

# Children's Medical Home in China (CMHC)

## Promoting Early Development of Chinese Children

Yingshin Shi<sup>1</sup>, Tingyu Li<sup>2</sup>, Haiqi Li<sup>3</sup>, Ting Zhang<sup>4</sup>, Guoqiang Chen<sup>5</sup>, Jenny Chen<sup>6</sup>, Michael E. Msall<sup>7</sup>



### Introduction

Despite major advances in infant mortality and life expectancy, there are major gaps in the current health systems of China for early identification and community supports for children with neurodevelopmental disabilities. **The goal of the Children's Medical Home in China (CMHC) project is to implement a preventive and enablement partnership with health professionals, children's hospitals, parents and leading professional and university organizations in China.** We introduce the CMHC model with a focus on community pediatric preventive care and improving health outcomes through engagement and developmental surveillance. **Our vision is to promote best practices through adult learning and to continually improve physical, developmental and behavioral health for all children, especially those experiencing poverty or who are at risk for disability.**

### Methods

Over the past five years, the CMHC program has piloted several virtual training models:

Year	Timeline for Setting up Virtual Training Models
2017	Set up <b>communication WeChat groups and a central training information center</b> to disseminate training and health information to healthcare providers and parents.
2018	Establish a <b>CMHC virtual training platform to provide virtual webinars</b> for pediatric training.
2019	Developed <b>virtual topics and case based training sessions</b> with pre and post questionnaires and exams.
2020	<b>Set three main training courses:</b> Pediatric Basics of Illness Recognition and Management, Colorful Future Preventive Care(newborns-18Y); and Developmental and Behavior Pediatrics(DBP) emphasizing functioning and participation.
2021	Started <b>Virtual WeChart class discussions and workshop training</b> for a pilot group of doctors who completed previous training and passed criterion exams. We explored how to provide virtual clinical skill mentoring for multiple WeChat groups.
2021-2022	<b>Open CMHC training platform</b> to pediatric specialists and to develop DBP training projects in USA and China.

### Results

Since 2018, we provided WeChat group registration 4 times. Our training workshops and health information has been placed in the information center 5 times weekly. We have enrolled 52,725 healthcare providers and 274,868 parents for academic year 2021 (Table 1).

**Table 1. WeChat Group Registration in 27/30 Chinese Provinces**

Registration Date	Parents	WeChat Groups	Physicians
2018	23,913	73	13,771
2019	189,834	106	23,252
2020	209,671	127	29,288
2021.1	249,301	188	44,046
2021.7	274,868	304	52,725

Since 2017, **209 virtual training webinars** have been presented in Mandarin, including **138 webinars** covering the areas of preventive care and developmental and behavioral pediatrics(DBP). Virtual topics and case based training sessions in three main training courses will be finished in 2022 (table 2).

	Patients age		
	0-24 mo	12mo~24mo	25mo~36mo
Pass before training	427	452	451
Pass after training	<b>566</b>	<b>588</b>	588
P value	<0.01	<0.01	<0.01

**Table 3. Current Training Outcome**

Importantly **1,915 healthcare providers signed up for the training of colorful future physical examinations** for children from newborn to 36 months old. In 2021, 717 of them took the exam, and 711 completed post-training questionnaires and exams.

**Table 2. Current Virtual WeChat Class Discussions Training Status**

Three Training Courses	Trained Topics in Each Training Course (Total 120)	1st Training		2nd Training
		Trained Period	Registers (n)	
Pediatric Basics	Pediatric Basics 30	2020	703	2022
	Preventive Care 16	2021	1915	
	Newborn Screens 6	2022	413	
Preventive Care	Newborn to 36m - 13 4-18 years old -7	2021	<b>1915</b>	2022
		2022	413	
DBP	Overall - 36 Comer DBP* -12	2022	1796	2023

\*The training from the Comer Children's Hospital at the University of Chicago. Among the 711 healthcare providers, **575 (98.8%) considered that training met their learning goals; 688(96.6%) believed that training was extremely beneficial to helping families. Comparing baseline with post training skills, significant statistical improvement occurred (p<0.05). These pilot data for participants in the CCMC curricula demonstrated improved knowledge and application in practice.**

### Conclusion and Implications

For the past 5 years, we are reaching our goal to implement a preventive and enablement model of the children's medical home in china aspiring to a vision, so that health is optimized, functioning maximized, children thrive, and families celebrate that no child is left behind.

**Acknowledgment:** 1. UC Provost's Global China Fund 2020 and 2021; 2. General Academic Pediatrics, Comer Children's Hospital, the University of Chicago; 3. Developmental & Behavioral Pediatrics Board, Chinese Association of Pediatrics, Children's Hospital of Chongqing Medical University; 4. Editor-in-Chief of: "The Principle and Practice of Pediatric Primary Care"; 5. Fellowship Training Program Director, University of Chicago, Comer Children's Hospital

**Authors:** Comer Children's Hospital, the University of Chicago: **Michael E. Msall, MD<sup>7</sup>**, Communicating Author, Professor & Section Chief, DBP, CMHC Project PI [mmsall@peds.bsd.uchicago.edu](mailto:mmsall@peds.bsd.uchicago.edu); **Jenny Chen, MD, MBA<sup>6</sup>**, CMHC Project Coordinator, **Yingshin Shi, MD<sup>1</sup>**, General Pediatrics, CMHC Project Co-PI, Founder & Chief Planner of CMHC. **Ting-Yu Li, MD<sup>1</sup>**, Professor, Developmental & Behavioral Pediatrics Board, Chinese Association of Pediatrics. **Haiqi Li, MD<sup>3</sup>**, Professor, Preventive Care Specialist, Editor-in-Chief of: "The Principle and Practice of Pediatric Primary Care"; **Guoqiang Chen, MD<sup>4</sup>**, Professor, NICU, Children's Hospital of Fudan University, International Clinic Center, Shanghai; **Ting Zhang, MD<sup>5</sup>**, Professor, Director, Department of Gastroenterology, Children's Hospital of Shanghai, Jiaotong University