

**From Genes to Communities –
Improving Child Health through Research & Education**

Prof. Lau Yu-Lung
Department of Paediatrics and Adolescent Medicine
The University of Hong Kong, China

Health has been defined by the World Health Organisation as “a state of complete physical, mental and social well-being and not merely the absence of disease.” Hence child health is more than survival, absence of diseases, but also about achieving the full developmental potential of each child. Therefore, curing and preventing diseases is but one of many tasks for improving child health, nevertheless an important task at individual level. At societal level, policy support and universal implementation of evidence-based cost-effective interventions to improve child health is the key to success.

Therefore we have designed a scientific program for our 2017 ASPR Congress that encompasses the full spectrum of child health, from caring and managing rare genetic diseases (individual level) to advocating and implementing the WHO Sustainable Development Goals (SDG societal level) which are extremely ambitious with 169 targets embedded in 17 goals. One of these 17 SDGs relates to health, SDG3 with 9 targets covering a range of topics such as injuries, mental health, noncommunicable diseases in addition to child survival.

Our 2017 ASPR Congress program has addressed many of the above topics. Notably for rare genetic diseases which collectively are not rare, affecting 6% to 8% of the population and 3% to 4% of births, as estimated by the European Union. Use of next generation sequencing and gene editing has transformed rare diseases diagnosis and will revolutionise treatment. I believe experience in managing rare diseases will have positive impact on how to manage common diseases eventually. Health and diseases do not know man-made boundaries. As for societal and policy issues, many topics including absolute and relative poverty, social inequity, injuries and family violence are also discussed within our Congress. In between the spectrum from genes to communities, different disease categories, vaccinations and nursing topics are also earnestly discussed in our Congress. Above all, humanities

are given the due prominence to remind us the trap of “Excellence without a Soul”. Science and humanities should travel side by side. I hope the range of chosen topics has reflected our Congress goal to achieve “From Genes to Communities – Improving Child Health” amply.

Now I shall discuss how a young paediatrician may appreciate and acquire the skills of research and education as a means to improve child health, which is the core value and mission of the Asian Society for Pediatric Research and the Hong Kong College of Paediatricians.

Curiosity and passion for clarity and truth are the fundamental attributes that drive science forward for advancing the practice of medicine. Nurturing these attributes should ideally start at home in the family and during the early school and college years. Students should be judged by their questions and not by their answers just as the Chinese term for “knowledge” which literally means “Learning to ask questions”. Asking a question is akin to constructing a hypothesis, very much like a working diagnosis. The next step is to be able to critically search and review literature. Then, followed by testing the hypothesis with clinical studies or experiments, interpreting the results and drawing conclusion supported by evidence. Even for hypothesis-free research, the subsequent steps still involve asking a question and try to answer with humility, realizing our limitations.

Now come the practical steps. For a young paediatrician, writing up an interesting case report will be a good start, followed by a case series, asking a broader question. Depending on one’s interest, the next step could be a clinical study comparing two groups, an epidemiological study or experimental bench research. The format is always the same with a question asked, followed by searching an answer. Please note not “the” answer, because scientific truth can be elusive and provisional, which may change with time, context, and tools that are used. I shall reflect on my personal journey which started over 30 years ago, writing my first case report. Using case reports, clinical and epidemiological studies as well as basic experimental work that I was involved as examples, I hope to illustrate certain principles, which include local relevancy, opportunities, feasibility, situational issues, collaborative spirit, impact and educational value.