

Hong Kong Journal of Paediatrics

香港兒科醫學雜誌 (New Series)

An Official Publication of
Hong Kong College of Paediatricians &
Hong Kong Paediatric Society
c/o Hong Kong College of Paediatricians, Room 801,
Hong Kong Academy of Medicine Jockey Club Building,
99 Wong Chuk Hang Road, Aberdeen, Hong Kong.

Editorial Board

Chief Editor

CHEUNG Yiu Fai (張耀輝)

Associate Editors

CHUNG Hon Yin (鍾侃言)

LAM Hung San (林鴻生)

LEUNG Ting Fan (梁廷勳)

Honorary Secretary

CHAN Ching Ching (陳晶晶)

Members

CHAN Chi Fung (陳志峰)*

CHAO Sih Yin (趙式言)

CHEUK Ka Leung (卓家良)

FUNG Po Gee (馮寶姿)

HON Kam Lun (韓錦倫)

HUI Wun Fung (許桓峰)

IP Patrick (葉柏強)

KWAN Yin Wah (關彥華)

KWONG Ling (鄭玲)

LEE Pui Wah (李珮華)

LI Albert Martin (李民瞻)

LIU Kam Wing (廖鑑榮)

SIU Luen Yee (蕭鑾儀)

TSAO Yen Chow (曹延洲)

TSE Kei Chiu (謝紀超)

WONG Hiu Lei (王曉莉)

YEUNG Chap Yung (楊執庸)

YEUNG Wai Lan (楊慧蘭)

Honorary Advisors to the Editorial Board

Andrew BUSH, *United Kingdom*

Don M. ROBERTON, *Australia*

David K. STEVENSON, *USA*

GUI Yong-Hao, *China*

Business Manager

Tsoi Nai Shun (蔡迺舜)**

*Representing HK College of Paediatricians

**Representing HK Paediatric Society

Publisher

Hong Kong Journal of Paediatrics is published by Medcom Ltd, Flat E8, 10/F, Ka Ming Court, 688-690 Castle Peak Road, Kowloon, Hong Kong SAR. Tel: (852) 2578 3833, Fax: (852) 2578 3929, Email: mcl@medcom.com.hk

Indexed in EMBASE/Excerpta Medica, Science Citation Index Expanded (SCIE) and Scopus

Website: www.hkjpae.org

ISSN 1013-9923

Editorial

The Window of Opportunity to Establish Paediatric Research Networks in the Greater Bay Area

The mix of original articles from the Pearl of the Orient, Las Vegas of the East, and Garden City in Asia makes this an interesting issue of the Journal. Ngan et al reported the prevalence, risk factors associated with attention deficit hyperactivity disorder (ADHD) and the impact of ADHD on seizure outcome in Hong Kong children with recent onset epilepsy.¹ With the finding of an increased prevalence of ADHD among children with recent onset epilepsy compared with the general population, they suggested screening for ADHD in this group of children. Yu et al from Hong Kong reviewed their experience on solid liver tumours with a cystic appearance and highlighted the difficulties in the initial diagnosis due to similar imaging appearance and possible pathological overlap between undifferentiated embryonal sarcoma and mesenchymal hamartoma.² Lee and Ong from Singapore reported that omission of routine heparin saline flush-lock did not compromise the patency of totally implantable venous access devices in children with cancers and blood disorders.³ Finally, colleagues from Macau contributed an article on the evaluation of efficacy of hepatitis B vaccine and immunoglobulin in preventing vertical transmission based on retrospective analysis of their hospital data.⁴

The contribution from investigators in Macau appears timely, especially given the recent opening of the Hong Kong-Zhuhai-Macau Bridge only five months ago. This world's longest sea crossing together with the high-speed rail link represent important links in the development of the dynamic hub of the Greater Bay Area, which includes the Hong Kong Special Administrative Region, the Macau Special Administrative Region, and nine cities in Guangdong Province: Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing. This represents the largest cluster among other Bay Areas, notably the Tokyo and San Francisco Bay Areas. Would this master plan that covers 56,000 square kilometres and a combined population of about 70 million people heralds a new era of academic interactions, clinical exchanges and research collaboration in paediatric medicine? The answer to this question and the eventual outcome would depend among other factors on how well we prepare ourselves in grasping the window of opportunity. In an editorial of the Journal not long ago, it was remarked that the new Hong Kong Children's Hospital would provide an unprecedented opportunity for paediatric research by being the tertiary referral centre for complex, serious, and rare childhood diseases.⁵ One cannot but only imagine the impact of evidence generated from a mega paediatric research network with a drainage area of more the fifty thousand square kilometres inhabited by 70 million people on the care of our patients.

