NATIONAL OUTSTANDING CLINICIAN SCIENTIST AWARD 2017

ASSOCIATE PROFESSOR CHONG YAP SENG

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“For his outstanding contributions towards improving population health in Singapore through the study of health and disease in early life, and its potential impact in later life”

Associate Professor Chong Yap Seng is a clinician-scientist with a special interest in fetal growth and early development. His research seeks to benefit population health in Singapore, both for the current and the future generations.

Associate Professor Chong and his team set up the Growing Up in Singapore Towards healthy Outcomes (GUSTO) Study in 2009. GUSTO is one of the most comprehensive longitudinal cohort studies ever conducted in Singapore or anywhere else in the world, involving mothers-to-be and their children. GUSTO is aimed at studying the growth and development of individuals from early life to discover new prevention and early intervention strategies to optimise health. The study is a multi-organisational effort that harnesses research talent from the National University Health System, KK Women’s and Children’s Hospital, A*STAR’s Singapore Institute for Clinical Sciences, and other academic partners locally. GUSTO also collaborates with international researchers from New Zealand and the United Kingdom, among others.

GUSTO researchers recruited over 1200 Singaporean women who volunteered to participate in the birth cohort study between 2009 and 2010. These volunteers are followed from early pregnancy through delivery and as their children grow up, to provide valuable insight into the early determinants of health and disease. Supported by the
Translational Clinical Research Flagship Programme grant from the National Medical Research Council, Ministry of Health, GUSTO has been cited to be one of the leading birth cohort studies in the world with some of the most detailed assessments and analyses of child development, cognition and physical health ever established.

GUSTO has generated over 140 scientific publications since 2012, and the findings have also directly influenced health policy and clinical practice in Singapore. GUSTO researchers discovered that the prevalence of gestational diabetes mellitus (GDM) was much higher than expected and showed that a universal testing policy for GDM would be more cost effective than high-risk screening. They submitted a white paper to MOH in September 2015, which led to MOH recommending universal testing for GDM to all doctors in Singapore.

GUSTO has also been lauded by international reviewers and journal editors for the bold and innovative approaches their researchers have taken in carrying out their studies. For example, their use of magnetic resonance imaging (MRI) as early as 1 week of life for newborn babies has allowed them to study the effects of maternal health, nutrition, and mental state on the baby’s brain and body in a way that no other study has been able to on a large scale. GUSTO has incorporated many new medical technologies like genomics, epigenomics, and metabolomics to bring deeper understanding into the biological factors affecting the long-term health of Singaporeans.

GUSTO’s research work was expanded further when the Singapore PREconception Study of long-Term maternal and child Outcomes (S-PRESTO) cohort study was funded in 2014. This is one of the first and most comprehensive studies of women planning to conceive to be launched in the world and seeks to understand how the health of women before pregnancy affects both the health of the mothers and their babies.

The sustained influence of the early environment, including maternal health and nutrition over the early life course, forms the basis of the "developmental origins of health and disease (DOHaD)" paradigm, which has helped shape the foundation of Associate Professor Chong’s work in GUSTO and S-PRESTO. Under the DOHaD programme, Associate Professor Chong leads a dynamic, highly-collaborative research group.

As a thought leader in the field, Associate Professor Chong has been invited to give numerous lectures and keynotes on the topic, and has been selected to a number of prestigious committees and consultations at the international level. These include organisations such as the Nature Publishing Group, World Health Organisation, and the Bill & Melinda Gates Foundation. With his colleagues, he continues to drive the
research work and publications in this area, with his citation index rising from 68 in 2008 to 501 in 2016.

Besides research, Associate Professor Chong remains a busy obstetrician who is noted for his efforts to promote natural birth and breastfeeding in Singapore. He also led the Medical Education Unit for 10 years, helping to develop teaching skills and the curriculum in the Yong Loo Lin School of Medicine, where he is currently a Vice-Dean promoting strategic collaborations with academic partners around the world. Finally, Associate Professor Chong is the Executive Director of A*STAR’s Singapore Institute for Clinical Sciences where he is working with the food and nutrition industry to translate some of his team’s research into viable products.

For his outstanding contributions towards improving population health in Singapore through the study of health and disease in early life, and its potential impact in later life, Associate Professor Chong Yap Seng is awarded the 2017 National Outstanding Clinician Scientist Award.