | KK Women & children hospital, Singapore | 50         | 18.45      |
| 8            | Hat Yai Medical Center, Thailand        | 39         | 14.39      |
| 9            | Universiti Kebangsaan Malaysia Medical  | 16         | 5.9        |
| <b>Total</b> |   | <b>271</b> | <b>100</b> |

# Study Updates 3 ...



## **PARDS Pro-Asia Study: Pediatric Acute Respiratory Distress Syndrome; A Prospective Asian Multicenter Study**

**Study lead:** Dr Judith Wong, Children's Intensive Care Unit, KK Women's and Children's Hospital

**ABSTRACT:** Mortality rates in children with pediatric acute respiratory distress syndrome (PARDS) are higher in Asia compared to other regions. In adults with acute respiratory distress syndrome, the only therapy that improves mortality rates is a lung protective ventilation strategy. The pediatric ventilation recommendations by the Pediatric Acute Lung Injury Consensus Conference (PALICC) are extrapolated from evidence in adults, including ventilation with low tidal volume, low peak/plateau pressures and high-end expiratory pressure. A recent retrospective study of ventilation practices in Asia showed varying practices with regards to pulmonary and non-pulmonary therapies, including ventilation.

**AIMS:** To determine the prevalence and outcomes of PARDS in the Pediatric Acute and Critical Care Medicine Asian Network (PACCMAN) and the use of pulmonary (mechanical ventilation, steroids, neuromuscular blockade, surfactant, pulmonary vasodilators, prone positioning) and non-pulmonary (nutrition, sedation, fluid management, transfusion) PARDS therapies.

**INCLUSION CRITERIA:** Recruitment will be based on the PALICC criteria and follow up will continue to 28days or until PICU discharge.



Sites recruitment are still open. Interested members please contact Dr Judith Wong, [Judith.wong.jm@singhealth.com.sg](mailto:Judith.wong.jm@singhealth.com.sg) or Patricia Tay, [patricia.tay@scri.edu.sg](mailto:patricia.tay@scri.edu.sg) for more study details.





## Study update through Nov 2019

| No. | Site & Contact  | IRB approved | Agreement completed | Enrolled first patient | Number enrolled |
|-----|---|--------------|---------------------|------------------------|-----------------|
| 1   | KK Women's and Children's Hospital, Singapore   | √            | NA                  | √                      | 87              |
| 2   | National Hospital of Pediatrics, Vietnam  | √            | √                   |                        |                 |
| 3   | Siriraj Hospital, Thailand  | In prog.     |                     |                        |                 |
| 4   | Ramathibodi hospital, Thailand  |              |                     |                        |                 |
| 5   | King Chulalongkorn Memorial Hospital, Thailand  | In prog.     | √                   |                        |                 |
| 6   | Children's Hospital of Fudan University, China  |              |                     |                        |                 |
| 7   | Chongqing Hospital, China   | √            | √                   | √                      | 33              |
| 8   | Guangzhou Women and Children's Medical Center, China  | √            | √                   | √                      |                 |
| 9   | Shengjing hospital of China Medical University, China   | In prog.     |                     |                        |                 |
| 10  | Hong Kong Children's Hospital, Hong Kong  | √            |                     |                        |                 |
| 11  | Sarawak General Hospital, Malaysia  | √            | √                   |                        |                 |
| 12  | Sultanah Aminah Hospital, Malaysia  | In prog.     | In prog.            |                        |                 |
| 13  | University Malaya Medical Centre, Malaysia  |              |                     |                        |                 |
| 14  | Universiti Kebangsaan Malaysia Medical Centre, Malaysia   | √            | In prog.            |                        |                 |
| 15  | Advanced Pediatrics Centre Post Graduate Institute of Medical Education and Research (PGIMER), India      | In prog.     |                     |                        |                 |
| 16  | Sanglah Hospital Denpasar, Indonesia  | √            |                     |                        |                 |
| 17  | Harapan Kita Children and Women hospital, Indonesia   | √            | √                   |                        |                 |
| 18  | Hyogo Prefectural Kobe Children's Hospital, Japan   | √            | √                   |                        |                 |
| 19  | Aga Khan University Hospital, Pakistan  |              |                     |                        |                 |
| 20  | Khoo Teck Puat - National University Children's Medical Institute National University Hospital, Singapore | √            | √                   |                        |                 |

# Study in Pipeline 1 ...



## **Severe Pneumonia in Children (S-PIC) Study: A Comparative Effectiveness Study of Children with Severe Pneumonia in Asia**

Study lead: Dr Lee Jan Hau

**ABSTRACT:** Severe pneumonia is a leading cause of mortality and morbidity in children worldwide. Mortality rates from pediatric severe pneumonia are three times higher in South East Asia compared to the Western hemisphere. The lack of description of epidemiology, current management strategies and outcomes of children with severe pneumonia admitted to pediatric intensive care units (PICUs) in Asia is a barrier to improving paediatric critical care in the region. The lack of a sustainable paediatric critical care network in Asia makes multinational PICU studies challenging.