Appraisal of recent publications from colleagues in our neighbourhood can provide us with an idea of the nature of innovative works performed by our friends, and more importantly, show the potentials and opportunities for paediatric research networking in the Greater Bay Area at different levels. Liang et al explored the implementation of artificial intelligence-based system to diagnose

paediatric diseases.⁶ The team showed that machine learning classifiers can query massive electronic health records in a manner similar to a hypothetical-deductive reasoning used by physicians based on about 100 million data points from about 1.4 million paediatric patient visits. Their model was shown to be comparable to experienced paediatricians in diagnosing common childhood diseases. At a cellular level, He et al examined the role of myeloid-derived suppressor cells in neonates and found that these cells may be critical for the regulation of inflammatory processes such as necrotising enterocolitis in newborns.⁷ At the patient level, based on their large congenital heart patient cohorts included in the Guangdong Registry of Congenital Heart Disease, Ou et al examined risk factors of congenital heart disease in Guangdong and found that maternal environmental exposure, occupation and perinatal diseases, and medication use are dominant risk factors in Southern China.⁸ At the public health level, the gigantic Born in Guangzhou Cohort study has to date recruited 33,000 babies and their mothers, with the aim of reaching 50,000 baby-mother sets by 2020, has already yielded important results and attracted intense interest from the international academic community to mine the vast dataset.⁹ These are just some of the examples that serve to encourage us to strategise among ourselves to form paediatric research network in the Area, which foreseeably will become one of the largest paediatric research network in the world.

We can learn from established large paediatric research networks, based on which we could propose our agenda, explore direction, and consolidate plans for collaboration and networking in the Greater Bay Area. Several years ago, the American Academy of Paediatrics have identified about 70 exclusively paediatric networks in North America.¹⁰ Of these, half are specialty care networks, 29% are primary care and 21% are disease-specific networks. One of the most fruitful outcomes of paediatric research networking is exemplified by the Childhood Cancer Research Network, which registered all patients with childhood cancers treated in the Children's Oncology Group hospitals and institutions in North America.¹¹ The close collaboration of different experts, ranging from clinicians, scientists, epidemiologist, and biostatisticians have provided the much needed data for clinical paediatric oncology practice. Another example is the Pediatric Heart Network, established by the National Heart, Lung, and Blood Institute in the United States in 2001.¹² This infrastructure consists of nine main clinical sites, conducting studies ranging from phase 1, 2, and 3 clinical trials,

observation studies, and quality improvement, nursing, and health services research studies. Challenges in the process of forming and developing research networks are to be expected. These would include and not limited to regulatory, logistic, financial and interpersonal hurdles. Nonetheless, for those committed to materialise our dream and want nothing but success, these challenges are meant to be overcome.

Change is the only constant in life. Heraclitus, a Greek philosopher, was the one quoted to have said this. This is an era of rapid changes. Not only are we witnessing the changes, by grasping the window of opportunity and embracing collaboration, we are the ones who would shape a new era of clinical and academic paediatrics in the Area.

YF Cheung
Chief Editor

References

1. Ngan MYY, Tsang BCH, Kwong KL. Prevalence, risk factors and impact of ADHD on children with recent onset epilepsy. *HK J Paediatr (new series)* 2019;24:65-9.
2. Yu JL, Khong PL, Chiang AKS, Cheuk DKL, Ha SY, Chan GCF. Solid liver tumours with cystic appearance: Do they have the same outcome? *HK J Paediatr (new series)* 2019;24:70-5.
3. Lee ACW, Ong ND. Regular flush-lock is unnecessary to maintain patency of resting totally implantable venous access device. *HK J Paediatr (new series)* 2019;24:80-4.
4. Choi KC, Wong CL, Jeong KM. Effectiveness of Macau hepatitis B vaccination program for newborns from hepatitis B carrier mother. *HK J Paediatr (new series)* 2019;24:76-9.
5. YF Cheung. Research shapes practice: The future of paediatric research (editorial). *HK J Paediatr (new series)* 2017;22:135-6.
6. Liang H, Tsui BY, Ni H, et al. Evaluation and accurate diagnoses of pediatric diseases using artificial intelligence. *Nat Med* 2019; 25:433-8.
7. He YM, Li X, Perego M. Transitory presence of myeloid-derived suppressor cells in neonates is critical for control of inflammation. *Nat Med* 2018;24:224-31.
8. Ou Y, Mai J, Zhuang J, et al. Risk factors of different congenital heart defects in Guangdong, China. *Pediatr Res* 2016;79:549-58.
9. Cyranoski. Gigantic study of Chinese babies yields slew of health data. *Nature* 2018;559:13-4.
10. Slora EJ, Harris DL, Bocian AB, Wasserman RC. Pediatric clinical research networks: current status, common challenges, and potential solutions. *Pediatrics* 2010;126:740-5.
11. Musselman JR, Spector LG, Krailo MD, et al. The Children's Oncology Group Childhood Cancer Research Network (CCRN): case catchment in the United States. *Cancer* 2014;120:3007-15.
12. Burns KM, Pemberton VL, Pearson GD. The pediatric heart network: meeting the challenges to multicenter studies in pediatric heart disease. *Curr Opin Pediatr* 2015;27:548-54.