**AIM:** To estimate the burden of paediatric patients admitted to Asian PACCMAN PICUs due to severe pneumonia that develop pediatric acute respiratory distress syndrome; To characterize etiologies, identify risk factors associated with morbidity and mortality, and develop prognostic prediction models.

**DESIGN:** A prospective multicenter cohort study over 18 months to recruit 1800 children with severe pneumonia. Pertinent demographic, clinical, microbiological, critical care support and management data will be collected to enable an investigation of the association between risk factors and clinical outcomes in these children.

- Sites are in midst **IRB application & project agreement negotiation**
- **Database** in development phase



# Cont'd...



| No. | Lead PIs                        | Sites   |
|-----|---------------------------------|---|
| 1   | Lee Jan Hau                     | KK Women's and Children's Hospital  |
| 2   | Phuc Huu Phan                   | National Hospital of Pediatrics   |
| 3   | Rujipat Samransamruajkit        | King Chulalongkorn Memorial Hospital  |
| 4   | Lu Guoping; Zhu Xuemei          | Children's Hospital of Fudan University   |
| 5   | Feng Xu; Dang Hongxing          | Chongqing Hospital  |
| 6   | Huang Li                        | Guangzhou Women and Children's Medical Center   |
| 7   | Liu Chunfeng; Wei Xu            | Shengjing hospital of China Medical University  |
| 8   | Ellis Hon; Jeff Wong Chin Pang  | Hong Kong Children's Hospital   |
| 9   | Cheung Hon Ming                 | Prince of Wales Hospital  |
| 10  | Chin Seng Gan; Michelle Low     | University Malaya Medical Centre  |
| 11  | Anis Siham Zainal Abidin        | Women and Children Hospital   |
| 12  | Tang Swee Fong; Lee Pei Cheun   | Universiti Kebangsaan Malaysia Medical Centre   |
| 13  | Florentina Ty                   | The Medical City  |
| 14  | Muralidharan Jayashree          | Advanced Pediatrics Centre Post Graduate Institute of Medical Education and Research (PGIMER) |
| 15  | Felix Liauw                     | Harapan Kita Children and Women hospital  |
| 16  | Hiroshi Kurosawa; Kazunori Aoki | Hyogo Prefectural Kobe Children's Hospital  |
| 17  | Qalab Abbas                     | Aga Khan University Hospital  |



Sites recruitment are still open. Interested members please contact Dr Lee Jan Hau, [lee.jan.hau@singhealth.com.sg](mailto:lee.jan.hau@singhealth.com.sg) or Patricia Tay, [patricia.tay@scri.edu.sg](mailto:patricia.tay@scri.edu.sg) for more study details.

# ***Study in Pipeline 2 ...***



## **Withholding and Withdrawal of Life-Sustaining Treatments in Paediatric Intensive Care Unit in Asia**

### **Background:**

There is a lack of studies looking at paediatric end-of-life (including brain death/arrest) in Asian countries. In literature, end-of-life studies are mainly from adult ICUs. End-of-life in PICU only received 423 hits and dominated by the European and Americans populations. Data on End-of-life in PICU in Asian countries are comparatively sparse and available for only a few countries. Being culturally very different from the West, these studies are not representative of Asia. Thus we need to have an Asia study. With the data collected, guidelines relating to end-of-life decision making and practice in Asian countries can be developed.

# **NOTICE**

- Change of study lead to Dr Mioko Kasagi, a PICU fellow at Tokyo Metropolitan Children's Hospital
- Prof Naoki Shimizu will supervise the study

# ***Study in Pipeline 3 ...***



## **Nursing Research Priorities for Paediatric Critical Care Nursing in Asia**

Study lead: Nurse Poh Pei Fen

**Objectives:** Different geographic regions may have different research priorities in the paediatric critical care nursing domain. This study aims to identify priorities in nursing research as defined by paediatric intensive care nurses across Asia

**Setting:** Paediatric intensive care units (PICUs) in Asia

**Inclusion criteria:** Paediatric intensive care clinical nurses, nurse manager, nurse educators, and nurse researchers will be included.

**Sample size:** A minimum targeted sample of 8 expert nurses in each PICU from a minimum of 1 PICU in each Asia country.

**Design:** A three-round Delphi method will be used to identify and prioritise nursing research topics of importance to PICUs in Asia. Round one involves qualitative data collection in electronic format via the Survey Monkey application. Participants will be asked to list three to five areas of research topics that they consider are important. Qualitative responses will be analysed by content analysis and research statements will be generated. The results generated from Round 1 will be converted into a questionnaire and used for the subsequent two rounds. Based on the results from Round 1, the same nurses will be invited to rank each research according to its importance to their respective nursing areas using a six-point scale, ranging from not important to extremely important.

In Round 3, the anonymous mean value of the group response from Round 2 will be made available to the participants. They will rate the same research topics again according to its importance with the information of the group response of Round 2. Descriptive and inferential statistics will be used for data collected from Round 2 and 3.

**Conclusion:** The results of this study will inform a research agenda within the Asian region so as to enable future studies to be performed in a more focused manner and to enhance an Asian collaborative platform for PICU nursing research



# Introduction to the Hong Kong Children's Hospital PICU ...

## The Hong Kong Children's Hospital Paediatric Intensive Care Unit

Dear PACCMAN members,

Greetings from Hong Kong. I would like to introduce the newly opened Hong Kong Children's Hospital Paediatric Intensive Care Unit to all of you.

The Hong Kong Children's Hospital is opened on the 27<sup>th</sup> March 2019, and it is the first children's hospital in Hong Kong which serve as a tertiary referral centre for paediatric subspecialties including haematology and oncology, metabolic medicine, nephrology, cardiology, paediatric surgery, neonatal intensive care and paediatric intensive care.

We are currently a 6-bedded Paediatric Intensive Care Unit and more beds will be opened in the future. Our unit is led by Professor Ellis Hon, who has published more than 300 peer-reviewed scientific papers. Promoting research is one of the missions of HKCH in achieving excellence in paediatrics; research laboratory and clinical trial centre will be open for service in the near future.

The research interests of our Paediatric Intensive Care Unit includes respiratory medicine, neurocritical care, infectious disease, oncology, critical care nutrition, critical care nephrology, paediatric ECMO, critical care transport, quality of life, injuries and poisonings.

We look forward to future collaborations with all of you!

Yours Sincerely,



Dr Karen Leung  
Associate Consultant  
Paediatric Intensive Care Unit, Hong Kong Children's Hospital  
[karen.leung@ha.org.hk](mailto:karen.leung@ha.org.hk)



# Upcoming Event ...

## ~ Save the Date ~

Our 4<sup>th</sup> PACCMAN meeting will be held in conjunction with the 3<sup>rd</sup> APMV 2020 in Shanghai

### Dates to note:

3<sup>rd</sup> APMV on 26-29 March 2020

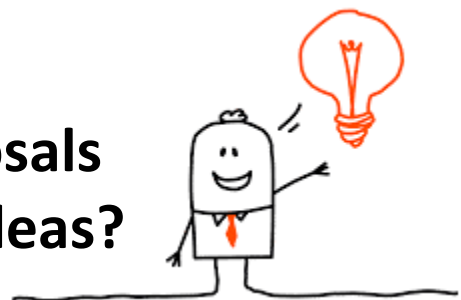
PACCMAN Meeting on 29 March 2020

To register: <http://icccmf.com/en/index.asp>

### Tentative PACCMAN meeting agenda:

- Updates on current studies: pTBI, PEDSAC, PARDS Pro-Asia, S-PIC and EOL
- Constitution matters and new members
- Potential PACCMAN studies \*
- Other non-PACCMAN collaborative studies

**\* Calling for study proposals**  
**You have new research ideas?**



Do pen down your ideas and send it to us ([patricia.tay@scri.edu.sg](mailto:patricia.tay@scri.edu.sg)) by **Jan 2020**. You may download the proposal submission form from our website, <https://www.scri.edu.sg/crn/pediatric-acute-critical-care-medicine-asian-network/research/>

Proposals will be collated and submitted to the PACCMAN Chairs for their review and comments before putting up for discussion at the PACCMAN meeting.

# Join Us ...

WELCOME

To become one of us, please go to:

<https://www.scri.edu.sg/crn/pediatric-acute-critical-care-medicine-asian-network/members/> to download the registration form. Kindly submit the completed form to [patricia.tay@scri.edu.sg](mailto:patricia.tay@scri.edu.sg).

If you have any feedback or would like to feature updates from your country in the PACCMAN newsletter, kindly write to Ms Patricia Tay, PACCMAN secretariat, at [patricia.tay@scri.edu.sg](mailto:patricia.tay@scri.edu.sg).



We do not have a fixed criteria to join as member. We welcome anyone who is keen to collaborate and share common goal of developing best practices to improve survival in critically ill children in Asia. If you have any colleagues or friends who are interested, please do refer them to us.

